Essay

The Technology of Law*

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Professor Hibbitts argues that contemporary fascination with the law of technology has led us to overlook the fundamental impact of the "technology of law," and offers suggestions for creating "neterate" lawyers more comfortable and conversant with technology itself. He describes how the legal news service JURIST implements many of these suggestions and provides a unique learning experience for its law student staffers.

The Tide of Technology

¶1 Growing up in Nova Scotia, within sight of the North Atlantic breakers, I learned to think in metaphors of the sea. Though far away now, I'm still tempted to regard technology as a great tide, which in the past twenty-five years has swelled from a few waves gently lapping at law's feet to a surge that could dislodge the legal profession from its very foundations, leaving us awash and adrift.

¶2 When I was a law student in the early 1980s, so-called technology in law schools was a curiosity. Law librarians researched for faculty members and students using clunky, dedicated machines hidden in back rooms. Only a few faculty had personal computers in their offices. Scholarly research was done manually via printed indexes and card catalogues and was routinely published in printed law reviews and books. Classrooms were populated by professors using chalkboards, teaching to students taking handwritten notes. Courses about technology—at the time, basically patent law, with copyright only starting to make headway—were marginal entries in the curriculum, taught by a few academic enthusiasts to a handful of would-be specialists. At most law schools, intellectual property was about as popular as admiralty law—in Kansas.

¶3 Times have changed. Today our law schools, our law libraries, and our law firms are very different places. Computers are ubiquitous and indispensible. Electronic legal research is the norm. Laptops rule the classroom. Law professors and law students line up to teach and take courses on various aspects of the new relationship between law and technology, trooping into now-voluminous offerings in IP, cyberlaw, and biotech.

¶4 We're not in Kansas anymore.

A Critical Perspective

¶5 That's the positive, upbeat way of looking at law's new relationship with technology. Of course it has a factual basis. It highlights our material progress. It gives us a sense of control. It makes us feel good.

¶6 There is, however, another view of this relationship that's more critical or contrarian. By this I don't mean mere Luddism—the view of some in the legal community that technology *per se* is bad, its ascendancy is to be deplored or its manifestations banned.

¶7 What I have in mind, rather, is something that I've firmly come to believe after over a decade and a half of rather intensive work in the technological trenches: for all the hardware on our desks and software on our disks, most lawyers and legal institutions still have a remarkably limited grasp of technology.

Cases in Point

¶8 Consider legal education. In the law school classroom where I come from, what does technology mean these days?

¶9 From the podium, it usually means PowerPoint, a series of generally text-laden slides summarizing points to be made in class. We can make things whiz around a bit, but the basic display technology is not much of an improvement on using overheads, a classroom technique dating back to the 1960s. In the hands of most instructors, PowerPoint is also far less dynamic than the blackboard it masks and often replaces.

¶10 On the student side, laptops are mostly used to take dictation from professors, a practice that's throwing legal education clear back to the early nineteenth century, when the first American law professors at Litchfield Law School in Connecticut read their lectures slowly so their students could take exact handwritten notes.[1] This time, though, the situation is actually worse, because if the professor is not saying something worth taking down, the students hide behind their screens reading their e-mail, playing solitaire, or engaging in other online distractions. In this context as well, it can be argued that technology has set us back.

¶11 What about research? Well, we have Westlaw and LexisNexis. They're powerful databases, and they help us. But they're legacy technologies left over from the 1970s that are now simply being delivered over the Internet.[2] We make a big deal out of teaching students so-called electronic legal research, but the term is largely a conceit—what we're really doing is teaching them to navigate these little wading pools of proprietary data while we largely ignore the great big Internet sea of legal and nonlegal information that's swirling around us.

¶12 Then there's scholarship. Today we have electronic legal journals plus electronic archives and repositories such as SSRN and Berkeley's bepress. Yet these journals and archives are little more than electronic dumping grounds for articles written the same way we wrote scholarship twenty, fifty, or even seventy-five years

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1. Marian C. McKenna, Tapping Reeve and the Litchfield Law School 166 (1986).

2. Bernard J. Hibbitts, *Last Writes? Reassessing the Law Review in the Age of Cyberspace*, 71 N.Y.U. L. Rev. 615, 657–60 (1996).

ago. They barely contain hyperlinks, let alone multimedia, user comments, or other advanced technological features. Despite the availability of online prototypes as far back as the mid-1990s[3]—featuring hypertext, images, audio clips, pull quotes for quick scanning, paragraph numbering, reader-author dialogue, etc.—the vast majority of legal scholars have not reorganized or reconceived their scholarship for cyberspace. A few law professors are writing blogs[4] that are starting to take them in this direction, but this slouching toward Bethlehem is slow and painful, and not particularly encouraged by most law school tenure and promotion committees, which continue to favor traditional placements in traditional, and ultimately print-based, law reviews.

Everything New is Old Again

¶13 In each of these instances, we've fallen short of taking full advantage of new technology. Proclaiming that we've invented the sports car, we have in fact built the horseless carriage. To flip a line from an old song, everything new is old again!

¶14 There are several reasons for this failure of vision:

1. Lawyers are not technologically inclined. Today's law students are generally drawn from the ranks of humanities majors, not those of scientists and engineers. They get into law school because they're skilled with words, not because they're good at building, designing, or using tools. As far as the LSATs are concerned, such skills are irrelevant.
2. Law is conservative. Lawyers are trained to respect and follow precedent. We revere tradition. We tend to project ourselves using old-fashioned forms and old-fashioned media. Our judges wear robes that look back to the Middle Ages. We admire handwritten deeds and conveyances that were professionally popular into the twentieth century. Technology that is less than a century old—television, for instance—tends to make us downright nervous, however culturally commonplace and mainstream it may be. We don't really want to deal with it.
3. The legal education process that shapes future lawyers focuses on the law of technology, not the technology of law.

The Technology of Law

¶15 It's the last of these reasons for lawyers' technological myopia that I'd like to highlight here. In a sense, it's nothing more than a manifestation and concretization of the first two. But it's worth exploring because it's easier for us to address than the others.

¶16 Traditional legal education regards law and technology as fundamentally distinct. It considers the former primarily as a tool to regulate the latter. This is all

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3. *See, e.g.*, Bernard J. Hibbitts, *Yesterday Once More: Skeptics, Scribes and the Demise of Law Reviews* (Version 1.0, created Mar. 6, 1997), http://faculty.law.pitt.edu/hibbitts/akron.htm.

4. *See* Daniel Solove, *Law Professor Blogger Census*, CONCURRING OPINIONS (Aug. 6, 2007), http://www.concurringopinions.com/archives/2007/08/law_professor_b_9.html.

well and good, but it masks a larger, perhaps somewhat inconvenient truth: Law itself is inherently technological.

¶17 Law was largely born in technology, communications technology in particular. The invention of writing enabled law to come into being and be clearly recognized and interpreted as a coherent body of decontextualized rules, as opposed to just "custom"—what had been done before. No longer simply a social process, it became a text of principles that carried independent weight. Writing made it possible to conceive of a "government of laws and not of men."[5]

¶18 From the fifteenth century onward, the printing press extended written law's range and authority. Law became standardized and uniform. Literally fixed by print, its interpretation became highly nuanced—a matter of grammar, syntax, and even punctuation. Lawyers became increasingly skilled at, and known for, their ability to manipulate texts. In England, lawyers turned themselves into living incarnations of text, abandoning brightly colored robes for black and white.[6] By the late nineteenth century, under the increasing pressure of print, law practice on both sides of the Atlantic had largely shifted out of the courtroom altogether, forcing orators and rhetoricians to give way in the professional hierarchy to draftsmen and construers working largely for corporations and governments, themselves founded on printed charters and constitutions. The focus of legal education shifted from observation, recitation, and mooting to the university-based study of published appellate opinions.[7] In the United States, law students took to editing and publishing printed law reviews and were ranked on their performance in written examinations. Law faculty everywhere became increasingly evaluated by their printed scholarship, not their oral teaching.[8]

¶19 Because this transformation defines so much of modern legal practice, law students and others can gain more insight into the nature of law by considering it *as* technology than by just learning the law *of* technology. There is, of course, a law of technology that overlaps chronologically with many of the legal developments I've associated with print—the law of libel and copyright laid down on both sides of the Atlantic since the seventeenth century. But even the most thorough appreciation of that law is but a footnote to the more sweeping story. Indeed, to focus on the historical law of technology as a shaper of modern law is to very much miss the larger point that law is largely a reflection of the technology used to express it. Focusing on the contemporary law of technology—copyright, IP, and so on—as our primary entrée to law's future is similarly misguided.

Teaching the Technology of Law: Two Approaches

¶20 How might one teach the technology of law so as to sensitize law students—future lawyers—to its power and potential? There are, I think, two identifiable approaches, which I'll label "functional" and "conceptual."

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5. *See generally* M. Ethan Katsh, The Electronic Media and the Transformation of Law (1989).

6. *See* W.N. Hargreaves-Mawdsley, A History of Legal Dress in Europe 88 (1963).

7. *See* Lawrence M. Friedman, A History of American Law 610–13, 616 (2d ed. 1985).

8. *See id.* 625, 630–31.

The Functional Approach

¶21 The functional approach is very much "how to," introducing students to the technology of law by teaching them how modern legal technologies work and how to use them in a basic sense. This approach is taken right now in those still-too-scarce legal research courses that for at least a few weeks a term reach beyond LexisNexis and Westlaw into the Internet at large. It's also taken in a few special offerings at a handful of American law schools that attempt to familiarize students with the use of electronic tools in clinical and litigation environments (Columbia), legal applications of artificial intelligence technology (Stanford, Chicago-Kent, Pittsburgh), and virtual worlds like Second Life (Harvard).[9]

¶22 All these courses are valuable. They allow law students to experience the "shock of the new" and put on their radar technologies that will become increasingly important in the course of their careers.

¶23 The functional approach has its limitations, however. Purely functional courses can get too technical, too bogged down in the precise details of how a technology or a product works, becoming hi-tech versions of "Law Office Management." This sometimes makes them gratuitously geeky, "gee-whiz," or even would-be stalking horses for commercial interests in ways that prevent them from being taken seriously by more than a handful of students and professors.

¶24 Many functional courses are also passive, teaching students how to deal with new technology off-the-shelf, as opposed to participating actively in its creation and propagation. They teach consumption, not contribution. In this respect they lack what might be called a "rhetorical" element. Most importantly, perhaps, they lack a "critical" element: they usually do not give students a chance to think about what using technology actually means—what new opportunities it opens up regardless of the form in which it is originally presented, and how taking advantage of those opportunities may change the very nature of law itself. To address this aspect, we could take a more comprehensive "conceptual" approach to studying the technology of law, one that embraces both practice and theory.

Neteracy

¶25 My version of what a conceptual approach might look like is a course called "Neteracy for Lawyers," which I've taught at the University of Pittsburgh School of Law since the late 1990s.

¶26 "Neteracy," short for Internet literacy, is both a skill set and a mentality appropriate to our new technological environment. I first used the term in a 1996 article[10] to describe a set of core competencies and understandings derived from online experience that would allow and even encourage people—in that instance legal scholars—to work, think, and express themselves effectively in cyberspace, as opposed to in writing or print. The term has since caught on among scholars of English composition, and was recently popularized by City University of New York

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9. *See generally, e.g.,* Bernard Hibbitts, *Innovative Instruction*, Nat'l L.J., Sept. 16, 2002, at C4.

10. Bernard J. Hibbitts, *Yesterday Once More: Skeptics, Scribes and the Demise of Law Reviews*, 30 Akron L. Rev. 267, 306 (1996).

English professor Aaron Barlow in a 2008 book entitled *Blogging America*.[11] Barlow has described neteracy as being

> comfortable with the idea that, one way or another, we can handle most anything we find on our screens. We can judge data and websites at the flick of an eye, picking up subliminal clues that tell us the level of expertise involved. We can tell at a glance what links to follow, whether we are being lured into a commercial morass or might be heading towards a new gem.[12]

By definition, neteracy itself is still a set of capacities in flux. Its exact parameters are developing as technology develops. So the neteracy of the late 1990s is not exactly the neteracy of today. But the basic skill set and the attitudes and behaviors it reinforces have remained relatively constant.

¶27 Neteracy is not something that can be taken for granted at the outset of the twenty-first century, any more than the still socially novel skill of literacy could be in the twelfth. In 2009, law students are much more "wired" (to use an outdated metaphor) than their forbears were even ten years ago, but their deep familiarity with technology is still limited. They are, so to speak, net-native but not necessarily net-literate. They come to law school carrying the latest gadgets and conversant with the latest online tools and applications (Facebook, Google, blogs, wikis, Twitter, and so on), but there is great deal they don't know, a great deal they take for granted and, in the absence of instruction, a great deal they haven't tried or thought through. On top of this, they're hit with a style of law school pedagogy that largely delegitimizes what they do know and stuffs them back into the boxes of traditional learning.

Teaching Neteracy

¶28 On the most basic level, teaching neteracy—by analogy with literacy—requires concentration on three basic skills: reading, writing, and thinking. In an online world, however, those activities involve more than traditional definitions might suggest.

Reading

¶29 When we think of reading we still intuitively think of the term "literate"—meaning reading written or printed text. On the Internet we need to understand "reading" metaphorically, as the larger exercise of locating, assimilating, and assessing ideas in multiple online formats. This can be broken down into a series of diverse but interrelated skills.

¶30 **Gathering** meaning online begins with looking in the right place(s), a daunting prospect indeed, with the whole online world open before us. Incoming law students have a tendency to think that Google (or Wikipedia) tells all, and they grab whatever they see at the top of searches or entries. But of course this approach is far too narrow. Law students need to labor in multiple vineyards—to collect

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11. Aaron Barlow, Blogging America 20 (2008).

12. Aaron Barlow, *The Medium Is the Process: The Process Is the Message*, E Pluribus Media, July 12, 2007, http://www.epluribusmedia.org/columns/2007/20070711_process_medium.html.

material via search engines, online encyclopedias, archives, web sites, blogs, social networks, and so on. They should not be afraid to work in multiple languages, extending their own linguistic skills with online translators. They should read online text, but also look at images, watch video, and listen to audio. The online world is larger and more diverse than they tend to think, especially when they choose to think formally about a research problem.

¶31 Having gathered information options of various sorts from various sources, law students must learn to **filter** the results. The generally higher transaction cost of printing material versus putting it on the Internet means that Internet-based information is generally much more voluminous and variable in quality than print. Unless you really want to drink from a firehose, filtering Internet content is a necessary control. In this context, law students must take new responsibility for their own learning and continually challenge what they see—looking at where it comes from (type of site/domain, institutional/personal origin, who has written it or made it), when it was written or made, and how it is presented (the style/tone with which it is said or shown) to determine if it is worth plumbing. Law students are not particularly good at doing this yet, and that is dangerous for everyone.

¶32 Once filtered, resources must be absorbed or assimilated. Online, this is done less by traditional reading, even skimming, than it is by **scanning**. This ostensibly cursory approach to "reading" makes sense in a very time-sensitive environment where there is always another web site ready to be discovered at the click of a mouse. In this sense, scanning is arguably the next stage in reading's historical movement from a so-called "intensive" process of memorization and mental digestion of material through slow, repeated perusals to an "extensive" process of once-through reading.[13] We need to teach students how to scan quickly and effectively, with understanding and retention.

¶33 The process of scanning is inevitably tied in to the challenge of **navigating**. This aspect of online reading references the multidirectionality of the web and other online environments. Certainly print needs to be navigated too, but print is linear and does not present readers with the same options or distractions. The centerpiece of online navigation is the hyperlink—the golden thread that holds the World Wide Web together. To navigate the web successfully, however, one must have at least a rudimentary sense of where one is going and how to get there (and back again). All this threatens to come apart if students are not comfortable dealing with an apparently infinite tangle of web sites and pages, are too rushed to look, or are unable to follow the visual and verbal cues left for them by site designers. Those circumstances threaten to make reading pointless.

¶34 Once information has been gathered, filtered, scanned, and navigated it must of course be **comprehended**. Again, the nature of online communication encourages us to train students in distilling and synthesizing meaning on a variety of planes, in a variety of senses. Online they also need to come to grips with the reality that comprehension is very much a work in progress as information on web pages and elsewhere continually appears, changes, and disappears. In other words,

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13. *See e.g.* Carl F. Kaestle, *The History of Readers*, *in* LITERACY IN THE UNITED STATES 52–53 (Carl F. Kaestle et al. eds., 1991).

neterate comprehension is pointedly dynamic, not definitive, and readers need to be able to cope with this kind of fluidity.

¶35 Finally, online resources—once selected, unpacked, and thoroughly understood—must be **evaluated**. Critical faculties are called into play here just as they are in filtering, albeit perhaps at a more granular level. Does the comprehended information seem accurate? Should it be trusted? Does it—or do its authors—need to be queried or tested before materials can be believed? Again the key here is for students, or anyone else for that matter, to take responsibility for critical analysis of sources instead of leaving that largely to others.

Writing

¶36 Reading is only the beginning of neteracy. Just as the true mark of a literate in our society is knowing how to write, the true neterate must be able not only to derive but also to convey meaning online. It is truly amazing to me, fifteen years after the initial popularization of the web, that we aren't teaching law students how to express themselves in this medium. To press the literacy analogy, imagine if we were educators caught up in the intellectual reawakening of the twelfth century and were not teaching our students how to write!

¶37 A decade ago, teaching students how to write online was admittedly a painful process. In the late 1990s, I had to teach my law students HTML and give them direct access to servers where they could post their rudimentary web sites and other efforts. Times have changed—although web development has actually grown more complex and challenging, basic verbal and visual expression has become possible for the masses through the development of blogware and social networking applications that have changed the Internet from an "information superhighway" or repository to an interactive community space.

¶38 Most law students nonetheless have limited experience actually creating online content. In the United States, perhaps two-thirds have created cookie-cutter Facebook pages, but apart from that, the fraction who actually write blogs or maintain web sites in still tiny—maybe five percent at most. Some observers have even suggested that under the combined pressure of career-related fear and other distractions, the number of active law student bloggers is shrinking.[14] So, on the Internet, most of today's law students are voiceless. And most of those who can express themselves beyond the ephemeral margins of e-mail and text messaging are doing the equivalent of writing in crayon.

¶39 Yet the Internet is potentially the most powerful expressive tool ever created. We need to help our students exploit it fully for serious personal and professional purposes to help their eventual clients and themselves. Remaining content with the present situation will leave them in the position of villagers from the sixteenth century who had to wait for roving scriveners—the early modern equivalent of IT support—to come by to take their dictation and make their words and ideas available to others in writing.

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14. Orin Kerr, Law Student Blogs, posting of Orin Kerr to The Volokh Conspiracy (Jan. 29, 2009), http://volokh.com/posts/1233262560.shtml.

¶40 In the process of teaching our students how to write online, we can encourage them to take more direct responsibility for the quality of their online environment. Ironically, these members of the "green generation" are living in an information world largely made up of garbage. They need to develop their own expressive skills and abilities so they can actively contribute to providing better and more accurate online content. If we don't help our students find their voices online, we can't complain about the quality of what's out there because we're not doing all we can to help improve it ourselves.

¶41 Of course online "writing" metaphorically embraces multiple activities, just as online reading does. Each of these activities takes a relatively higher level of technical skill.

¶42 Let's begin with **composing**, understood here in the basic sense of composing in text. And let's assume for the moment that we don't have to teach someone HTML—we can just get them to write a blog post, for instance. Assuming the technical know-how to do that, how should they express themselves? What works? This is a matter not so much of technology as rhetoric.

¶43 Writing meaningful text for the web is very different than writing it for the page.[15] Because web sites are scanned, and because screen-reading is still somewhat uncomfortable, verbal constructions should be short. Sentences should not contain many subordinate clauses. Points should be visually highlighted or bulleted. Important information should be put up front where it can be seen immediately. Journalistic "inverted pyramid" style should be preferred to simple linear narrative. The web, at least as presently constructed, is well suited to short bursts of highlighted, prioritized information, not long essays or scholarly papers.

¶44 Web writing also means hyperlinking, which we often forget is an editorial as well as a technical activity. Neteracy encompasses knowing when and when not to hyperlink, what to link to, and how to place links in text for the greatest rhetorical effect. After all, links emphasize. They allow digression. They invite departure. They connect our online information to that provided by others. The significance of all this is reflected in the fact that there are now entire companies in the United States devoted to legal hyperlinking—hyperlinking legal briefs or other texts for law firms.[16] While providing a good service for information seekers, it also reminds us of how non-neterate most lawyers are. The scriveners are coming to town, and we're lining up. Frankly, I think it's embarrassing.

¶45 Expressing oneself online is, however, more than just a matter of writing or hyperlinking text. Neterate law students should also know the rudiments of **design**. An effective web site, even an effective blog, is a matter of look and feel and not just textual content. This is a hard, but necessary, lesson to teach law students, who are used to simply keyboarding words onto a screen and who have implicitly or explicitly been taught to demean the visual. The screen is a blank canvas waiting for images, colors, shapes, and formats—not just words—to make it meaningful, memorable, and persuasive. Moreover, good design is a social as well as aesthetic

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15. *See generally* CRAWFORD KILIAN, WRITING FOR THE WEB (4th ed. 2009).

16. *See, e.g.*, Hyperlink Legal, Linked Legal Briefs, http://www.hyperlinklegal.com (last visited Oct. 23, 2009).

activity. Students must be sensitized to the importance of making their online creations usable and accessible to others in ways that facilitate interactivity and mutual participation.

¶46 Finally, for brave souls, web "writing" is also a matter of **construction**—building large-scale online entities capable of carrying a great deal of information, fostering wide-ranging communication, and telling many stories over time. These might be entire web sites, elaborate multi-author blogs, wikis, or freestanding applications. This is the ultimate technological high ground. We should encourage our students to think about niches for online services taking these forms—or combinations of these forms—and how they should operate. We should sensitize them to the implications of various technological options and help them think about the issues behind the construction process. How should information be categorized? How can communication be facilitated and managed? How should data be tagged and parsed? How customized should it be to user needs and expectations? How can services be made more useable? And how do we make all the parts of a large online presence fit together as a coherent whole? These questions are not unprecedented—it is just that in the world of printed articles and books we take the answers for granted.

Thinking

¶47 So far we have two key pieces of the great arch of neteracy—"reading," and "writing." Both, as promised, have functional and conceptual elements. But we're still missing the keystone—neterate thinking, the mindset that neteracy promotes.

¶48 This mindset is to some extent the skills just discussed, writ large. Neteracy privileges and encourages them. Because neteracy privileges hyperlink navigation and user manipulation of content, neterate thought is highly nonlinear, anti-hierarchical, and indeterminate. Because neteracy encompasses the verbal and nonverbal, it is holistic. Because neteracy facilitates continual feedback, revision, and collaboration, neterate thought—perhaps even neterate truth—is interactive and social, even collective. Because neteracy is dynamic and personal, it is intuitive and narrative, emphasizing experience over exposition. Because neteracy is fluid, almost by definition a work in progress, neterate thought is highly adaptable and creative, indulging work-arounds, repurposings, and innovation in general.

¶49 Of course to some extent this is all chicken and egg—persons who are cut out in a certain way may thrive more as neterates, and those who develop good neteracy skills can better embrace the intellectual and psychological manifestations of neteracy.

¶50 Ultimately, neteracy may not just facilitate and induce a new way of thinking, it may literally change our minds. A variety of educational psychologists have suggested in recent years that in light of various social and technological developments, the coming decades belong to the so-called right-brained—people who excel at holistic reasoning, pattern recognition, and nonverbal communication using the right hemisphere of the brain, as opposed to individuals who favor

sequential reasoning and precise verbal analysis using their left hemispheres.[17] As it happens, the skills that are associated with right-brain thinking overlap considerably with those associated with neteracy. If we teach our students to be neterate, we may in fact be doing nothing less than building better legal minds for the future. And that beats the heck out of just teaching them IP law.

JURIST as Neteracy Lab

¶51 At this point I've described what neteracy involves, but I haven't explained how to get there—how to actually get students to read, write, and think as I've described.

¶52 In theory, there could be many vehicles for neteracy. In my University of Pittsburgh course, law students conduct a variety of evaluative usability and design studies, build rudimentary web sites and blogs, and read and discuss materials on the conceptual and structural implications of net-based communication for reading, writing, and thinking.

¶53 Since the course began, however, the primary learning context for students has been their work on JURIST (jurist.law.pitt.edu), the Webby Award-winning legal news and research service I established at Pitt Law in 1996. JURIST is now powered by a team of about forty law students working under me and two full-time professional staff members. The site produces a regular real-time stream of heavily documented U.S. and international legal news, supplemented by frequent op-eds and special features.

¶54 Although not initially set up as a student learning vehicle, JURIST has turned out to be an excellent environment for teaching neteracy to law students. For its readers, it's a news source and a public service, but for us it's a laboratory for developing and testing a whole new student skill set. In that respect, the project has drawn national and international attention, with academics from as far afield as France and Australia coming to Pittsburgh specifically to see how we do what we do.[18]

How Does JURIST Teach Neteracy?

¶55 JURIST teaches neteracy in all the ways I described earlier. First of all, working on the site under strict professional guidance gives student staffers detailed practical experience in reading information on the Internet. JURIST is the only online law school environment where law students—over the course of one semester or during multiple years of service to the site—regularly mine Internet resources for serious research purposes. Every time a newswriting staffer (in JURIST parlance, an "anchor") does a shift for *Paper Chase*, JURIST's news service, he or she is expected to venture online to cull key documents and information relating to a

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17. *See generally, e.g.*, Daniel H. Pink, A Whole New Mind (2006).
18. Certain aspects of our process are more fully described in a recent article. Abigail Salisbury, *Skills Without Stigma: Using the* JURIST *Method to Teach Legal Research and Writing*, 59 J. Legal Educ. 173 (2009).

breaking issue. Anchors have to grapple with web sites and resources of all types in real time. Armed with an ever-expanding staff manual that is basically our equivalent of the *Bluebook*, they have to seek, they have to find, they have to evaluate. They may ask for help from professional editors who are always with them virtually via Gtalk, Google's chatware,[19] but they have to do the basic legwork on their own. And if they fall short they're accountable to our thousands upon thousands of readers, who do not hesitate to jump on any blips or errors. In this kind of demanding environment, JURIST's staffers not only get to know their way around the Internet, they also learn what to look for, what cues to pay attention to, and how to interpret the information they find.

¶56 The result is a unique form of engagement that law students generally lack in other pedagogical environments. At the best of times, disconnection from what is actually happening in the legal world is a buffer that lets law students concentrate on their studies. The political experience of the past several years has, however, cast ivory tower neglect of the immediate present in a somewhat different light, as most law students and law professors chillingly conducted business as usual while agents of the U.S. government abused detainees in Guantanamo, Abu Ghraib (Iraq), and Bagram (Afghanistan), and, through warrantless wiretapping and other legal end-runs, violated the constitutional rights of aliens and U.S. citizens alike on what appears to have been a massive scale. While little of this made it into law school classrooms or the courts until the problems were very far advanced, JURIST students were researching and grappling with these issues as soon as they arose in the public policy arena.

¶57 Of course JURIST students write as well as do research. Writing on JURIST is different than writing in traditional legal or academic environments. First, it is quintessential storytelling. JURIST reports news—our posts follow a highly scannable two-paragraph format well-suited to the Internet. The first paragraph tells the immediate story in inverted-pyramid style, while the second paragraph provides context, often based on JURIST's previous coverage of an issue. JURIST anchors are expected to write in relatively short, crisp sentences and in plain English, avoiding overdoses of legalese. Addressing a global audience, they have to write in terms as understandable to someone in Namibia as New York—which, by the way, is also a great cure for the innocent American-centrism of some of our student staffers. News reports are interlaced with hyperlinks to key primary and secondary source material that make our posts intensive, rather than extensive—they may not go on for pages, but they still allow a reader or researcher to explore critical issues in depth along user-defined lines.

¶58 Actual composition is done in Blogger,[20] an easy to use Google-owned backend that we use as our basic publishing tool. For those of you already familiar with JURIST, you might be surprised to know that, from a technical perspective, the site is really constituted by some seventeen "blogs" synthesized into a single service. For the students, the editing interface is very simple, and the software is accessible from anywhere. Of course JURIST itself is not a blog—we've just co-

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19. Google Talk, http://www.google.com/talk (last visited Oct. 23, 2009).
20. Blogger, http://www.blogger.com (last visited Oct. 23, 2009).

opted blogging software to do our publishing job (you could publish the *Washington Post* this way, but that wouldn't make it a "blog" either). That's an integral part of neteracy—turning tools developed for one purpose to another and then mashing the results together to build something new.

¶59 In the process of writing their stories, JURIST anchors leverage the Internet not only to read resources but to communicate and interact with other people in real time. Lawyers, policymakers, activists, journalists, and others are often queried for the information, documents, or tips that ultimately contribute to a story. As previously mentioned, anchors work with an editor—usually a professional—who can watch their stories as they are being written, and provide feedback and correction as appropriate. Editing assistance is occasionally provided by other students— "peer editors"—who work with junior staffers prior to their stories being professionally reviewed. As JURIST's publisher and editor-in-chief I'm continually involved with the news stream, fielding research and writing queries from our professional staff in real time. In this sense, JURIST is a highly collaborative "live" enterprise where staffers learn to work collectively as part of larger "virtual teams"[21] distributed across floors, sometimes across town, and sometimes even across borders if staff members travel. After a given story is published, interaction continues as we hear from readers around the world with comments and any concerns. The students become very conscious of audience and the importance of accuracy, far beyond what would be the case in traditional publication settings, such as law reviews, that set writers and readers further apart.

¶60 In the process of all this new-style reading and writing, I hope that my students learn to think differently. But I have to admit it is hard for me to prove this without being inside their heads or testing them *en masse* against their non-JURIST colleagues. Impressionistically, however, I believe that the law students who have come through JURIST's door over the years are more adaptable, more innovative, more globalist, more open to collaboration and interaction, and generally more intellectually dynamic than many of their colleagues. I hope these tendencies follow them into their professional careers.

Neteracy for All

¶61 If their experiences with JURIST do turn out to shape the work and the minds of my law students, it will not have been the first time that law students have been shaped by a medium. Consider the institution of the law review, which in the late nineteenth century capped the penetration of print into the U.S. legal academy by turning law students into publishers.[22] The high-literacy requirements of the law review developed research, interpretative, and expressive skills in those students that served them well as they went into law practice, law teaching, and judgeships, and arguably had a huge impact on the shape and style of twentieth century American law. Perhaps the successful spread of legal neteracy requires a similar

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21. *See generally* JESSICA LIPNACK & JEFFREY STAMPS, VIRTUAL TEAMS: PEOPLE WORKING ACROSS BOUNDARIES WITH TECHNOLOGY (2000).

22. Hibbitts, *supra* note 2, at 617–18.

vehicle, a similar opportunity to galvanize students around an enterprise that teaches them important cultural and professional skills while constituting a unique service.

¶62 I'm not necessarily suggesting that JURIST is that vehicle, or that other law schools need to build their own JURISTs. I do think, however, that law schools need to develop more online working environments where students can learn by doing, working directly, intensively, and collaboratively with new technology in a way that is intellectually, professionally, and culturally productive. In other words, effectively teaching would-be lawyers neteracy and fundamentally educating them in the technology of law requires as its centerpiece—or at least as its leading edge—some kind of clinic-like hands-on environment where new ways of thinking can be actively experienced and experimented with in the process of serving larger goals. Such environments can then be used as vehicles for getting students to think seriously and explicitly about some of the deeper relationships between law and technology that have developed over time.

¶63 This kind of education need not stop when students go out the law school door. Consistent with a new emphasis on in-house training, law firms might consider developing more online environments for junior lawyers—even, to start with, subject-specific blogs—that would engage them, teach them, and in the process perhaps provide services to the larger community that would enhance firm reach and reputation.

Rise with the Tide

¶64 But who is going to develop these environments? Who will lead the way? Despite my experience with JURIST over the past thirteen years—or perhaps because of it—I don't think the developers or the leaders will, in the long run, be people like me. Most law professors are too bogged down by other activities and priorities. We teach and we publish. We generally lack the technical depth, the management skills, the incentive structure, and the sheer patience to make this work.

¶65 So who is going to do it?

¶66 You are!

¶67 Law librarians are in a much better position than law professors in this respect. After all, you're information scientists. You tend to be more familiar with new technology than regular law school faculty, administrators, or lawyers. You're already experimenting with that technology, continually building tools—web sites, blogs, wikis, and so on—that could easily be expanded or repurposed to serve large-scale pedagogical as well as informational purposes. You teach law students legal research and writing processes that are right next door to neteracy. You guide and mentor young lawyers. You're stewards and institution-builders, and you take the long view. You're dedicated to public service and engagement in ways that other legal professionals are not.

¶68 This combination of circumstances encourages me to believe—encourages me to hope—that law librarians will take the lead in creating, supervising, and sustaining online information spaces like JURIST where law students and recent

law school graduates will have real opportunities to appreciate, master, and leverage the technology of law.

¶69 Be ambitious. Turn your libraries inside out. Use new technology to transform your youthful patrons into neterate content creators and publishers, and let them help you and your institutions take law back to the people. Rise with the tide!

¶70 Tomorrow's lawyers, clients, and citizens will thank you.