

How Choice, Co-Creation, and Culture Are Changing What It Means to Be Net Savvy

Technology and the way information is created, used, and disseminated have changed, as has the definition of “net savvy”

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Introduction

The vast amount of readily available information is just one reason for transforming the way we conduct research and acquire knowledge. The nature of information itself has changed. In text and other formats, information is not just created by experts—it is created and co-created by amateurs. We can select what information to receive (via RSS, for example), and it comes to us—we don't have to seek it out. More than ever before, we can choose what, when, and where to use information. With all these choices, do we really know what we are doing, whether the information is valid, or how best to use it?

Educators are challenged to help today's students reach a level of information literacy that can support them during their academic careers and beyond. Information literacy implies the acquisition of three primary skills: basic information technology skills, information resource skills (such as the ability to identify useful resources), and critical thinking skills. What do educators really need to know about today's environment? Is it the same as the one that existed when our notions of information literacy were formed? This [article] describes how choice, co-creation,

and an Internet culture are changing what it means to be net savvy.

Student Habits and Attitudes

Students who have grown up with the Internet appear to use information technology and online information effortlessly. Although differences among individuals exist, Net Generation learners are comfortable and confident in online environments, seemingly never in need of an instruction manual. Whether through chat, Facebook, or Flickr, they are in touch with friends and acquaintances, evidently trusting the information—and individuals—they encounter online. Friends of friends and those who have similar interests find each other through social networking, whether or not they have met in person. Relationships exist online, facilitated by the exchange of profiles, text messages, photos, music, and the like. Constantly connected to information and each other, students don't just consume information. They create—and re-create—it. With a do-it-yourself, open source approach to material, students often take existing material, add their own touches, and republish it. Bypassing traditional authority channels, self-publishing—in print, image, video, or audio—is common. Access and exchange of information is nearly instantaneous.

Information Resources Habits

Students frequently turn to the Internet for information before they consider the library. The Online Computer Library Center (OCLC) recently published a report that highlighted college students' perceptions of libraries and information resources.¹

Among student respondents:

- 72 percent of college students ranked search engines as their first choice for finding information;
 - 2 percent use library Web sites as the starting point for an information search;
 - 67 percent learn about electronic information resources from friends (when excluding search engines);
 - 53 percent believe information from search engines is as trustworthy as library information;
 - 36 percent use librarians to cross-reference information for validation; and
 - 80 percent use other Web sites with similar information as a validation tool, slightly more than those who use instructors for validation (78 percent).²
- Respondents 14 to 17 years old revealed that
- they use friends, relatives, library materials, and librarians to cross-reference information for validation more so than today's college students do;



- 34 percent visit their public library at least monthly; and
- while they use electronic resources more readily than older respondents, only 20 percent who have used a library Web site completely agree that it provides worthwhile information; this compares with 45 percent of college students who completely agree.³

OCLC concluded that library resources, services, and information experts “appear to be increasingly less visible in a universe of abundant information.” Even college students, who are most aware of the resources available to them through academic libraries, do not access such services as frequently as college students did in previous years. The OCLC survey also suggested that

“libraries have no monopoly on the provision of information,” and that today’s self-reliant students typically do not ask for help when using physical or virtual library resources.⁴

If successful, Google Book Search, with the goal of creating “a comprehensive full-text searchable database of all the world’s books,” will provide students with even more options via the Internet. Google has entered into partnerships to digitize books, including the full-text index of seven million books from the libraries of the University of Michigan, Harvard University, Stanford University, Oxford University, Complutense University of Madrid, the University of California system, and the New York Public Library.⁵ Google Book Search already helps users discover new

and old books as well as read limited previews of their discoveries, provided the publisher or author has given Google permission.

Not So Tech Savvy

Although Net Geners easily navigate instant messaging, e-mail, Facebook, YouTube, del.icio.us, and Flickr, their apparent technology savviness may be deceptive:

It is wrongheaded to think that undergraduates—because they have grown up in a digital age—are better at understanding the technology they use as it relates to researching information. They are at sea, drowning in a pool of information, looking for life preservers. Libraries have taken on the task for years of educating our undergraduate students, graduate students, and professors about where information resides, how to access it, and what can be done with it. This is the vestal flame of libraries, and it is really an important task that can’t be surrendered under the assumption that undergraduates know about this because they have grown up with technology.⁶

The presumed savviness of the Net Generation (or their naiveté) is not the only reason that information literacy becomes more complicated in this environment; it is the do-it-yourself, independent approach to information literacy. If students do not approach library staff, IT staff, or faculty for assistance, they may perpetuate misinformation by relying on peers. Further complicating information literacy is the diverse student body found at many institutions and the continued existence of the digital divide.

Not All Fit the Net Generation Profile

Today’s students are not just the traditional-age Net Generation, nor have they all had the benefit of state-of-the-art, ubiquitous technology. Higher education comprises a highly diverse and growing student body with a wide variety of information literacy capabilities. As more students enroll in higher

education, faculty and librarians interact with students with a broader range of backgrounds and expectations. While some come from institutions with excellent libraries, IT services, and information literacy programs, other students are less fortunate. These incoming traditional-age students do not always match the standard Net Generation profile in terms of technology competency or comfort. Nor should educators assume that comfort with personal technologies equates to an understanding of those applications used in higher education, such as spreadsheets, statistical software, or presentation systems. Moreover, older students compose a large and growing percentage of higher education. They may have information literacy characteristics and IT skills quite different from the typical Net Gener.

Technology Expands the Complexity

It is not only the students who have changed. Technology and the way information is created, used, and disseminated have changed. Rather than the Web bringing information to a user's desktop, it can serve as an entry point for an immersive, multiuser online experience or enable the creation of new content that is self-published online. Information literacy was a challenge when information was less abundant and less fluid. In a Web 2.0—and Library 2.0—world where information is constantly being created and modified, the challenge takes on new significance.

Web 2.0

The term Web 2.0 describes today's online applications, interactions, and devices. Think beyond e-mail and basic Web sites to social networking, augmented reality, and the next iteration of blogs, wikis, and podcasts. Web 2.0 practices and infrastructures facilitate creating, sharing, and interacting with information:

Web 2.0 is about the more human aspects of interactivity. It's about conversations, interpersonal networking, personalization, and individualism.... The emerging modern user needs the experience of the

Web, and not just content, to learn and succeed.... Web 2.0 is ultimately about a social phenomenon—not just about networked social experiences but about the distribution and creation of Web content itself, characterized by open communication, decentralization of authority, freedom to share and reuse, and the market as a conversation.⁷

In Web 2.0, information flows in multiple directions, is user-generated, and is shared widely. Participation becomes as important as consumption. Individualization and customer choice increase as well, with users able to locate and assemble content that meets their needs, rather than having to be satisfied with what others create. Media forms beyond text become common; authoring tools enable individuals to express themselves in multiple modalities. Hierarchical boundaries diminish; anyone can have a conversation with someone more powerful.⁸

Library 2.0

Similar to Web 2.0, Library 2.0 describes how academic librarians use Web 2.0 tools to disseminate information, enhance, and modernize their services:

...the approaches typified by Web 2.0's principles and technology to offer libraries many opportunities to serve their existing audiences better, and to reach out beyond the walls and Web sites of the institution to reach potential beneficiaries where they happen to be, and in association with the task they happen to be undertaking.⁹

In a Web 2.0 and Library 2.0 world, information moves beyond text and static content to integrate networks of people and things. Rather than static, it is fluid and constantly changing, not just in volume but in terms of formats, functions, and norms.

Needs of an Interactive, Information-Rich Culture

Information technology is not just for students—it has become part of our culture. We expect to use the Web to buy, sell, learn, and entertain. BlackBerrys

and iPods are accepted elements of our apparel. Access to information, as well as communication, is assumed to be instantaneous. Our choices for what, when, and how we access information are almost unlimited. Technology has not just changed the tools we use in daily life—it is changing social habits, behavioral norms, and expectations.¹⁰

Connectedness

Web 2.0 goes beyond e-mail, providing new options for connections and communication. This connectedness is aided by social software—enabling people to find others and spread information laterally among friends and friends of friends.¹¹ “One to one” has become “many to many more.”

Online social networks are popular among students. More than 7 million students from 2,600 colleges and universities use Facebook.com, an online directory that connects people through online social networks.¹² These social networks are groups of people who can see each other's online profiles. Facebook has networks for colleges, high schools, workplaces, and geographic regions.

There are an estimated 200 social networking sites online today. An information-fluent student would be aware that, while sharing information with others over social networks has its benefits, publishing profiles online also carries risks. Students who are not information fluent, for instance, may unwittingly post information about themselves that alludes to drinking, sexual, or gambling behaviors, assuming they can “take it back” later. In some instances, such information has been accessed by prospective and current employers, law enforcement, and university officials, leading to negative consequences. Students need to understand that their freedom to publish whatever they want online comes with responsibility. Recklessly posting information about themselves and others can have serious ramifications.¹³

Understanding social networks has become a must for information-fluent students, staff, and faculty. Issues of trust, risk, copyright, liability, and pri-

vacy may be as important as understanding how the Web works, and the first point of contact may be student services or student life rather than the library.

Participation

Beyond a tool to connect people, the Web has become a medium for participation. Users are not limited to receiving information—they can comment, collaborate, and create their own content. More than a distribution mechanism for the content of authorities, the Web allows anyone to create and publish content. Moreover, content no longer stands alone; commentary, sharing, and debate allow anyone interested to participate.

Blogs. Blogs are one example of the participatory nature of the Web. Technorati.com, the authority on the blogosphere, tracked 51.6 million blogs as of August 19, 2006:

With an increasing number of people reading, writing, and commenting on blogs, the way we use the Web is shifting in a fundamental way. Instead of being passive consumers of information, more and more Internet users are becoming active participants. This is why the blogging phenomenon and other forms of unfettered expression on the Web is often called the rise of the participant economy.¹⁴

In a world where anyone can post an opinion, theory, or criticism on the Web—under identities that may be real or fictitious—what does “blog information literacy” look like? What sources are trustworthy? Blogs have become part of our culture, cited by traditional media sources—TV, newspapers, radio—implying some level of trust. Finding information through blogs is not just about subject matter but also about the individual and his or her network.

Social Bookmarking. Social bookmarking, enabled by participatory social software, “is the practice of saving bookmarks to a public Web site and ‘tagging’ them with keywords. The cre-

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ator of a bookmark assigns tags to each resource, resulting in a user-directed, ‘amateur’ method of classifying information.” Users can see who created each bookmark and access that person’s other bookmarked resources. Users not only connect to information, they “make social connections with other individuals interested in just about any topic. Visitors to social bookmarking sites can search for resources by keyword, person, or popularity and see the public bookmarks, tags, and classification schemes that registered users have created and saved.”¹⁵

Social bookmarking and tools like del.icio.us or CiteULike are growing in popularity with students and faculty, shifting how information is categorized and discovered:

There is something immediately gratifying about adding a description to a site one is interested in, being able to do so beyond prose sentences, and not having to look to an authority for ontological assistance.

Having found another del.icio.us user, one can check what else the other user has chosen to bookmark and share, thereby learning from a potentially kindred spirit. This is classic social software, and a rare case of people connecting through shared metadata.¹⁶

Although finding, tagging, and connecting with resources through social bookmarking is easy and intuitive, are learners thinking beyond ease of access to the quality of the material? Are they sufficiently aware of how the Web works to avoid common misunderstandings, such as those that appear with the use

of Facebook and other social networking tools?

Wikipedia. Relying on information and expertise from others is typified by students’ use of Wikipedia. Often their first stop for information, Wikipedia is an editable Web page with content contributed, edited, and re-edited by others. Anyone, amateur or expert, can contribute to Wikipedia. “[T]he seventeenth-most-popular Web site on the Internet, Wikipedia [generates] more traffic daily than MSNBC.com and the online versions of the *Times* and *Wall Street Journal* combined.”¹⁷ Wikipedia entries, which exist in 200 languages, are created by hundreds of thousands of contributors worldwide. By March 2006, Wikipedia had recorded one million articles, more than four times the 120,000 entries in the *Encyclopedia Britannica*. Wikipedia symbolizes a trust in the “collective intelligence” of the vast network of people connected to the Internet. This trust in distributed cognition has significant implications for information creation and information literacy.¹⁸

Google searchers may have noticed how references to Wikipedia increasingly pop up on the first pages of their searches, influencing what information is discovered. Whether or not one trusts the validity of Wikipedia’s information, understanding how the site works has become an important information literacy skill. Do students possess the information literacy to recognize valid information from the rest? Even Wikipedia recognizes the challenges: “Five robots troll the site for obvious vandalism, searching for obscenities and evidence of mass deletions, reverting text as they go.”¹⁹

News and Social Software. Participation can also involve blending news and social software. Two examples are Memeorandum, which lists links to the latest news alongside related opinions from blogs, and Digg, which accepts articles from its community of users who then vote on what stories they like best. The stories with the most “diggs” are posted on the front page of the Digg

Web site. Although both sites exist outside higher education, such sites can shape opinion, dialogue, and, potentially, policy. With personal growth, critical thinking, and civic engagement among higher education's goals, are information literacy skills of value, even with nonacademic sites?

Google Tools. Google has become much more than a search tool. Among Google's beta projects are Google Video, Google Blog Search, and tools to "communicate, show, and share," such as Blogger, Picasa, and Google Groups.

Virtual Worlds. Games, simulations, and virtual worlds represent another participatory information format, one that is not just for young people. A growing number of adults use games and virtual worlds for entertainment and learning. Part of the appeal of games is the immersive, often multiplayer, environment. Gamers are active participants in alternate worlds, many times rehearsing skills that may be of value in real life.²⁰ Although most students appear to be at home in these environments, do they understand how they are created? What biases might be contained in the information or in how to identify misinformation?

Choice

Using RSS technology allows users to obtain information—tailored to their preferences—through Web browsers. Many blogs and other content providers display a small RSS icon that alerts users that a feed is available. When a visitor signs up for a feed and installs an RSS reader on his or her computer, the reader will receive regular updates from the original content source. RSS influences how people find information. Should an understanding of RSS be part of becoming information literate?

Podcasting is a relatively new information creation and dissemination mechanism, providing users with choice over when, where, and how they listen. Faculty can convert their lectures into podcasts that students access on MP3 players, phones, or computers. Librarians are experimenting with podcasting

for library instruction, such as teaching information literacy skills to off-campus students.²¹ But most podcasts originate from nonuniversity sources. Should students know how to evaluate the legitimacy of this content? Create their own podcasts? If students read less, should faculty create more podcasts?

TiVo, home entertainment systems, and IP phones allow push-button control of individual learning and entertainment environments. The enormous amount of choice for downloaded content (including audio, video, text-based files, and others) and playback devices (computers, MP3 players, iPods, cell phones, PDAs) provides enormous user control, bypassing traditional channels, such as publishers and news networks. As a result, individuals are becoming accustomed to more control, choice, and individualization.

We live in a world of abundant choice. You can find just about anything you want online—books, articles, images, videos, and music—from the popular to the obscure. An unimaginable selection of items are for sale on sites such as eBay. And a seemingly infinite amount of content, products, and services are offered by niche providers—so many that nobody can effectively track them all. This multitude of choices, when aggregated, is referred to as the Long Tail.²²

The theory of the Long Tail can be boiled down to this: Our culture and economy are increasingly shifting away from a focus on a relatively small number of hits (mainstream products and markets) at the head of the demand curve, and moving toward a huge number of niches in the tail. In an era without the constraints of physical shelf space and other bottlenecks of distribution, narrowly targeted goods and services can be as economically attractive as mainstream fare.²³

Put another way, [T]hese days our watercoolers are increasingly virtual—there are many different ones, and the people who gather around them are self-selected. We are turning from a mass market into a niche nation, defined now

not by our geography but by our interests.²⁴

A Long Tail of scholarly information is available on the Web; consider the academic blogosphere alone. Academic libraries have always served the Long Tail niche marketplace by providing patrons with access to deep, historical collections; inter-library loan document delivery services; hard-to-find scholarly articles and monographs; and other sources found through their extensive online databases.

Although librarians and faculty have always been experts with information, "librarians shouldn't kid themselves that people are sitting around their keyboards, unable to find what they need just wishing that a librarian was there to help them. People are actually thinking, 'I wish everything worked like iTunes and NetFlix.'"²⁵

We are leaving the Information Age and entering the Recommendation Age. Today information is ridiculously easy to get; you practically trip over it in the street. Information gathering is no longer the issue—making smart decisions based on the information is now the trick. Recommendations serve as shortcuts through the thicket of information.²⁶

To put it simply, it is better to present information in a way that organizes it instead of confusing it.²⁷ How students use information, make wise choices, and cite information properly are more critical today than ever.²⁸

The expectations can be overwhelming. Academics are asked to understand new tools, databases, and searching capabilities; new bibliographic management software; new ways of assessing and teaching information literacy skills; broad and different backgrounds of students and how that influences their information literacy skills; and new pedagogies (active learning, resource-based learning, or inquiry-based learning) that engage students more directly with information resources.

Embedding Information Literacy Across the Curriculum

The Web has changed our habits, expectations, and norms. We have come

to view the Internet as the information universe, not just the library. We expect information to be instantly accessible. The Web—and how we interact with it—has become part of our culture.


Educators are reconceptualizing information literacy as “a way of thinking, a dispositional habit, and a cultural practice.”²⁹ Beyond just a way of finding accurate and correctly sourced information for an assignment, today’s information literacy is a way of thinking about information. Critical thinking, knowledge construction, and reflection are the processes that surround information. It is also a “‘habit of mind’ that seeks ongoing improvement and self-discipline in inquiry, research, and integration of knowledge.”³⁰ Information literacy is embedded in the cultural practices of the academy. Many of our practices expose students to the way experts reason through problems, what they read, and how they create knowledge. Allowing students to learn by doing, using the same resources as professionals, acculturates them into the practice of the profession.³¹

Modern information literacy instruction must become part of instruction, across the curriculum.³² In a 2.0 approach, information literacy instruction is integrated across the curriculum. The library serves as an instructional center on campus and as the hub for a campus-wide commitment to preparing students with the information skills needed for success in the 21st century. Assessment of student learning benefits from its integration into campus activities that foster input and interaction from student and faculty library users. And yes, you might meet those goals using an online course environment, a Web-based learning object, and an interactive tutorial, but those are simply the tools.

Likewise, it is very “2.0” to integrate information literacy instruction into campus educational opportunities outside the classroom, such as residence-hall and Greek-life education, and as part of staff and faculty development programs sponsored by units such as human resources and the Center for Teaching Excellence. Both foster integration, inter-

action, user feedback, and permeable boundaries between library and other campus services—the very heart of the “Library 2.0” concept—the heart of the library as an “open system.”³³

Librarians, information technologists, faculty, and administrators are coming together, realizing that the new culture of education—influenced by information literacy initiatives, Web 2.0, and Library 2.0—can impart much more than the skills students need to get them through their academic careers. Information literacy is important, personally and professionally, throughout life.

Information literacy skills aren’t limited to the academic environment. Students may not need a strong understanding of how specific information-resource tools work because the tools change so quickly today. Having a basic understanding, however, of how information is created and communicated, of what’s needed to manage, evaluate, synthesize, and present information—whether in a person’s professional, personal, or academic life—“this goes on forever.”³⁴ 

Endnotes

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