

INFUSING TECHNOLOGY SKILLS INTO THE LAW SCHOOL CURRICULUM

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I. INTRODUCTION

In 1992, the MacCrate Report shook up legal academia by identifying a gap between skills that modern lawyers need and the doctrinal emphasis of most law schools.¹ MacCrate recognized a series of fundamental skills, including problem solving, legal analysis and reasoning, legal research, factual investigation, communication, counseling, negotiation, litigation and alternative dispute resolution procedures, organization and management of legal work, and recognizing and resolving ethical dilemmas.² To the extent that law school curricula underrepresented these skills, the report suggested that they be taught within existing doctrinal courses.³

In the twenty-one years since MacCrate, the practice of law has continued to evolve, with perhaps its greatest transformation arising from technological innovation. We have seen, among many others, the birth and maturation of the Internet; the spread of mobile computing, from laptops to netbooks to tablets to smartphones; the introduction of law firm automation systems; the emergence of electronic filing; and the rise of digital communication, such as e-mail, SMS, and web conferencing. Today's lawyers are implementing paperless offices and cloud-based practice-

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¹ See SECTION OF LEGAL EDUC. & ADMISSIONS TO THE BAR, AM. BAR ASS'N, LEGAL EDUCATION AND PROFESSIONAL DEVELOPMENT—AN EDUCATIONAL CONTINUUM 4 (Robert MacCrate ed., 1992) [hereinafter MACCRATE REPORT], available at [http://www.americanbar.org/content/dam/aba/publications/misc/legal_education/2013_legal_education_and_professional_development_maccrate_report\).authcheckdam.pdf](http://www.americanbar.org/content/dam/aba/publications/misc/legal_education/2013_legal_education_and_professional_development_maccrate_report.authcheckdam.pdf).

² See *id.* at 138–40.

³ See *id.* at 128 (“Law schools [should] . . . modify their curricula to . . . include . . . revisions of conventional courses and teaching methods to more systematically integrate the study of skills and values with the study of substantive law and theory . . .”); see also Alice M. Noble-Allgire, *Desegregating the Law School Curriculum: How to Integrate More of the Skills and Values Identified by the MacCrate Report into a Doctrinal Course*, 3 NEV. L.J. 32, 33 (2002) (recapping efforts to incorporate skills into doctrinal courses, providing examples, and suggesting ways to overcome obstacles).

management systems, starting up virtual law practices, and fending off challenges from document preparation services like LegalZoom. Hundreds of blogs, magazines, conferences, listservs, and forums have been developed to advise lawyers on effective and efficient ways to utilize technology in their work.⁴ Legal technology consultants now occupy a lucrative and growing niche.

Despite these profound changes, legal education has never considered technological proficiency to be a key outcome. Law professors may debate the merits of audiovisual teaching tools. Do they work when they should? Do they facilitate learning objectives or are they just toys? Whom should we call when something breaks? And so on. Teachers use course management sites like TWEN and Blackboard to share information and manage basic course functions. Many fear that laptops and other devices distract students in class, and some institute outright bans.⁵

Among many law professors, technology is warily accepted, but only for the purpose of achieving traditional educational objectives. But, what if educators viewed technology as a competency that students need to master in order to succeed in practice? This Article identifies gaps between the use of technology in practice and in our classrooms;⁶ suggests ways that we can change what we teach, and the way we teach, to address the disparity;⁷ considers the benefits and drawbacks of developing new courses, or infusing technology-related outcomes throughout the

⁴ See, e.g., LAW PRAC. MAG., available at <http://www.lawpracticemagazine.com/lawpracticemagazine/> (last visited Aug. 12, 2014) (providing a magazine published by the ABA's Law Practice Management Section, which has a heavy focus on technology issues); LAWYERIST, <http://lawyerist.com/> (last visited Aug. 12, 2014) (providing news and information about law practice, including law firm marketing, practice management, and technology, among other things); LEGALTECH, <http://www.legaltechshow.com/> (last visited Aug. 12, 2014) (informing about an annual conference for law firms and technology departments); TECHNOLOGY, <https://www.technolawyer.com> (last visited Aug. 12, 2014) (giving news, newsletters, and forums devoted to legal technology products, practice management, and related issues).

⁵ See, e.g., Martha Neil, *More Law Profs Ban Laptop Use in Class*, A.B.A. J. LEGAL EDUC. (Jan. 11, 2010, 6:47 PM), http://www.abajournal.com/news/article/more_law_profs_bring_down_hammer_banning_laptop_use_in_class/.

⁶ See *infra* Part IV.

⁷ See *infra* Part V.

curriculum;⁸ and proposes methods to encourage professors to teach with technology in ways that model the practices of successful attorneys.⁹

II. AN ADVANTAGE FOR LAW STUDENTS WITH TECHNOLOGY SKILLS

Conversations with professors about the possibility of incorporating technology skills into the law school curriculum have revealed a misperception that current students already “get it.” We see students with laptops in class,¹⁰ we watch them use social media,¹¹ and we admire their facility with gadgets, but their understanding of technology is shallow.¹² Information literacy, for example, “has not improved with the widening access to technology: in fact, their apparent facility with computers disguises some worrying problems,” including inability to evaluate sources of information.¹³ Students’ abilities are oriented toward their personal, social, and educational needs, and may not be well matched with professional skills needed in the practice of law.

Conversations with professors suggest another assumption: namely, that if you work for a law firm or other business, critical technology choices have already been made for you, including case management software, research databases, website design, and policies on client communication. But, “[a]ttorneys entering smaller practices may need

⁸ See *infra* Part VI.

⁹ See *infra* Part V.

¹⁰ See Rich McCue, *UVic Law Student Technology Survey 2013*, RICH’S RANDOM THOUGHTS (Sept. 12, 2013, 11:58 AM), <http://richmccue.com/2013/09/12/uvic-law-student-technology-survey-2013/> (finding that 97% of incoming law students at the University of Victoria own laptops).

¹¹ Only 3% of incoming law students do not use online social networks. *Id.*

¹² See Daniel Bates, *Are ‘Digital Natives’ Equipped to Conquer the Legal Landscape?* 6 (Univ. of Cambridge Faculty of Law, Legal Studies Research Paper No. 26, 2013), available at <http://ssrn.com/abstract=2313115> (“Whil[e] it is true that students . . . have better [technology skills than they did ten years ago], this has not . . . translated into students who are better at undertaking legal research . . . or . . . grasping the concepts and tools required more quickly.”); Anoush Margaryan et al., *Are Digital Natives a Myth or Reality? University Students’ Use of Digital Technologies*, 56 COMPUTERS & EDUC. 429, 439 (2011) (arguing that, despite preconceived notions about the technological sophistication of “digital natives,” students have limited understanding of what tools they could adopt and how they could use those tools for learning).

¹³ UNIV. COLL. LONDON, INFORMATION BEHAVIOUR OF THE RESEARCHER OF THE FUTURE 12 (Jan. 11, 2008), available at http://www.jisc.ac.uk/media/documents/programmes/reppres/gg_final_keynote_11012008.pdf.

more extensive and specific training than their big-firm counterparts.”¹⁴ And, an increasing number of students are striking out on their own immediately after graduation. Data from the National Association of Legal Career Professionals (NALP) shows that, in 2007, 34.1% of graduates entering private practice went to solo practice or small firms (ten or fewer attorneys).¹⁵ Five years later, in 2012, the number had jumped to 48.1%.¹⁶ The percentages are probably higher at most regional law schools.¹⁷ A growing percentage of law school graduates will make technology decisions on their own.¹⁸

Even in larger organizations, technology can be uncertain and anxiety-laden territory, such that hiring a tech-savvy lawyer may be a relief.¹⁹ These firms are increasingly unwilling to provide training to incoming associates and demand attorneys who can hit the ground running.²⁰ With

¹⁴ Gene Koo, *New Skills, New Learning: Legal Education and the Promise of Technology* 13 (Berkman Ctr. for Internet & Soc’y, Research Publication No. 4, 2007), available at <http://ssrn.com/abstract=976646>.

¹⁵ See NAT’L ASS’N OF LAW PLACEMENT, CLASS OF 2007 NATIONAL SUMMARY REPORT 2 (2008), available at http://www.nalp.org/uploads/1229_natlsummary07revised.pdf.

¹⁶ See NAT’L ASS’N OF LAW PLACEMENT, CLASS OF 2012 NATIONAL SUMMARY REPORT 2 (2013), available at <http://www.nalp.org/uploads/NationalSummaryChart2012.pdf>.

¹⁷ For example, at William Mitchell College of Law, 59.8% of 2012 graduates in private practice went to work in small firm or solo environments. NAT’L ASS’N OF LAW PLACEMENT, WILLIAM MITCHELL COLLEGE OF LAW CLASS OF 2012 SUMMARY REPORT 3 (2013), available at <http://web.wmitchell.edu/careers/wp-content/uploads/2013/02/Class-of-2012-Summary-Report.pdf>.

¹⁸ See Richard S. Granat & Stephanie Kimbro, *The Teaching of Law Practice Management and Technology in Law Schools: A New Paradigm*, 88 CHI.-KENT L. REV. 757, 769 (2013) (“Because most students are passing the bar and heading straight into solo practice or small firms, they will not be able to rely on a law firm IT consultant or managing partner to make decisions for them regarding the use of technology.”).

¹⁹ See Conrad Johnson & Brian Donnelly, *If Only We Knew What We Know*, 88 CHI.-KENT L. REV. 729, 730 (“The mere fact that lawyers have computers on their desks and near constant access to the Internet does not mean that lawyers understand how to consistently use these tools in thoughtful, innovative, or professionally sustaining ways.”).

²⁰ See William D. Henderson, *Three Generations of U.S. Lawyers: Generalists, Specialists, Project Managers*, 70 MD. L. REV. 373, 387–88 (2011) (observing that U.S. corporations often refuse to pay for work that newer associates perform and, consequently, firms have a disincentive to hire recent law school graduates). “But in the long run, an organization—or, worst yet, an industry—cannot credibly compete on the basis of quality when it underinvests in its most important asset—legal talent.” *Id.* at 388; see also David
(continued)

technology proficiency now recognized as a competency for lawyers,²¹ and little employer-based training, new graduates with technology expertise will be in high demand.

There is some evidence that technology skills can help students find jobs.²² Professor Daniel Katz thinks “[d]iscovery is where it clearly makes sense. When I talk to lead discovery law firm partners, they say that they need people with these skills and would rather take a person like that than someone currently in their organizations.”²³ Lawyers with significant tech skills will be in great demand, and not just by traditional law firms. Technology companies that service the legal industry are hiring as well. Just last year, Professor Oliver Goodenough of Vermont Law School took a small group of Vermont Law School students to the LegalTech conference in New York.²⁴ Their participation and networking efforts resulted in several interviews and one job offer, just three weeks after the meeting’s conclusion.²⁵ “[I]t is astonishing how few law schools are clued

Segal, *What They Don’t Teach Law Students: Lawyering*, N.Y. TIMES, Nov. 20, 2011, at A1 (finding that clients increasingly refuse to pay for associates to learn on the job).

²¹ In August 2012, the ABA amended a comment to Rule 1.1 (Competence) to include technology. MODEL RULES OF PROF’L CONDUCT R. 1.1 cmt. 8 (1983). It now reads: “To maintain the requisite knowledge and skill, a lawyer should keep abreast of changes in the law and its practice, including the benefits and risks associated with relevant technology” *Id.* Massachusetts has already moved to adopt the revised language. Robert Ambrogi, *Mass. Moves to Require Technology Competence for Lawyers*, ROBERT AMBROGI’S LAWSITES (Jul. 15, 2013), <http://www.lawsitesblog.com/2013/07/mass-moves-to-adopt-duty-of-technology-competence-for-lawyers.html>.

²² See, e.g., Oliver R. Goodenough, *Developing an E-Curriculum: Reflections on the Future of Legal Education and on the Importance of Digital Expertise*, 88 CHI.-KENT L. REV. 845, 846–47 (2013). Professor Goodenough writes of technology services firms: “It is a large, growing industry, and many of the companies are hiring. A J.D. with a demonstrated educational background on topics like e-discovery or document assembly becomes an interesting candidate for such employment.” *Id.* at 874.

²³ Rachel M. Zahorsky, *Tech Skills Are the Key to Law Students’ Future Employment, Says ‘13 Legal Rebel Dan Katz*, LEGAL REBELS (Aug. 28, 2013), http://www.abajournal.com/legalrebels/article/2013_legal_rebel_profile_daniel_katz/.

²⁴ Goodenough, *supra* note 22, at 846–47.

²⁵ *Id.*; see also Zahorsky, *supra* note 23 (“Legal process outsourcers and software companies . . . need people with particular sets of skills who have domain expertise and can build software that works to solve legal problems. . . . They need lawyers who know the law, understand software and technology, and [know] how to mesh the two.” (internal quotation marks omitted)).

into this field yet, and how relatively open it is at this point for the institutions and students willing to make the push into it.”²⁶

III. TECHNOLOGY AND THE PRACTICE OF LAW

I recently attended the ABA TechShow,²⁷ a conference devoted to technology in the practice of law. Hundreds of lawyers were there, many of them were technology enthusiasts hard-wired to love the subject, but plenty of others simply hoped to catch up on technology. There was plenty of talk about specific technologies, including cloud services, the pros and cons of Android and iOS, and time and billing software. However, there was something more structural at play that LegalZoom exemplifies. LegalZoom is a company that allows individuals to customize legal documents, such as wills, articles of incorporation, and trademark applications, without talking to a lawyer.²⁸ LegalZoom’s popularity is exploding, in part because of its low cost and convenience.²⁹ Readers who use TurboTax (or the like) to file their tax returns may recognize the impulse.

²⁶ Goodenough, *supra* note 22, at 875. Those interested in this topic should watch Professor William Henderson’s illuminating presentation at CALI’s 2013 annual meeting. Professor Henderson has tracked the legal technology industry, and he cites numerous examples of potential job opportunities for people with J.D.s. “Full time professional jobs . . . in the legal industry. They just don’t look anything like what an artisan lawyer does.” William D. Henderson, Keynote Address at the CALI 2013 Annual Meeting (June 14, 2013), *available at* <http://www.youtube.com/watch?v=cKwTEyrnQY&feature=youtu.be>.

²⁷ ABA TECHSHOW, <http://www.techshow.com/> (last visited Aug. 12, 2014).

²⁸ See Daniel Fisher, *Silicon Valley Sees Gold in Internet Legal Services*, FORBES (Oct. 5, 2011, 12:02 PM), <http://www.forbes.com/sites/danielfisher/2011/10/05/silicon-valley-sees-gold-in-internet-legal-services/>.

²⁹ *Id.*

Just as Craigslist decimated the newspaper industry by taking away its low-end but profitable classified-ad business, LegalZoom targets the high-volume, low-cost business of providing basic consumer and business documents. The company charges \$69 for wills and as little as \$99 for articles of incorporation, versus the thousands that a lawyer might charge for the same product. And unlike, say, a harried solo practitioner, LegalZoom has enough volume to hire experts who constantly update documents to comply with changing state and federal laws.

Id.

Many lawyers are furious. A commenter to an article on the ABA Journal's site said it well:

[LegalZoom] is too much of a joke to even have the phrase "practice of law" associated with it, even if preceded by "unauthorized." I [ha]ve had clients come in who wanted me to "fix" their [LegalZoom] documents for their uncontested divorce. We ended up starting over. Anyone who pays for a service like [LegalZoom] deserves to get screwed.³⁰

At the conference, we heard that LegalZoom has no accountability, that "you get what you pay for," and that customers never receive critical advice like attorneys provide. Underlying the frustration is fear that the work of lawyers is being lost forever. But, are LegalZoom's services really "the work of lawyers," or is it merely work that lawyers have traditionally done?

In *The End of Lawyers?*, Richard Susskind observes an evolution in legal services.³¹ His transition progresses from a traditional and tailored law practice to transactional and commoditized service.³² Most firms operate, with diminishing validation from the marketplace, closer to the traditional end of the spectrum.³³ They bill by the hour and offer clients a high level of personalized service. However, disruptive technology has brought automation and, with it, services that are systematized or

³⁰ James, Comment to *Suit Claims LegalZoom's Document Prep Is Unauthorized Practice*, A.B.A. J.: LAW NEWS NOW (Feb 19, 2010, 7:46 AM), http://www.abajournal.com/news/article/suit_claims_legalzooms_document_prep_is_unauthorized_practice.

³¹ RICHARD SUSSKIND, *THE END OF LAWYERS?: RETHINKING THE NATURE OF LEGAL SERVICES* 31 (2008); see also Granat & Kimbro, *supra* note 18, at 760 ("The legal profession is about to enter a period [in which] the market for legal services will be more open, negatively impacting solo practitioners and small law firms, employment prospects for law students, and the viability of Tier III and Tier IV law schools that feed their graduates into small law firm practice.")

³² Specifically, Susskind speaks of a progression from bespoke (made-to-order; e.g., courtroom advocacy), to standardized (reuse of work already completed; e.g., revising a document), to systematized (automate routine functions; e.g., an internal document produced from answering a few questions), to packaged (create the finished product for clients; e.g., completing a web-based questionnaire that results in finished legal document), to commoditized (legal service made ordinary, and available from many sources at competitive prices). See SUSSKIND, *supra* note 31, at 28–33.

³³ See *id.* at 34–35.

packaged.³⁴ Unlike many lawyers who view the process with a certain degree of fear and loathing, clients—both individual and corporate³⁵—increasingly prefer the efficiencies (and lower costs) associated with commoditization.³⁶ Firms that fail to meet clients' wishes in this regard will lose business to innovative competitors.

To the extent that any aspect of traditional law practice is not strictly defined as “the practice of law,” and thus limited to attorneys, technology-

³⁴ See RICHARD SUSSKIND, *TOMORROW'S LAWYERS: AN INTRODUCTION TO YOUR FUTURE* 40 (2013) (identifying as disruptive technologies: automated document assembly, relentless connectivity, electronic legal marketplace, e-learning, online legal guidance, legal open-sourcing, closed legal communities, workflow and project management, embedded legal knowledge, online dispute resolution, intelligent legal search, big data, and artificial intelligence-based problem solving).

³⁵ See SUSSKIND, *supra* note 31, at 175 (reporting that general counsel are increasingly pressured by boards to reduce the amount spent on external law firms). “[M]any in-house departments are not regarded from above as sufficiently tough on fees when dealing with large, experienced firms.” *Id.* The Association of Corporate Counsel (ACC) confirms the point in its “value challenge,” an effort to promote ways in which corporations can reduce fees spent on legal work. *ACC Value Challenge*, ASS'N OF CORP. COUNSEL, <http://www.acc.com/valuechallenge/> (last visited Aug. 12, 2014). In March 2012, an ACC case study concluded:

[M]uch work included in law firms' service does not constitute true legal work (i.e., the analysis and counseling that represent the “highest and best use” of a lawyer's expertise and experience). Instead, much of what law firms do constitutes legal process work and much of that can be done and delivered without the involvement of lawyers (at all, or at least to the extent that they are now).

ASS'N OF CORP. COUNSEL, *ACC VALUE CHALLENGE PRACTICES FOR THE SMALL LAW DEPARTMENT* 56 (2012) (emphasis omitted), available at <http://www.acc.com/legal/resources/resource.cfm?show=1304804>; see also Dina Wang & Firoz Dattu, *Why Law Firm Pedigree May Be a Thing of the Past*, HBR BLOG NETWORK (Oct. 11, 2013), <http://blogs.hbr.org/2013/10/why-law-firm-pedigree-may-be-a-thing-of-the-past/> (“G[eneral counsel] are increasingly willing to move high-stakes work away from the most pedigreed law firms . . . if the value equation is right.”).

³⁶ See SUSSKIND, *supra* note 31, at 35 (citing the certainty of fixed costs and the promise of higher quality, speed, and consistency); see also SUSSKIND, *supra* note 34, at 23 (“When many lawyers speak of commoditization, they are prone to do so in bleak and dismissive terms—commoditized legal work, it is intoned with deep regret, is work from which we can no longer make money.”).

based legal service vendors will emerge to compete.³⁷ This “unbundling” of legal practice, in which clients’ needs are split into component parts,³⁸ is an obvious threat to the legal establishment.

The challenge for lawyers is in accepting that changes are taking place, and will continue.³⁹ Many resist or deny the pull of technology.⁴⁰ Blogger and attorney Jay Fleischman bluntly described the situation:

The ABA Elawyering Task Force tells us that, “[t]o be successful in the coming era, lawyers will need to know how to practice over the Web, manage client relationships in cyberspace, and ethically offer ‘unbundled’ services.”

Bullshit.

. . . .

Email does[no]t substitute for a phone call. A phone call is[no]t the replacement for a handshake. Those who offer the virtual law firm are selling something most people do[no]t want. People want to be able to make a

³⁷ See William D. Henderson, *A Blueprint for Change*, 40 PEPP. L. REV. 461, 489–90 (2013) (“[E]verything up until the courthouse door, or the moment when legal advice is communicated from the counselor to the client, is an entry point for a legal service vendor . . .”).

³⁸ For an fuller discussion of unbundled services, and the implication of technology, see generally Stephanie Kimbro, *Using Technology to Unbundle in the Legal Services Community*, HARV. J.L. & TECH. (OCCASIONAL PAPER SERIES) (Feb. 2013), <http://jolt.law.harvard.edu/symposium/articles/Kimbrow-UsingTechnologytoUnbundleLegalServices.pdf>. Ms. Kimbro describes technology already available to deliver unbundled services, including document assembly, artificial intelligence, case management, and video conferencing. *Id.* at 18–24.

³⁹ See Patrick J. Lamb, *Lawyers Have Incredible Lack of Interest in Changing Legal Marketplace*, LEGAL REBELS (Nov. 9, 2010, 8:17 AM), http://abajournal.com/legalrebels/article/incredible_lack_of_interest_in_the_changing_legal_marketplace (“[L]awyers are suffering from an incredible lack of interest in understanding the forces that are changing the foundation of the profession, both for in-house lawyers and, as a result, outside lawyers as well.”).

⁴⁰ See SUSSKIND, *supra* note 31, at 34 (“Because commoditization is anathema to many lawyers, any movement in its direction is frequently regarded as generically offensive.”). Interestingly, law students may also resist changes in legal practice. See William Henderson, *Why Are We Afraid of the Future of Law?*, NAT’L JURIST, Sept. 2012, at 8, 8–9 (“[L]aw students are the least emotionally braced for a different future—one a lot more challenging and uncertain than they imagined.”).

personal connection with other people, to build trust in a lawyer's expertise. They do[no]t want to be met with a password-encrypted firewall and triple-redundant backup systems.⁴¹

One response is that embracing technology should not mean losing personal connection with clients.⁴² However, even accepting the premise that many prefer in-person interaction, traditionalists should acknowledge that attitudes are changing.⁴³ And, as technology improves, the objections to automation will weaken.

The real question is timing: How long will lawyers be able to maintain ring-fenced protection of the legal services market from outside intervention? The longer we can hold out, the longer this process will take But the end result will be the same. The "non-lawyer" genie is out of the bottle and it is not going back in.⁴⁴

The implications may be most immediate for solo and small firm attorneys,⁴⁵ but the challenge for all lawyers is to incorporate the

⁴¹ Jay Fleischman, *Is the Virtual Law Firm Model Coming up Short?*, LEGAL PRAC. PRO (Sept. 22, 2011), <http://www.legalpracticepro.com/virtual-law-firm-evolution/>.

⁴² See Stephanie Kimbro, *Ethics Question for the Virtual Attorney*, VIRTUAL LAW PRAC. (May 2, 2008), <http://virtuallawpractice.org/2008/05/ethics-question-for-the-virtual-attorney/> (noting that virtual practice does not mean impersonal service).

⁴³ See Richard Granat, *Rejoinder: "Is the Virtual Law Model Coming up Short?"*, ELAWYERING BLOG (Sept. 24, 2011), <http://www.elawyeringredux.com/2011/09/articles/virtual-law-practice/rejoinder-is-the-virtual-law-model-coming-up-short/>.

[M]any clients are not interested in working with their lawyers online, but we think that as a connected generation comes of age and they have legal problems that they will prefer to deal with their lawyers online and prefer to text rather than even talk on the telephone, much less meet with their attorney face-to-face, unless it is unavoidable.

Id. Granat cites a YouGov study on preferences for legal services in which "34% of respondents said they would be more likely to choose a law firm that offered the convenience of online access to legal documents over one that had no online capability; 22% disagreed and 37% neither agreed nor disagreed." *Id.*

⁴⁴ Jordan Furlong, *The Evolution of the Legal Services Market: Stage 3*, LAW21 (Nov. 7, 2012), <http://www.law21.ca/2012/11/the-evolution-of-the-legal-services-market-stage-3/>.

⁴⁵ See Jon M. Garon, *Legal Education in Disruption: The Headwinds and Tailwinds of Technology 6* (Apr. 15, 2012) (unpublished working paper), available at <http://ssrn.com/> (continued)

technology that clients want while adding value in the form of great advice and counsel. “The new breed of lawyers will be . . . technologically savvy, treating the technology as a tailwind rather than a headwind”⁴⁶

IV. TECHNOLOGY IN LEGAL EDUCATION

Technology may be transforming legal practice, but that transformation has hardly changed the way law professors teach. Many are change-averse⁴⁷ and use the methods that their own professors employed a generation before.⁴⁸ Doctrinal courses often feature lectures, Socratic dialogue, and final exams.⁴⁹ In many classes, technology (to the extent it is used at all) appears in the form of PowerPoint presentations and syllabi posted to TWEN or some other course management system.

This represents a clear mismatch between teaching styles and students’ undergraduate experience. Most first-year law students have already experienced online, blended, and flipped classes.⁵⁰ They have engaged in

abstract=2040560 (predicting that disruptive technology will reduce the number of solo and small firm lawyers).

Whether the solo practitioners are in urban, suburban or rural areas, many of their challenges remain the same. Technology—particularly in the form of ubiquitous content from self-help software—has devalued the importance of the information they provide, put tremendous pressure on the fees they can charge for such information, and undermined locale as a distinguishing factor in one’s practice.

Id. at 8.

⁴⁶ *Id.* at 23.

⁴⁷ See Henderson, *supra* note 37, at 463 (“Many law professors [will] have a visceral, negative response toward curricular changes that will eat up our discretionary time and push us away from an established reward structure and toward new and unfamiliar subjects and teaching methods.”); see also TASK FORCE ON THE FUTURE OF LEGAL EDUC., AM. BAR ASS’N, DRAFT REPORT AND RECOMMENDATIONS 15 (Sept. 20, 2013), available at http://americanbar.org/content/dam/aba/administrative/professional_responsibility/taskforce_comments/task_force_on_legaleducation_draft_report_september2013.pdf (Many legal academics “sought out their positions because those posts reside largely outside market- and change-driven environments.”).

⁴⁸ See, e.g., ROY STUCKEY ET AL., BEST PRACTICES FOR LEGAL EDUCATION 133 (2007) (“Typical classroom instruction at most law schools today would be familiar to any lawyer who attended law school during the past [130] years.”).

⁴⁹ See *id.*

⁵⁰ Seventy-nine percent of undergraduates have taken at least one blended course. See EDUCAUSE CTR. FOR ANALYSIS & RESEARCH, ECAR STUDY OF UNDERGRADUATE (continued)

moderated discussion forums and other online group work. They own laptops, tablets, and smartphones.⁵¹ When they arrive in law school, they may be surprised to have their laptops banned from class.

The laptop debate demonstrates that, for many professors, technology's potential for distraction balances or outweighs its benefits. To be sure, that distraction is real, and results in considerable frustration for law teachers.⁵² Many students with laptops use them occasionally for purposes unrelated to class, and the students' actions can be distracting to others nearby. Consequently, some teachers ban laptops in class on the theory that removing the temptation of technology will lead to more engagement.⁵³ Others say the problem is not the laptops, but rather the teaching method. Classes that are engaging and interactive will lead students to pay attention; boring ones will drive them to distraction. Even without laptops, students can doodle and pass notes.⁵⁴

To be fair, some professors are moving in the other direction. Authors have proposed technology-infused teaching for topics (some of which will be explored later in this Article), and occasional conferences have cropped up with similar aims.⁵⁵ Some report better outcomes for students in

STUDENTS AND INFORMATION TECHNOLOGY, 2013, at 15 (2013), <https://net.educause.edu/ir/library/pdf/ERS1302/ERS1302.pdf>. More than 40% have taken a fully online course in the past year. *See id.* at 16–17.

⁵¹ Eighty-nine percent of undergraduates own laptops, while 76% own smartphones. *See id.* at 25.

⁵² *See, e.g.,* Jeff Sovern, *Law Student Laptop Use During Class for Non-Class Purposes: Temptation v. Incentives*, 51 U. LOUISVILLE L. REV. 483, 491–92 (finding that, in upper-year courses, 58% of laptop-using students were distracted for more than half the class session).

⁵³ *See, e.g.,* Neil, *supra* note 5.

⁵⁴ The truth probably does not fall neatly into either category. Some professors report significant improvements after banning laptops. *See* Paras D. Bhayani, *HLS Debates Laptops in Class*, HARV. CRIMSON (Apr. 11, 2006), <http://www.thecrimson.com/article/2006/4/11/hls-debates-laptops-in-class-as/>; *see also* Sherry F. Colb, *Taking Notes Without a Computer: How Laptops Distract from Classroom Learning*, FINDLAW (Sep. 6, 2006), <http://writ.news.findlaw.com/colb/20060906.html>. However, they may miss the alternative—that technology can quickly facilitate deeper understanding of issues raised in class. For background and review of the literature on banning laptops, *see* Sovern, *supra* note 52, at 508–16.

⁵⁵ *See, e.g.,* *Technology in and Beyond the Classroom*, INST. FOR L. TEACHING & LEARNING, <http://lawteaching.org/conferences/2012technology/> (last visited Aug. 12, 2014). The flagship periodical of the Institute for Law, Teaching, and Learning, *The Law Teacher*, is a great resource for descriptions of teaching innovations. Its archive is available at *The*
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technology-infused classes.⁵⁶ But, their rationale is rarely to model the best uses of technology in legal practice.⁵⁷ More often, it is to encourage technology that facilitates certain course objectives, which, while laudable, does not recognize the technology skill of students as its own equally worthwhile goal.

To understand why technology adoption in legal education lags behind higher education and law practice, we must consider attitudes of law professors. From numerous conversations with reluctant faculty members, several themes emerge. The first is a feeling that technology has too long been pushed without clearly articulated benefits, for its own sake, or just “because it is cool.”⁵⁸ They sense that investment in classroom technology (smartboards, lecture capture systems, and the like) has brought pressure to unveil a “glitzier” style of teaching that is not pedagogically warranted and does not improve the level of instruction.⁵⁹

Law Teacher, INST. FOR L. TEACHING & LEARNING, <http://lawteaching.org/lawteacher/index.php> (last visited Aug. 12, 2014).

⁵⁶ See, e.g., Amy Musgrove & Vicky Thirlaway, *Are We Using Technology for Technology's Sake? An Evaluation of a Simulated Employment Exercise at Undergraduate Level*, 46 *LAW TEACHER* 65, 68 (2012) (“[The use of technology in facilitating group work] has a role to play in averting a generalised downturn in achievement.”).

⁵⁷ A notable exception is law clinics, many of which use sophisticated case management software. See JULIA GORDON, CTR. FOR LAW & SOC. POLICY, EQUAL JUSTICE AND THE DIGITAL REVOLUTION: USING TECHNOLOGY TO MEET THE LEGAL NEEDS OF LOW-INCOME PEOPLE 2 (2002); see, e.g., *Milton A. Kramer Law Clinic Center*, CASE W. RES. U. SCH. L., <http://law.case.edu/clinic/content.asp?id=258> (last visited Aug. 12, 2014). This has the dual advantage of providing more robust access to work product, while also developing students' facility with tools they can use to maintain their own law practices upon graduation. See Ronald W. Staudt & Andrew P. Medeiros, *Access to Justice and Technology Clinics: A 4% Solution*, 88 *CHI.-KENT L. REV.* 695, 715 (2013) (“[T]he [p]racticum [program] teaches technical skills and provides a framework for applying technology to law practice . . .”).

⁵⁸ See Craig T. Smith, *Technology and Legal Education: Negotiating the Shoals of Technocentrism, Technophobia, and Indifference*, 1 *J. ASS'N LEGAL WRITING DIRECTORS* 247, 248–49 (2002) (“Such [unreflective] uses of [technology by ‘technocentric’ professors] may leave us pandering ‘edutainment’ rather than fostering education—that is, reaching students’ eyes and ears but missing their hearts and minds.”); see also Musgrove & Thirlaway, *supra* note 56, at 65–66 (“[The authors] felt very strongly that changes to [a proposed simulation] should only be made if they would assist the students in achieving these aims, rather than simply to satisfy the [assessment, learning, and teaching] strategy: we were reluctant to use ‘technology for technology’s sake.’”).

⁵⁹ See Smith, *supra* note 58, at 253 (citing pressure from law students, deans, and other professors to use technology in teaching). Readers who feel oppressed by technology
(continued)

Second is a related concern, that technology is unreliable. One professor told me, with a smile on his face, but a serious tone, “I have been burned by you technology people before.”⁶⁰ Most law professors love to teach—they enjoy communicating and connecting with students, and they feel both expert and under control in front of a class. For some, technology introduces an unwelcome element of uncertainty and stress into their comfort zone.⁶¹ Nobody likes to have technology fail while in front of an audience.

Third, many professors are biased against distance education,⁶² which is at the forefront of technology-related controversy in higher education.⁶³

evangelists should read Professor Michael Bennett’s recent essay, *A Critical Embracing of the Digital Lawyer*. See Michael Bennett, *A Critical Embracing of the Digital Lawyer*, in EDUCATING THE DIGITAL LAWYER 12-1 (Oliver Goodenough & Marc Lauritsen eds., 2012), available at http://www.law.harvard.edu/programs/plp/pdf/013-03358_03358-ch0012.pdf. “Perhaps[,] out of an arguably appropriate taste for efficiency, instead of describing the technology critic as an anti-American, immoral blockhead, the social forces toting the banner of technophilia resort to labeling our technology critic with a connotatively rich yet concise term: Luddite.” *Id.* at 12-2 to -3.

⁶⁰ See, e.g., Phillip Bohl & Julie Tausend, *Engaging Faculty in the Use of Technology Without Using the “T” Word*, CALI CONF. FOR L. SCH. COMPUTING (June 13, 2013), <http://conference.cali.org/2013/sessions/engaging-faculty-use-technology-without-using-t-word> (suggesting ways to overcome faculty resistance to technology initiatives, including the use of words like *update* instead of *change*, *available* instead of *new*, and *tools* instead of *technology*).

⁶¹ See MACCRATE REPORT, *supra* note 1, at 241 (“There also may be a lack of interest on the part of some faculty in either learning new teaching methods or in the nature of the skills material itself.”). In addition, one commentator reported on a conversation with Professor Oliver Goodenough of Vermont Law School, who stated: “[F]aculty inexperience with technology is a reason why law schools have been slow to adapt their curriculum to the digital age” Michael Fitzgerald, *14 Reasons Law Schools Must Teach Tech*, INFORMATIONWEEK (July 10, 2013, 7:09 PM), <http://www.informationweek.com/education/instructional-it/14-reasons-law-schools-must-teach-tech/240157995>.

⁶² See, e.g., I. ELAINE ALLEN & JEFF SEAMAN, BABSON SURVEY RESEARCH GRP., CHANGING COURSE: TEN YEARS OF TRACKING ONLINE EDUCATION IN THE UNITED STATES 6 (2013), available at <http://www.onlinelearningsurvey.com/reports/changingcourse.pdf> (“Only 30.2[%] of chief academic officers believe their faculty accept the value and legitimacy of online education.”).

⁶³ There exists a tremendous disconnect between administrators in higher education, who increasingly see online learning as a key strategic goal, and faculty members who remain skeptical. See *id.* at 16 (reporting that 69.1% of chief academic officers agree with the statement that “[o]nline education is critical to the long-term strategy of my institution”—an increase of 20% since 2002).

A recent survey of 2,251 undergraduate professors asked whether “[o]nline courses can achieve student learning outcomes that are at least equivalent to those of in-person courses” in the classes they teach.⁶⁴ Overall, 62% either disagreed or strongly disagreed, though among teachers who had actually taught an online course, the level of disagreement dropped to 29%.⁶⁵ No surprise that law professors, the overwhelming majority of whom have never taught online, believe online learning is inferior.⁶⁶ In fact, a 2010 meta-analysis of fifty online learning studies (forty-three of which focused on postsecondary education) found: “[C]lasses with online learning (whether taught completely online or blended) on average produce stronger student learning outcomes than do classes with solely face-to-face instruction.”⁶⁷

Law professors’ misperceptions are emboldened by ABA standards, which say little about technology in general, but which address distance learning specifically. In particular, Standard 306 limits the number of credits a law student can obtain via online classes⁶⁸ (defined as any course in which more than one-third of its content is online).⁶⁹ Further, students may not take more than twelve distance credits,⁷⁰ nor may they enroll in distance courses until they have completed twenty-eight credit hours (roughly equivalent to a first-year, full-time course load).⁷¹ These limits validate the bias against technology by suggesting that too much is

⁶⁴ See INSIDE HIGHER ED, THE 2013 INSIDE HIGHER ED SURVEY OF FACULTY ATTITUDES ON TECHNOLOGY 10 tbl.2 (Scott Jaschik & Doug Lederman eds., 2013).

⁶⁵ See *id.*

⁶⁶ Unsurprisingly, few law schools are using distance learning extensively in their J.D. curricula, though interested parties have convened to share which experiences develop best practices. See WORKING GRP. FOR DISTANCE LEARNING IN LEGAL EDUC., DISTANCE LEARNING IN LEGAL EDUCATION: A SUMMARY OF DELIVERY MODELS, REGULATORY ISSUES, AND RECOMMENDED PRACTICES 3 (2012), available at http://www.law.harvard.edu/programs/plp/pdf/Distance_Learning_in_Legal_Ed.pdf.

⁶⁷ U.S. DEP’T OF EDUC., EVALUATION OF EVIDENCE-BASED PRACTICES IN ONLINE LEARNING: A META-ANALYSIS AND REVIEW OF ONLINE LEARNING STUDIES 18 (2010), available at <http://www2.ed.gov/rschstat/eval/tech/evidence-based-practices/finalreport.pdf>. The meta-analysis also found that “[i]nstruction combining online and face-to-face elements had a larger advantage relative to purely face-to-face instruction than did purely online instruction.” *Id.* at xv.

⁶⁸ AM. BAR ASS’N, ABA STANDARDS AND RULES OF PROCEDURE FOR APPROVAL OF LAW SCHOOLS Standard 306 (2013).

⁶⁹ See *id.* Interpretation 306-3.

⁷⁰ See *id.* Standard 306(d).

⁷¹ See *id.* Standard 306(e).

inconsistent with a high-quality program of legal education. Not surprisingly, a minority of law schools offer any distance education courses.⁷²

Faculty biases contribute to a belief that technology ought never to be an end in itself. “[E]ach technological application needs to have a specific purpose, must meet a specific educational need or learning objective, and should be suited for that objective.”⁷³ Among technologists, it is understood that proposals for technology use in legal education must be convincing, well supported, and above all, necessary to accomplish important class-related objectives.

The “flipped classroom,” wherein professors record lectures for students to watch on their own, and reclaim classroom time for interactive learning (e.g., simulations, group work), is a good example of technology for specific educational goals.⁷⁴ Limited evidence suggests that flipped methods, popularized by Salman Khan and the Khan Academy,⁷⁵ can significantly increase student performance.⁷⁶ Law professors are taking

⁷² See SECTION OF LEGAL EDUC. & ADMISSIONS TO THE BAR, AM. BAR ASS’N, A SURVEY OF LAW SCHOOL CURRICULA: 2002–2010, at 95–96 figs.85, 87 (Catherine L. Carpenter ed., 2012) [hereinafter SURVEY OF LAW SCHOOL CURRICULA] (reporting thirty-seven schools with synchronous distance education courses and forty with asynchronous distance education courses).

⁷³ Kristin B. Gerdy et al., *Expanding Our Classroom Walls: Enhancing Teaching and Learning Through Technology*, 11 J. LEGAL WRITING INST. 263, 273 (2005); see also Musgrove & Thirlaway, *supra* note 56, at 69 (reporting ambivalence among some teachers about participating in a technology-based simulation). “In some instances, the presence of a critical voice was helpful during the planning process, as we were forced to articulate clearly the pedagogical justification for the use of technology . . .” *Id.*

⁷⁴ See, e.g., EDUCAUSE LEARNING INITIATIVE, 7 THINGS YOU SHOULD KNOW ABOUT FLIPPED CLASSROOMS (2012), <http://net.educause.edu/ir/library/pdf/eli7081.pdf>.

⁷⁵ See Salman Khan, *Let’s Use Video to Reinvent Education*, TED (Mar. 2011), http://www.ted.com/talks/salman_khan_let_s_use_video_to_reinvent_education.html; Jeffrey R. Young, *College 2.0: A Self-Appointed Teacher Runs a One-Man ‘Academy’ on YouTube*, CHRON. HIGHER EDUC. (June 6, 2010), <http://chronicle.com/article/A-Self-Appointed-Teacher-Runs/65793/>.

⁷⁶ A new study has found that pharmacy students’ performance increased by 5.1% when using “flipped” methods. See Robinson Meyer, *The Post-Lecture Classroom: How Will Students Fare?*, ATLANTIC (Sept. 13, 2013), <http://www.theatlantic.com/technology/archive/2013/09/the-post-lecture-classroom-how-will-students-fare/279663/>. Students in Vice Dean Russell Mumper’s foundational pharmaceuticals course preferred the flipped model. “While [75%] of students in 2012 said, before Mumper’s class, that they preferred lectures, almost 90[%] of students said they preferred the flipped model *after* the class.” *Id.*

notice, with both experimental classes⁷⁷ and larger-scale initiatives⁷⁸ emerging.

But, consistent with the resistance to technology as an end, only a small number of schools offer elective courses on technology in the practice of law.⁷⁹ “While courses dealing with Internet jurisdiction issues, privacy in the digital age, cybercrime, and related topics are hot tickets in

⁷⁷ Aaron Dewald helped to implement a flipped classroom model for first-year contracts courses at the University of Utah. See Aaron Dewald, *Blending the First-Year Legal Classroom*, LAW SCH. ED TECH (Dec. 18, 2012), <http://lawschooledtech.classcaster.net/2012/12/18/blending-the-first-year-classroom/>. Two professors met with Mr. Dewald in his capacity as instructional designer, and together they created forty short videos covering the Restatements. *Id.* Students watched the videos on their own, saving class time for deeper discussion. *Id.* A survey revealed that 97% of students believed the video modules made the Restatements easy to understand, and 70% reported using the videos as review after class. *Id.* Northwestern University Law School also began experimenting recently with flipped teaching in a contracts/sales class. See Emerson Tiller, *The Flipped Classroom*, WORD ON THE STREETVILLE (Sept. 6, 2013), <http://deansblog.law.northwestern.edu/2013/09/06/the-flipped-classroom/>.

Prior to class, students watched narrated PowerPoint lectures, worked in online discussion groups to solve hypothetical problems, and worked through problems from the assigned textbook. While in class, students worked in teams on professor-assigned problems, presented group projects to the class, and interacted with the professor on a class-wide problem. The professor gave short, focused lectures on the more challenging topics for reinforcement. The professor who taught the flipped class noted that students came to class better prepared and the quality of responses to questions was notably high. Moreover, the quality of the exam answers was higher than in the traditional course counterpart.

Id.

⁷⁸ LegalED, a web-based collection of teaching materials debuted in September 2013, with the goal of inspiring “teaching innovations, flipped learning, competencies-based training[,] and more.” LEGALED, <http://www.legaledweb.com/> (last visited Aug. 12, 2014); see also Kelly Sheridan, *Law School Tool Promotes Blended Learning*, INFORMATIONWEEK (Aug. 5, 2013, 2:11 PM), <http://www.informationweek.com/education/instructional-it/law-school-tool-promotes-blended-learnin/240159446>.

⁷⁹ See SURVEY OF LAW SCHOOL CURRICULA, *supra* note 72, at 70 fig.57 (finding seven law schools with courses in law and technology, and noting the comparison to 2002 when no law school had such a course); see also Roger V. Skalbeck, *Tech Innovation in the Academy*, AALL/ILTA DIGITAL WHITE PAPER: LIBRARIAN, Oct. 2012, at 74, 76–78, available at <http://read.uberflip.com/i/87421/72>.

law schools, courses on the technologies lawyers use seem to be a rather tougher sell to curriculum committees.⁸⁰ Exceptions include *Technology, Innovation, and Law Practice* (Georgetown);⁸¹ *Legal Technology and Informatics* (Stanford);⁸² *Lawyering in an Age of Smart Machines* (Suffolk);⁸³ and *Introduction to Technology in the Law Office* (Duke).⁸⁴ Some schools, like Michigan State (ReInvent Law),⁸⁵ Suffolk (Institute on Law Practice Technology & Innovation),⁸⁶ and Chicago-Kent (Center for Access to Justice & Technology),⁸⁷ have launched centers or other larger-scale initiatives. Specialized courses offer high-quality training for interested students, but they reach a relatively small percentage of the

⁸⁰ Brock Rutter, *Survey of Existing Courses in Lawyer Use of Technology*, in EDUCATING THE DIGITAL LAWYER, *supra* note 59, at 6-1, 6-1, available at http://www.law.harvard.edu/programs/plp/pdf/007-03358_03358-ch0006.pdf.

⁸¹ *Curriculum Guide: Courses*, GEO. L., http://apps.law.georgetown.edu/curriculum/tab_courses.cfm?Status=Course&Detail=2090 (last visited Aug. 12, 2014).

⁸² *Course Schedule & Description*, STAN. L. SCH., <http://lawreg.stanford.edu/stanford/prereg/CourseDetails.asp?cClschedid=+26184> (last visited Aug. 12, 2014).

⁸³ *Course Descriptions*, SUFFOLK U.L. SCH., <http://www.suffolk.edu/law/academics/degrees/jd/23600.php?CourseID=571> (last visited Aug. 12, 2014).

⁸⁴ *Duke Law Curriculum*, DUKE U. SCH. L., <http://web.law.duke.edu/curriculum/courseinfo/course?id=296> (last visited Aug. 12, 2014). For other related courses, see *Trial Technology: High-Tech Trial Techniques*, NW. L., <http://www.law.northwestern.edu/curriculum/coursecatalog/details.cfm?CourseID=825> (last visited Aug. 12, 2014); see also Kevin D. Ashley, *Teaching Law and Digital Age Legal Practice with an AI and Law Seminar*, 88 CHI.-KENT L. REV. 783, 783 (2013); *Topics in Digital Law Practice: A Free Online Course for Law Students and Law Faculty*, CALI, <http://tdlp.classcaster.net/> (last visited Aug. 12, 2014).

⁸⁵ *ReInvent Law Laboratory*, MICH. ST. U.C.L., <http://reinventlaw.com/> (last visited Aug. 12, 2014). Professors Renee Newman Knake and Daniel Martin Katz, codirectors of ReInvent Law Laboratory, have developed courses in e-discovery, entrepreneurial lawyering, lawyer regulation and ethics in a technology-driven world, legal information engineering, quantitative methods for lawyers, and virtual law practice. See Daniel Martin Katz & Renee Newman Knake, *How This Duo Is Trying to ReInvent Law School*, LEGAL REBELS (May 9, 2013), http://www.abajournal.com/legalrebels/article/how_this_duo_is_trying_to_reinvent_law_school.

⁸⁶ *Institute on Law Practice Technology & Innovation*, SUFFOLK U.L. SCH., <http://lawpracticetechnology.blogs.law.suffolk.edu/> (last visited Aug. 12, 2014).

⁸⁷ *Center for Access to Justice & Technology*, IIT CHI.-KENT C.L., <http://www.kentlaw.iit.edu/institutes-centers/center-for-access-to-justice-and-technology> (last visited Aug. 12, 2014).

student population. Incorporating the training into the core curriculum would leave many more graduates prepared to practice.

V. RECOMMENDATION: TECHNOLOGY IN THE CURRICULUM

Returning to the question of laptops in the classroom, educators should accept the following (presumably noncontroversial) propositions: first, that every lawyer needs to use a laptop or some other computer to work effectively; second, that a large majority of students bring laptops (or tablets) to school,⁸⁸ and third, that laptops, whether in law school or legal practice, can be used for both productive and unproductive purposes. I contend that a ubiquitous and essential work tool for lawyers that has potential for great benefit or distraction represents a perfect teaching opportunity.

We could start by prohibiting the use of pen and paper in classrooms. After all, we should endeavor to model the behavior of the most effective lawyers, and those whose note-taking habits facilitate organized retrieval of information save considerable time, and produce a higher quality of work. Handwritten notes may be lost and can never be searched.⁸⁹ We should tell students why they should *always* take class notes on a laptop, or a tablet, using Microsoft Word, Evernote, or Google Docs, because doing so enables them to find much more easily and synthesize those notes later in the term. This approach will better prepare them for the work of lawyers, who spend much of their time conducting legal research, negotiating settlements, and interviewing clients⁹⁰ before synthesizing recorded information to produce written documents, effective presentations, and the like.

⁸⁸ The University of Victoria's 2013 survey of incoming law students found that 97% own laptops, and 73% use them to take class notes. See McCue, *supra* note 10.

⁸⁹ The Lawyering in the Digital Age Clinic at Columbia Law School requires students to take all notes on a laptop. Johnson & Donnelly, *supra* note 19, at 736. "As a result, all of the information gathered from the interview becomes available to the student, her colleagues[,] and supervisors as she engages in the subsequent lawyering tasks that flow from the initial gathering process such as counseling and drafting documents to effectuate the client's goals." *Id.*

⁹⁰ Cf. Laurie Shanks, *Whose Story Is It, Anyway?—Guiding Students to Client-Centered Interviewing Through Storytelling*, 14 CLINICAL L. REV. 509, 512 n.3 (2008) ("[T]he use of a laptop computer . . . will create equal or more distance between the attorney and client than the pen and paper.").

One approach would be to offer a “Laptops in the Law” class. (We could even make it mandatory!)⁹¹ A silly idea, no doubt. However, if we agreed that effective use of laptops was a skill worth teaching, then the question becomes, where would it fit in the curriculum? As Gene Koo wrote: “‘Teaching technology,’ in isolation from other objectives, will not be as effective as teaching students to accomplish substantive goals related to their daily work while also providing the technology appropriate to meeting those goals.”⁹²

Effective use of laptops for note-taking is a tiny piece of the legal technology puzzle: presentations, communication, e-discovery, practice management, web design, and legal research are some of the others. Any one of these topics could justify its own course, but standing alone they lack context. Infusing skills into other classes gives reality to both doctrine and technology, and dissolves the abstraction.⁹³

The benefits of providing context-based practice, along with expert assistance and substantial feedback, are well documented.⁹⁴ “Context helps students understand what they are learning, provides anchor points so they can recall what they learn, and shows them how to transfer what they learn in the classroom to lawyers’ tasks in practice.”⁹⁵ Indeed, experiential learning for skills, such as negotiation, fact investigation, and communication, is increasingly encouraged throughout the law school

⁹¹ See Charles Harmon Oates, *Law Practice Technology: A Law School Course?* 2–3, 12–13 (Sept. 1, 2012) (unpublished manuscript), available at <http://ssrn.com/abstract=2159371> (arguing that these types of courses should be mandatory). Although I like the idea, my sense is that it is fanciful to expect that technology will be mandatory when there is such a limited amount of available space in the curriculum. Many other professors think their courses should be mandatory, and pushing technology in this way sets up an unwinnable fight. Bringing technology training into other courses has dual advantages of being more likely to succeed, while training students to use the tools “in context” of simulated lawyering problems.

⁹² Koo, *supra* note 14, at 18–19.

⁹³ The weaknesses of academic training “lie in its relative abstraction from the actual application of knowledge to practice, along with its general avoidance of the embedded knowledge of practice itself.” WILLIAM M. SULLIVAN ET AL., *EDUCATING LAWYERS: PREPARATION FOR THE PROFESSION OF LAW* 95 (2007) [hereinafter *CARNEGIE REPORT*].

⁹⁴ See, e.g., STUCKEY ET AL., *supra* note 48, at 141 (“[L]aw teachers should use context-based education to teach theory, doctrine, and analytical skills; how to produce law-related documents; and how to resolve human problems and cultivate practical wisdom.”).

⁹⁵ Deborah Maranville, *Infusing Passion and Context into the Traditional Law Curriculum Through Experiential Learning*, 51 J. LEGAL EDUC. 51, 52 (2001).

experience, even within doctrinal courses⁹⁶ and even during the first year.⁹⁷ This Article posits that, as students engage in context-based, experiential learning, as they learn to think and act like lawyers, they should use real lawyering tools to accomplish their goals. Professor Paul Maharg calls this “a [p]ragmatist approach to the use of technology, [in which] students learn by understanding from, acting within, and critiquing the forms of engagement that lawyers use in the world.”⁹⁸

Effecting the changes proposed in this Article will require faculty support, and generating that support can take time. A good approach is to catalog the innovation that has already taken place at one’s own law school.⁹⁹ In a brown bag or colloquium series, invite the innovators to share their stories, and focus on ways that technology can enhance the learning experience for students. Listening and seeing the successes of colleagues can demystify technology for reluctant professors.¹⁰⁰ This is a

⁹⁶ See CARNEGIE REPORT, *supra* note 93, at 87 (“[T]he apprenticeship of practice can strengthen students’ learning of legal reasoning, pushing them to more supple and inventive thinking.”); see also Noble-Allgire, *supra* note 3, at 38 (“[S]kills exercises offer an alternative—and often better—way for students to grasp substantive concepts.”). For a summary of some of the challenges inherent in bringing skills training into doctrinal courses, see Barbara Glesner Fines, *Out of the Shadows: What Legal Research Instruction Reveals About Incorporating Skills Throughout the Curriculum*, 2013 J. DISP. RESOL. 159.

⁹⁷ See Maranville, *supra* note 95, at 62 (“[F]irst-year experiential learning can include observation or information-gathering experiences; simulations that introduce doctrinal material in the context of a lawyering task such as an interview, a negotiation, or a trial or appellate court oral argument; or real client-contact experiences involving interviewing or information gathering.”).

⁹⁸ PAUL MAHARG, *TRANSFORMING LEGAL EDUCATION: LEARNING AND TEACHING THE LAW IN THE EARLY TWENTY-FIRST CENTURY* 262 (2007).

⁹⁹ During the 2012–2013 academic year, the author and two colleagues visited members of the full-time teaching faculty at William Mitchell. We learned that they are flipping the classroom, teaching high-tech presentation skills, incorporating multimedia elements, teaching web development, and training students on how to participate in online discussions with professionalism and civility.

¹⁰⁰ See Denny E. McCorkle et al., *Integrating Business Technology and Marketing Education: Enhancing the Diffusion Process Through Technology Champions*, 23 J. MARKETING EDUC. 16, 22 (2001) (Technology champions should develop “short courses and workshops to enhance discipline-specific technological competencies among faculty.”). *But see* Jeanne Eicks, *Educating Superior Legal Professionals: Successful Modern Curricula Join Law and Technology*, in *EDUCATING THE DIGITAL LAWYER*, *supra* note 59, at 5-1, 5-12, available at http://www.law.harvard.edu/programs/plp/pdf/006-03358_03358- (continued)

critical step because, if faculty cannot teach with technology, then they will never teach students how to use technology in practice. Cultivating technology enthusiasts on the faculty by promoting their innovations also builds good will. These faculty members can soon be evangelists for technology skills training throughout the curriculum.

Another tactic to identify technology champions is to work with the academic dean or the curriculum committee. Those parties could offer a venue to discuss adding technology competency to the school's established curricular outcomes and, in the process, could suggest professors who might be willing to experiment in their classes.

Absent a pool of obvious volunteers, and understanding some professors' skepticism of technology initiatives, the law school could offer incentives. For example, it could approve stipends or other perks for teaching technology skills, utilizing instructional technologies, or delivering blended and online courses.¹⁰¹ A condition of the stipend might be to report on the effectiveness of the technology-infused course compared with the same topic taught with traditional methods in the past. A more modest change would add one or more technology-related question to course evaluations.¹⁰²

The law school would need to provide all interested professors with expert advice and support.¹⁰³ Depending on the subject matter and type(s)

ch0005.pdf ("Institutions with a faculty comprised of digital immigrants may struggle to find an internal champion . . .").

¹⁰¹ Some universities provide stipends for faculty members to develop technology-rich classes. See, e.g., *Grants and Stipends—Information Technologies*, U. ME., <http://www.umaine.edu/it/grants/> (last visited Aug. 12, 2014) ("The [university] awards [compensation] . . . for faculty members to develop technology-based resources for their courses."); *Summer Stipends for Faculty*, DEPAUW U., <http://www.depauw.edu/offices/academic-affairs/faculty-development/summer-stipends-for-faculty/> (last visited Aug. 12, 2014) (noting that stipends may be granted for "technological enhancement").

¹⁰² The school could ask whether the course incorporated a technology-related outcome or whether the professors are taking good advantage of classroom technology in the class. Consequences of bad course evaluations may depend on the professor's status (e.g., tenured or untenured, adjunct or full time). Regardless, teachers may care about evaluations because they affect student perceptions (at schools that make evaluations public) or because good evaluations may tie into merit increases.

¹⁰³ According to a recent survey, the top near-term priority of chief information officers (CIOs) and senior campus information technology (IT) officers is "assisting faculty with the instructional integration of information technology." *The 2013 Campus Computing Survey*, CAMPUS COMPUTING PROJECT (Oct. 17, 2013), <http://www.campuscomputing.net/item/2013-campus-computing-survey-0>. High quality support can demystify technology for

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of technology, this could include a librarian (e.g., legal research), educational technologist (e.g., presentation technologies), or IT professional (e.g., hardware and software).¹⁰⁴ This individual should meet with professors to understand their course objectives, with an eye toward matching those objectives with key technologies. For each professor, the technologist should follow up with a proposal for ways in which technology could fit within the context of one or more courses.

VI. KEY TECHNOLOGIES AND RECOMMENDATIONS

With expert support, law teachers may choose to incorporate technology training into their classes in ways that illuminate the topics at hand, and afford students an opportunity to practice with tools of the trade. What follows is a list of key technologies,¹⁰⁵ including ideas for how each might be incorporated into existing law school courses.

faculty members. The professor remains the subject expert and content creator, but the professor need not learn to edit video, develop software, design web pages, or answer technical support questions from students. The librarian or technologist in this scenario serves as a producer and project manager for technology-oriented projects.

¹⁰⁴ Librarians often have the advantage of preexisting positive relationships with faculty, experience teaching with technology, and direct involvement with strategic technology-related initiatives at the law school. See Simon Canick, *Library Services for the Self-Interested Law School: Enhancing the Visibility of Faculty Scholarship*, 105 LAW LIBR. J. 175, 185 (2013) (proposing leadership roles for librarians in promoting faculty scholarship). For example, librarians can offer to produce open-access textbooks, handle copyright compliance, or locate free versions of materials (e.g., cases and law review articles, among other things). See *id.* at 196. Libraries that are aligned organizationally with IT or other technology-related departments have a further advantage because the director may have authority to create teams that can tackle these issues.

Libraries and librarians may also play a role in e-learning initiatives. See Richard A. Danner, *Strategic Planning for Distance Learning in Legal Education: Initial Thoughts on a Role for Libraries*, in LAW LIBRARY COLLECTION DEVELOPMENT IN THE DIGITAL AGE 69, 79–80 (Michael Chiorazzi & Gordon Russell eds., 2002) (predicting the importance of providing library information and services to remote users). Librarians can serve as instructional designers, collaborating with professors to produce fully online or blended courses.

¹⁰⁵ There are many others. For another list, see Stephanie Kimbro, *What Should Be in a Digital Curriculum: A Practitioner's Must Have List*, in EDUCATING THE DIGITAL LAWYER, *supra* note 59, at 10-1, 10-1 to -3, available at http://www.law.harvard.edu/programs/plp/pdf/011-03358_03358-ch0010.pdf.

A. E-Discovery

If it seems like every third CLE relates to e-discovery, it is because the topic has seen such rapid change. Responsive information is not in a file cabinet anymore, it is digital: on phones, websites, Facebook, e-mail, and voicemail messages, among many others. Although consultants and vendors have sprung up to help firms deal with the issues, it may be “impossible to competently (let alone zealously) represent a client in a matter involving electronically stored information without a better-than-average familiarity with technology.”¹⁰⁶

Unsurprisingly, many lawyers and judges feel at sea in this area. Plaintiffs must know how to structure data requests. Defendants need to respond to those requests in a way that is thorough, but reasonable.¹⁰⁷ Defense attorneys must advise their clients on how to implement litigation holds and otherwise protect digital information. Altering documents, even metadata, may risk sanctions.¹⁰⁸

Lawyers who represent business owners (even solo practitioners representing small businesses) must have sufficient technical knowledge to understand where clients’ information might reside. Attorneys might also advise businesses on establishing data retention practices in advance of litigation.¹⁰⁹

¹⁰⁶ Bob Ambrogi, *New ABA Ethics Rule Underscores What EDD Lawyers Should Already Know: There’s No Hiding from Technology*, E-DISCOVERY SEARCH BLOG (Aug. 16, 2012), <http://www.catalystsecure.com/blog/2012/08/new-aba-ethics-rule-underscores-what-edd-lawyers-should-already-know-theres-no-hiding-from-technology/>.

¹⁰⁷ The concept of proportionality relates to the cost and effort of e-discovery relative to the value and uniqueness of the information sought. See MICHAEL ARKFELD, ARKFELD ON ELECTRONIC DISCOVERY AND EVIDENCE § 7.4(G)(3)(a) (3d ed. 2013). “[T]he federal rules explicitly allow courts to modify discovery requests based on a cost-benefit ratio or proportionality basis. This ‘proportionality’ test ‘imposes general limitations on the scope of discovery.’” *Id.* (quoting *Zubulake v. UBS Warburg, LLC*, 217 F.R.D. 309, 316 (S.D.N.Y. 2003)); see also THE SEDONA CONFERENCE, THE SEDONA CONFERENCE COMMENTARY ON PROPORTIONALITY IN ELECTRONIC DISCOVERY (2013), available at <https://thesedonaconference.org/download-pub/1778> (establishing six principles for considering proportionality in e-discovery).

¹⁰⁸ See ARKFELD, *supra* note 107, § 1.3(D) (stating that courts impose sanctions for failure to preserve or disclose electronic information).

¹⁰⁹ See Fred Galves, *Teaching Litigation Technology*, in EDUCATING THE DIGITAL LAWYER, *supra* note 59, at 7-1, 7-8 to -10, available at http://www.law.harvard.edu/programs/plp/pdf/008-03358_03358-ch0007.pdf (arguing that lawyers must help clients create

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A relatively small number of law schools offer a dedicated course in e-discovery,¹¹⁰ but many schools have courses in advanced civil procedure, complex litigation, deposition and discovery, and the like. Professor Paula Schaefer of the University of Tennessee College of Law has created an e-discovery simulation for her Pre-Trial Litigation class.¹¹¹ Preceding the class, students earn credit to play roles of clients engaged in a dispute.¹¹² Characters in the simulation produce the very documents (including at least ten e-mails per day from each active participant, loosely following a predetermined calendar of events) that will be the subject of e-discovery once the course begins.¹¹³ “As the simulated case progresses through each e-discovery topic, students read the applicable e-discovery rules of procedure and evidence, cases, best practices guides, ethics rules, and various articles.”¹¹⁴ During the semester, students engage in a discovery planning conference, prepare interrogatories, and draft discovery requests.¹¹⁵

Developing a complex simulation on e-discovery (or any other topic) is a time- and labor-intensive task. Alternatively, one might prepare a closed universe of documents in advance (instead of creating them on the fly) for a module on aspects of the discovery process. Civil procedure teachers could add a discussion of e-discovery issues into the first-year course.¹¹⁶ Easier still, and applicable in virtually any class, would be to address the importance of digital information (e.g., communication

retention policies to preserve potential litigation and prevent negligent spoliation of evidence).

¹¹⁰ See Christopher Danzig, *E-Discovery in Law School: Yes, You Need to Learn This Stuff*, ABOVE THE LAW (June 4, 2012), <http://abovethelaw.com/2012/06/e-discovery-in-law-school-yes-you-need-to-learn-this-stuff/> (A letter received from fourteen attorneys stated: “We are unaware of any other law course that can more directly affect a law student’s job prospects in a positive way . . .”).

¹¹¹ Paula Schaefer, *Injecting Law Student Drama into the Classroom: Transforming an E-Discovery Class (or Any Law School Class) with a Complex, Student-Generated Simulation*, 12 NEV. L.J. 130, 131 (2011).

¹¹² See *id.* at 131.

¹¹³ See *id.*

¹¹⁴ *Id.* at 143.

¹¹⁵ See *id.* at 145–46.

¹¹⁶ See Eicks, *supra* note 100, at 5-9 (“Some law schools have begun the integration of technology within the law school curriculum by adding a few days of eDiscovery to Civil Procedure, offering courses in the law of technology such as Cyber Law or touching upon data and communication security during Legal Profession.”).

technologies like text messages and social media) in the context of typical disputes within that area. Litigation-focused classes could include training on technology components.

Hands-on training methods might include presentations from experienced attorneys or e-discovery vendors¹¹⁷ and lab time to learn predictive coding¹¹⁸ and the tools of document production.¹¹⁹ There are a number of software packages designed to facilitate document review and production, exposure to which would give students insight to the process when they step into practice.¹²⁰

B. Presentation Skills

One of my colleagues, Louis Ainsworth, sometimes laments most lawyers' inability to make a presentation to business people. As former general counsel of a large corporation, he knows that executives expect concise PowerPoint presentations with clear recommendations and conclusions. Law firm attorneys, trained to see shades of gray, often lead less focused discussions with numerous options—"you might consider this approach." Professor Ainsworth has identified a mismatch between the presentation styles of average attorneys and the expectations of their listeners.¹²¹ And it suggests important questions. How should the group

¹¹⁷ See Skalbeck, *supra* note 79, at 2 (suggesting that teachers invite experts to share experiences with technology-assisted document review); see also Eicks, *supra* note 100, at 5-9. "Rather than a superficial guest lecturer involving technology once in each term, students would better engage and learn the subject matter through an education that integrates technology into each lesson—where technology discussions enrich the material being delivered." *Id.*

¹¹⁸ See Eicks, *supra* note 100, at 5-10 to -11 (encouraging the creation of single-credit technology labs attached to required courses).

¹¹⁹ See Maura R. Grossman & Gordon V. Cormack, *Technology-Assisted Review in E-Discovery Can Be More Effective and More Efficient Than Exhaustive Manual Review*, 17 RICH. J.L. & TECH. 1, 2-4, 48 (2011) (refuting the "myth" that manual document review is the most effective method).

¹²⁰ See Galves, *supra* note 109, at 7-10 (describing several programs, including CaseMap, Summation, and Catalyst Solutions).

¹²¹ For an illuminating look at methods of presenting evidence, see generally EDWARD R. TUFTE, BEAUTIFUL EVIDENCE (2006). Professor Tufte recites a litany of lazy or dishonest presentation tactics. "The use of corrupt manipulations and blatant rhetorical ploys in a report or presentation—outright lying, flagwaving, personal attacks, setting up phony alternatives, misdirection, jargon-mongering, evading key issues, feigning disinterested objectivity, willful misunderstanding of other points of view—suggests that the presenter lacks both credibility and evidence." *Id.* at 141. PowerPoint may actually facilitate

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and venue affect the style of presentation? Under what circumstances does technology enhance the message? Are there times when technology is inappropriate? When should lawyers use graphics and other images?

Lawyers in all settings need to make presentations for their work. We may think initially of the courtrooms,¹²² but there are many others, including presentations to clients, colleagues within a firm, municipal entities (e.g., zoning boards), and professional organizations, among many others. These talks may be delivered in person with software, such as PowerPoint, or at a distance via web conferencing tools, such as Skype. Lawyers can use proven multimedia techniques to improve attendees' level of comprehension.¹²³

It should be relatively easy to integrate training into law school classes. Many teachers already require final presentations, but most focus more on content than style. Adding a short module on choosing appropriate software and engaging audiences, and then assessing presentation performance, would give students the tools and incentive to improve.¹²⁴ If PowerPoint is the primary method for a particular audience, then training might include basic tips (e.g., avoid reading your slides) or finding and enhancing images to accompany an oral argument.¹²⁵

Rather than devoting one or more class sessions to student presentations, we might ask students to record themselves and submit those recordings via YouTube or a course management system. This approach

corruption of presentations, encouraging fluff over substance while diminishing the audience's ability to absorb and synthesize data. See EDWARD R. TUFTE, *THE COGNITIVE STYLE OF POWERPOINT: PITCHING OUT CORRUPTS WITHIN* 23–24 (2d ed. 2006).

¹²² See Galves, *supra* note 109, at 7–14 (“[P]roviding law students . . . meaningful [practice] with cutting-edge courtroom technology is part of the necessary skills development that leads to success as a modern litigation attorney.”).

¹²³ See Aaron Dewald, *Improving Presentations (or Videos, or Other Multimedia) with Learning Science*, L. SCH. EDUC. TECH. (Oct. 10, 2013, 3:02 PM), <http://lawschooledtech.classcaster.net/2013/10/10/improving-presentations-or-videos-or-other-multimedia-with-learning-science/> (suggesting principles for multimedia design to increase coherence and comprehension).

¹²⁴ For a selection of PowerPoint alternatives, see Carli Spina, *Presentation Tools*, HARV. L. SCH. LIBR., <http://guides.library.harvard.edu/friendly.php?s=Presentations&gid=4882> (last updated Jan. 17, 2014).

¹²⁵ See Richard K. Sherwin et al., *Law in the Digital Age: How Visual Communication Technologies Are Transforming the Practice, Theory, and Teaching of Law*, 12 B.U. J. SCI. & TECH. L. 227, 260 (2006). Sherwin argues for “visual literacy” instruction to help law students “anticipate the cognitive and emotional effects of visual and multimedia displays and to respond to their adversaries’ visual and multimedia presentations.” *Id.*

recaptures class time for other purposes and allows flexibility in setting recording length. At William Mitchell College of Law, Professor Tony Winer noticed that some students were uncomfortable delivering presentations.¹²⁶ To help them develop analytical skills and construct persuasive arguments in his Constitutional Law–Liberties class, he required each student to submit three brief (five to ten minutes) video recordings over the course of the semester. A few were poised and polished from the start, but most exhibited room for improvement. Some students who used webcams to record themselves had audio or lighting problems; others seemed to be reading notes from their computer screens like a teleprompter. By the end of the course, and with feedback from Professor Winer on both substance and style, students made significant progress.¹²⁷

For classes in which students deliver “traditional” final presentations, professors can add (simulated) elements of venue and audience. For instance, in a business law course, the teacher might ask students to give their presentation in a boardroom, imagining the expectations of an audience of executives. In constitutional law and related subjects, students might practice appellate advocacy in a courtroom. In a trial advocacy course, consider using state-of-the-art presentation technology (such as smartboards) to simulate what is available in higher-tech courtrooms. For any class, students should be encouraged to practice in the simulation environment, or at least to use laptop video hardware and software to record practice sessions and catch problems.

¹²⁶ Anxiety about public speaking is relatively common among law students. See Bonnie Stepleton, *Fear of Public Speaking*, LAW PROFESSOR BLOGS NETWORK (Sept. 18, 2013), http://lawprofessors.typepad.com/academic_support/2013/09/fear-of-public-speaking.html (suggesting that law students who fear public speaking should practice with oral argument study groups).

¹²⁷ ANTHONY S. WINER, CONSTITUTIONAL LAW: LIBERTIES SYLLABUS (Spring 2013). For the video assignments, students used either their own equipment (e.g., laptop webcam) or cameras installed in classrooms. *Id.* Students uploaded recorded videos to Blackboard, where other students in designated subgroups added constructive comments. *Id.* Professor Winer spent twenty to thirty minutes reviewing each video submitted, for a total of fifteen to eighteen hours on each assignment.

*C. Communication and Collaboration*¹²⁸

Most lawyers do at least some drafting and negotiating regardless of their practice area.¹²⁹ Whether they are resolving a dispute or ongoing litigation, helping a client put together a business transaction, or creating a will for the senior matriarch in the client's family, lawyers consistently draft, revise, negotiate, resolve conflict, and perform other related activities using these skills. Negotiation is only one kind of collaboration, of course; lawyers must also work with peers both outside and within a firm, with experts, and with clients, to name a few. They need to move all sorts of projects forward with purpose and civility.¹³⁰

Lawyers communicate and collaborate now in very different ways than they did years ago because of technology. Most negotiations take place at a great distance and use telephonic or e-mail communication. Drafting involves redlining with "track changes" and "document compare" in Microsoft Word, for example. Sample forms and example agreements are available on paid sites as well as through a Google search. The practice of law using these basic, core skills has changed as radically as the technology lawyers now utilize.

Communication and collaboration skills may be taught and assessed throughout the curriculum.¹³¹ In two of Professor Jim Hilbert's courses,

¹²⁸ This Subpart is adapted from materials written by Professor Jim Hilbert for a presentation with the author at the Institute for Law Teaching and Learning's Hybrid Law Teaching conference in June 2013. See *Hybrid Law Teaching Session 4 Workshops*, INST. L. TEACHING & LEARNING, <http://lawteaching.org/conferences/2013/workshops/session4.php#session-a> (last visited Aug. 12, 2014).

¹²⁹ See Carol Chomsky & Maury Landsman, *Introducing Negotiation and Drafting into the Contracts Classroom*, 44 ST. LOUIS U. L.J. 1545, 1545–46 (2000) (discussing the importance of introducing negotiating and drafting exercises in the first-year contracts course).

¹³⁰ See Rich Goldstein & Ron Bynum, *Creating a High-Performance Law Firm Through a Culture of Collaboration*, LAW PRAC. TODAY (Jan. 2013), http://www.americanbar.org/content/newsletter/publications/law_practice_today_home/lpt-archives/january13/creating-a-high-performance-law-firm-through-a-culture-of-collaboration.html ("This article [suggests ways] . . . to [establish] a *collaborative* environment that produces high-performance results while creating a workplace that all firm members appreciate and enjoy.").

¹³¹ See STUCKEY ET AL., *supra* note 48, at 120 (encouraging collaboration as a principle for teaching law, in part because lawyers so often work in teams). Professor Sophie Sparrow of the University of New Hampshire School of Law uses team-based learning to engage students, and assess their collaboration efforts, in large doctrinal courses. Sophie

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Transactions and Settlements¹³² and Negotiation,¹³³ students must learn how to use these new technologies for drafting documents and negotiating agreements.¹³⁴ Course assignments include: (1) negotiating simulations through e-mail (where Professor Hilbert is copied on each e-mail to monitor student performance and generate examples to share in class); (2) exchanging drafts where students must provide their colleagues (or opponents) with “mark-ups” using track changes;¹³⁵ and (3) finding sample agreements online and revising (or critiquing) the samples for use in a specific fact scenario.¹³⁶

Although students use e-mail and phone regularly, and they may feel comfortable (even expert) in communicating for personal activities, they often fail when using the same tools for professional purposes. Negotiating via e-mail is entirely different than casually sending messages to friends, and the many differences in personal and professional e-mail protocols are not always obvious. Students are often surprised to see what level of detail is required, for example, in painstakingly crafting professional e-mails in a negotiation in which every word matters (and will

M. Sparrow, *Can They Work Well on a Team? Assessing Students' Collaborative Skills*, 38 WM. MITCHELL L. REV. 1162, 1165 (2012). Her students formulate their own collaboration guidelines and then practice through solving hypothetical problems, giving presentations, drafting documents, and evaluating teammates' writing. *See id.* at 1169.

¹³² *Transactions and Settlements*, WM. MITCHELL C.L., <http://web.wmitchell.edu/students/course-description/?course=9014> (last visited Aug. 12, 2014).

¹³³ *Negotiations*, WM. MITCHELL C.L., <http://web.wmitchell.edu/students/course-description/?course=4575> (last visited Aug. 12, 2014).

¹³⁴ Professor Hilbert has made an extensive, searchable archive of course materials available as a resource to other teachers of negotiation, alternative dispute resolution, conflict resolution, client counseling, and drafting. *Center for Negotiation & Justice Teaching Materials*, WM. MITCHELL C.L., <http://www.negotiation-justice.com/> (last visited Aug. 12, 2014).

¹³⁵ JIM HILBERT ET AL., TRANSACTIONS AND SETTLEMENTS SYLLABUS 3 (Spring 2014); JIM HILBERT ET AL., TRANSACTIONS AND SETTLEMENTS THIRTEENTH ASSIGNMENT (Fall 2013). Lawyers (and students) must learn to scrub any markups, comments, or other metadata associated with Word documents before distribution. *See* Kimbro, *supra* note 105, at 10-9 (citing scenarios in which comments revealing legal strategy are inadvertently sent to opposing counsel).

¹³⁶ JIM HILBERT ET AL., *supra* note 135, at 3.

be scrutinized and potentially used against the client or lawyer at a later time).¹³⁷

Lawyers use a growing number of collaboration tools. Some of those tools, including Google Docs,¹³⁸ Basecamp,¹³⁹ SharePoint,¹⁴⁰ or legal practice management software, may be appropriate for law teachers to include in assignments. Professors might ask students to practice with a particular tool outside of class (after watching a screencast or other tutorial that a librarian or a technologist created), or ask for a guest lecture from an expert. Training and assessment of collaboration skills could occur at any time that teamwork is required in a law school class.

D. Marketing/Web Design/Social Media

In this era of unbundled legal services, in which potential clients increasingly choose online self-help options, more than one-quarter of solo practitioners do not have a website.¹⁴¹ Many others spend thousands of dollars on web development, but they may end up with a site that cannot easily be updated (without additional cost) or that quickly becomes stylistically outdated.¹⁴² Basic web development concepts for students would be welcome, such as how to register a good domain name (and what is a “good” name?), pick a web host, choose effective colors and design elements for particular practice areas, and locate copyright-free images. In addition, law schools should teach students how to make basic decisions

¹³⁷ See Koo, *supra* note 14, at 20 (“[T]eaching attorneys to ‘use email’ is . . . probably silly, but teaching them how to compose email in a professional manner, or to manage information flow through their inboxes, would be a tremendous benefit.”).

¹³⁸ See generally Jennifer T. Edwards & Credence Baker, *A Case Study: Google Collaboration Applications as Online Course Teaching Tools*, 6 MERLOT J. ONLINE LEARNING & TEACHING 828 (2010), available at http://jolt.merlot.org/vol6no4/edwards_1210.pdf (discussing a study involving Google Docs).

¹³⁹ See Josh Poje, *Simple Project Management Tools for Your Practice*, LAW PRAC. TODAY (Dec. 2012), http://www.americanbar.org/content/dam/aba/publications/law_practice_today/simple-project-management-tools-for-your-practice.authcheckdam.pdf (discussing the use of Basecamp).

¹⁴⁰ See Ben Schorr, *Office 365 for Lawyers*, LAW PRAC. TODAY (May 2012), http://www.americanbar.org/content/dam/aba/publications/law_practice_today/office-365-for-lawyers.authcheckdam.pdf (discussing SharePoint’s uses).

¹⁴¹ See 4 AM. BAR ASS’N, AMERICAN BAR ASSOCIATION LEGAL TECHNOLOGY REPORT, at viii (Joshua Poje ed., 2013) [hereinafter ABA TECHNOLOGY SURVEY].

¹⁴² See Ilya Pozin, *How Much Does a Website Cost?*, FORBES (Aug. 7, 2013), <http://www.forbes.com/sites/ilyapozin/2013/08/07/how-much-does-a-website-cost/>.

about what kind of information and resources to include on the site.¹⁴³ Law school graduates will need to know how to present themselves and their legal practices in a positive light, at a reasonable cost (money and time), and with the understanding of what prospective clients are seeking.¹⁴⁴

Practitioners have long used a variety of marketing strategies. Some are decidedly low-tech strategies, like handing out business cards at networking events or placing advertisements in the Yellow Pages. However, these days, lawyers are experimenting with tools like Facebook,¹⁴⁵ Google+,¹⁴⁶ LinkedIn,¹⁴⁷ and Twitter.¹⁴⁸ “The skepticism of a

¹⁴³ For an excellent, four-part guide to building a law firm website, see Heidi Alexander, *Website Essentials—Part IV: Search Engine Optimization*, MASS. L. OFFICE MGMT. ASSISTANCE PROGRAM (Mar. 15, 2013), <http://masslomap.org/website-essentials-part-iv-search-engine-optimization/> (covering initial steps, design and development, site metrics, and search engine optimization).

¹⁴⁴ See Emma Durand-Wood, *What Will Clients Find When They Go Looking for You?*, LAW FIRM WEB STRATEGY BLOG (Feb. 25, 2013), <http://www.stemlegal.com/strategyblog/2013/what-will-clients-find-when-they-go-looking-for-you/> (noting the importance of well-written practice pages and lawyer biographies on firms’ websites, along with online materials (e.g., blog posts, articles) that demonstrate their expertise and experience).

¹⁴⁵ See, e.g., Leora Maccabee, *Facebook 101: Why Lawyers Should Be on Facebook*, LAWYERIST (Apr. 23, 2009), <http://lawyerist.com/facebook-101-why-lawyers-should-be-on-facebook/> (arguing that Facebook offers opportunities for networking, marketing, research, and hiring).

¹⁴⁶ See Dale Tincher, *Google+ Is No Longer Optional for Law Firm Marketing; Reviews Are Increasingly Important*, LAW WEBMARKETING (June 12, 2012), <http://www.lawwebmarketing.com/2012/06/google-is-no-longer-optional-for-law-firm-marketing-reviews-are-increasingly-important> (noting that Google+ usage is required for firms to obtain reviews that are integrated into search results).

¹⁴⁷ See, e.g., Dennis Kennedy & Allison C. Shields, *LinkedIn: How to Grow, Nurture Your Network and Obtain Results*, YOURABA (May 2012), <http://www.americanbar.org/newsletter/publications/youraba/201205article01.html> (recommending basic strategies to grow a professional network on LinkedIn).

¹⁴⁸ Increasingly, lawyers are using Twitter as an investigative tool in order to understand the unvarnished opinions of clients, witnesses, opposing counsel, and jurors. See Antigone Peyton & Ernie Svenson, *Trial Lawyers Tackle Twitter*, LAW PRAC. MAG. (Mar./Apr. 2013) http://www.americanbar.org/publications/law_practice_magazine/2013/march-april/trial-lawyers-tackle-twitter.html (“Twitter is a window into the personality and predilections of people who can have a great impact on the outcome of a trial. Those bland voir dire questions and depositions often can[no]t match the value of the independent, real-life statements and social views expressed in Twitter’s microblogging platform.”).

few years ago has given way to a growing appreciation for the ways that blogs and various other social media and networking tools can be deployed to help build the reputation of individual lawyers and practice groups”¹⁴⁹ This year, 59% of lawyers surveyed reported that their firms have a social media presence, up from 17% in 2010.¹⁵⁰ Of lawyers who maintain legal topic blogs for professional purposes, 39.1% have generated new clients (directly or via referral) as a result of their efforts.¹⁵¹

In some respects, students have an advantage when it comes to social media; after all, they use it more than most lawyers and law professors.¹⁵² But, generally speaking, they lack experience using the same tools for professional purposes: developing a network of colleagues, finding referrals, conducting research, and so on.¹⁵³ Students need to learn the implications of posting inflammatory or otherwise inappropriate information online.¹⁵⁴ Instead of warning students away from social media altogether,¹⁵⁵ law schools ought to show them how to establish a

¹⁴⁹ ALM MEDIA INTELLIGENCE, *FANS, FOLLOWERS AND CONNECTIONS: SOCIAL MEDIA ROI FOR LAW FIRMS 4* (2012).

¹⁵⁰ 4 ABA TECHNOLOGY SURVEY, *supra* note 141, at xv. Another survey, released in 2012, showed 83% of larger law firms use social media. ALM MEDIA INTELLIGENCE, *supra* note 149, at 16.

¹⁵¹ 4 ABA TECHNOLOGY SURVEY, *supra* note 141, at 37. The ALM result was similar, finding 41% of firms “land[ed] new clients and matters for” their firms as a result of their presence on social media networks. ALM MEDIA INTELLIGENCE, *supra* note 149, at 22.

¹⁵² See JOANNA BRENNER & AARON SMITH, *72% OF ONLINE ADULTS ARE SOCIAL NETWORKING SITE USERS 3* (2013), available at http://www.pewinternet.org/files/old-media/Files/Reports/2013/PIP_Social_networking_sites_update_PDF.pdf (stating 72% of adults use social networking sites, including 89% of 18- to 29-year-olds, 78% of 30- to 49-year-olds, 60% of 50- to 64-year-olds, and 43% of those aged 65 and older).

¹⁵³ See Granat & Kimbro, *supra* note 18, at 777–80 (arguing for instruction in social media use, web design, blogging, and marketing applications).

¹⁵⁴ See Kimbro, *supra* note 105, at 10-15 (“[L]aw students [must] understand the impact of their online actions on their future careers and the longevity of anything they post online.”).

¹⁵⁵ See Kevin O’Keefe, *Law School Advisors Telling Students to Stay Off Blogs and Social Media?*, REAL LAWYERS HAVE BLOGS (Oct. 5, 2013), <http://kevin.lexblog.com/2013/10/05/law-school-advisors-telling-students-to-stay-off-blogs-and-social-media/>. This commentator reports that some law schools are warning students about the dangers of social media without educating them about “the power of social [media] and blogs for learning, networking, and establishing themselves . . . as authorities.” *Id.*

professional digital identity, how to market their practice,¹⁵⁶ and how to separate their personal (private) and professional (public) lives online.¹⁵⁷

The curriculum holds many places in which to explore digital identity issues.¹⁵⁸ Professors can teach professional communications via social media by encouraging back-channel Twitter use during class.¹⁵⁹ Similar to the modern conference experience, teachers would assign a hashtag (say, #ALR2014 for an Advanced Legal Research course) and encourage students to use it to discuss concepts raised during the class.¹⁶⁰ This idea has several advantages. For instance, it promotes active participation from students who are not “on call” (and who might otherwise be distracted by their laptops).¹⁶¹ It also provides valuable feedback for professors who can check the stream either during the break or after class.¹⁶² If

¹⁵⁶ See, e.g., Jared D. Correia, *Tweet Me Right: A Practical Primer for Developing Relationships and Clients Through Twitter*, LAW PRAC. TODAY (June 2012), http://www.americanbar.org/publications/law_practice_today_home/law_practice_today_archive/june12/tweet-me-right.html. In that article, the author recommends steps to “leverage Twitter to develop professionally and to grow their client rosters.” *Id.*

¹⁵⁷ Kimbro, *supra* note 105, at 10-11 (“Before a student [graduates from] law school, [the student] should understand both how to use social media responsibly and how to use the online technology to ethically market a law practice.”).

¹⁵⁸ Although this Part focuses on communication, networking, and the like, social media issues may be explored during civil procedure or more advanced courses on e-discovery. See *supra* Part VI.A; see also Eicks, *supra* note 100, at 5-8 to -10 (“How to present, preserve[,] and manage digital evidence for both civil and criminal matters will be a large portion of any litigators’ experience and should be thoroughly addressed in any Evidence course.”).

¹⁵⁹ See Amanda J. Rockingson-Szapkiw & Michael Szapkiw, *Engaging Higher Education Students Using Twitter*, 2011 PROCEEDINGS OF GLOBAL LEARN ASIA PAC. 360, 362-63, available at http://digitalcommons.liberty.edu/cgi/viewcontent.cgi?article=1205&context=educ_fac_pubs (recommending Twitter for in-class conversation and polling, among other things). Dean Patricia Salkin of Touro Law Center related an interesting story in a recent blog post. Patricia Salkin, *Social Media and the Law School Constituents*, FAC. LOUNGE (Sept. 14, 2013), <http://www.thefacultylounge.org/2013/09/social-media-and-the-law-school-constituents.html>. During a class, the adjunct professor noticed a student tweeting inappropriate comments. *Id.* She replied during class, “letting him know she was on to him and could read what he was doing. It stopped.” *Id.* She recommends an orientation session on social media and professionalism. *Id.*

¹⁶⁰ See Rockingson-Szapkiw & Szapkiw, *supra* note 159, at 363.

¹⁶¹ See *id.* at 362.

¹⁶² See *id.*

misunderstandings arise, then the teacher can address them by e-mail or at the next class session.¹⁶³

Blogging is one way for students to present themselves and their work online.¹⁶⁴ Professors can assign a tutorial and lab session with a technologist, after which students will have free WordPress (or similar) accounts and basic websites. Over the course of the semester, professors may ask them to blog about recent cases or other news, which reinforces the importance of staying current when practicing law.¹⁶⁵ Asking students to comment on each other's posts can help them to provide professional and constructive feedback—a skill they will need in practice as they read colleagues' drafts of documents.¹⁶⁶

A third idea, also taking advantage of WordPress or another web design platform, is for students to develop websites, or social media plans, for (fictional) clients or law firms.¹⁶⁷ Students in Professor Kim Dayton's

¹⁶³ Similar goals may be realized through a Facebook group. Unlike Twitter, a Facebook group has the advantage of allowing more than 140 characters, and it can be set as private. Chris Taylor, *Your New Facebook Status: 63,206 Characters or Less*, MASHABLE (Nov. 30, 2011), <http://mashable.com/2011/11/30/facebook-status-63206-characters>; *What Are the Privacy Options for Groups?*, FACEBOOK, <http://www.facebook.com/help/www/220336891328465> (last updated Jan. 2014).

¹⁶⁴ See Kevin O'Keefe, *Should We Be Teaching Blogging and WordPress at Law Schools?*, REAL LAWYERS HAVE BLOGS (Jan. 15, 2012), <http://kevin.lexblog.com/2012/01/15/should-we-be-teaching-blogging-and-wordpress-at-law-schools/> ("There[i]s no better way for a law student to network with leading lawyers, alum[ni,] and potential employers than blogging. There[i]s no better way for . . . law students to demonstrate their passion for and desire to get into a niche area of the law than blogging."); see also Amanda L. Smith, *Blogging: Reflection Spurs Students Forward* 34 (Widener Law Sch. Legal Studies Research Paper Series, Paper No. 13-72, 2013), available at <http://ssrn.com/abstract=2321689> ("[Blogg]ing cultivates a habit of reflection essential to the learning process.").

¹⁶⁵ In courses with final essays, requiring that students write regular blog posts about research they have conducted may discourage them from waiting until the last minute to begin writing.

¹⁶⁶ It is also fun for students to see if members of the public link to, or comment on, the blogs they write for class. See Josh Blackman, *The Law School Classroom Experience of Tomorrow—Before, During, and After Class*, JOSH BLACKMAN'S BLOG (May 18, 2011), <http://joshblackman.com/blog/2011/05/18/the-law-school-classroom-experience-of-tomorrow-before-during-and-after-class/>. Professor Blackman requires students to use blogs to analyze cases (and comment on others' posts) before class. *Id.*

¹⁶⁷ Students could begin by identifying a target audience or practice area and, then, recommending tools, sites, or groups (e.g., Facebook, LinkedIn, blogs, Twitter, discussion
(continued)

Elder Law Capstone course at William Mitchell College of Law received training on web design from members of the library staff and then created an Elder Justice Scholars website as a class project.¹⁶⁸ “A number of Keystone students have, since graduation, set up their law firms’ websites, which in an uncertain economic climate has the potential to give them a leg up on other recent graduates just starting a practice.”¹⁶⁹

E. Hardware/Software/Mobile

Last winter, I received a call from a family friend. She had spent her career as an attorney working for Legal Aid, and in that capacity she never focused much on technology. However, like many lawyers, she decided to strike out on her own, and when she did she ran into a number of practical issues she had never considered. For example, how should she set up a secure network and access her information while away from work? How much should she spend on an office computer? Did she need a second machine at home, or should she buy and transport a single laptop? Was Apple a viable option, or did she really need Windows?¹⁷⁰ Could she share Internet access with her neighbor down the hall? What kind of printer should she buy? How about a scanner if she wanted a paperless office?

Lawyers, especially those in solo or small environments, have to make numerous choices about technology.¹⁷¹ As noted earlier, record numbers of new law school graduates are moving directly into solo and small firm practice.¹⁷² These lawyers and recent graduates have little or no law school training to call upon; they can hire consultants to make recommendations, or IT support firms to fix something if it breaks, but many simply do the best they can.

forums, Google+, and listservs) to support a plan. They might recommend those likely to have the best return on investment (in terms of time and money).

¹⁶⁸ Kim Dayton, *The Accidental Elder Law Professor*, 40 STETSON L. REV. 97, 125–28 (2010).

¹⁶⁹ *Id.* at 127.

¹⁷⁰ See, e.g., Jeffrey Allen, *To Switch or Not to Switch? That Is the Question!*, 27 AM. J. FAM. L. 45, 45 (2013) (evaluating the use of Macintosh computers in legal practice).

¹⁷¹ SHARON D. NELSON ET AL., *THE 2013 SOLO AND SMALL FIRM LEGAL TECHNOLOGY GUIDE: CRITICAL DECISIONS MADE SIMPLE*, at xxi–xxii (2013). This author provides information to help solo and small firm attorneys find the “‘sweet spot’ of legal tech—the best value for the dollars.” For an excellent primer on law practice hardware and software, see generally Jim Calloway, *Equipping the Law Office 2012*, 86 OKLA. B.J. 2071 (2012).

¹⁷² See *supra* text accompanying notes 15–17.

Law schools occasionally run brown bag sessions on specific aspects of legal technology—“iOS vs. Android,” for example—but reach only a few students.¹⁷³ With creativity, we can ask students to try office technologies in the context of simulation exercises for various classes. For example, one might imagine small-group projects in which students collaborate with tablets or other mobile devices, and evaluate potentially useful apps along the way.¹⁷⁴ For instance, students could use apps for dictation and transcription in order to record interviews. Tablets may also help illuminate details that emerge during depositions or client meetings. If the deponent (for example) describes an incident that occurred outside, students could find the location using Google Maps street view and, then, ask the witness to mark his or her exact location, along with the positions of other parties.¹⁷⁵

For other simulations, extensive information may be distributed in print so that students can digitize the content for later search and retrieval.¹⁷⁶ This would involve use of a scanner and evaluation of document management software. Any simulation that involves submission of legal documents (e.g., to a court, to opposing counsel) might incorporate

¹⁷³ See, e.g., *Lunch & Learn: Safe Computing Practices*, PENN L. (Oct. 3, 2013), <https://www.law.upenn.edu/live/news/2855-lunch-amp-learn-safe-computing-practices/its/news.php>.

¹⁷⁴ Most lawyers carry a smartphone (which is, truly, a powerful computer in its own right) in their pockets. 6 ABA TECHNOLOGY SURVEY, *supra* note 141, at xx. According to that study, 91% of attorneys use smartphones “for law-related tasks while away from their primary workplace.” *Id.* Many others have purchased tablets; the ABA study found that 48% of attorneys use tablets for “law-related tasks away from their primary workplace (compared with 33% in 2012 and 15% in 2011).” *Id.* at xxvii.

¹⁷⁵ This concept was adapted from Jeff Richardson, *Using an iPad to Recreate a Scene in a Deposition*, IPHONE J.D. (May 5, 2011), http://www.iphonejd.com/iphone_jd/2011/05/using-an-ipad-to-recreate-a-scene-in-a-deposition.html.

¹⁷⁶ Electronic notes, uploaded to the cloud via any number of services, are available anywhere there is an Internet connection. See Joseph A. School, Comment, *Clicking the “Export” Button: Cloud Data Storage and US Dual-Use Export Controls*, 80 GEO. WASH. L. REV. 632, 644 (2012). Handwritten notes left at the office have no value to those working from home. See, e.g., Sam Glover, *Paperless Office Essentials*, LAWYERIST (Dec. 7, 2011), <http://lawyerist.com/paperless-office-essentials/>. While paper notes (and other documents) may be digitized, scanning constitutes a new process with additional steps and margin for error. Paul J. Raine, *Cruising the Internet with Skipper Ted Kurt*, 83 MICH. B.J., Feb. 2004, at 48, 48. For instance, creating searchable scans depends on optical character recognition, which may not be able to decipher handwriting. *Id.*

a brief discussion of file formats, particularly when and how to use a PDF.¹⁷⁷

F. Legal Research

Legal research can be a time-consuming and expensive undertaking. A recent study indicated that 56% of law firm employers expected associates to have strong research skills, but did not offer any formal training.¹⁷⁸ Furthermore, those lawyers spend nearly one-third of their working hours on legal research and use electronic resources (both free and paid) 85% of the time.¹⁷⁹ Many large firms have librarians who work in partnership with attorneys, especially newer associates, on projects that may include law, business information, fact and financial investigation, and interdisciplinary research. In these environments, attorneys have access to very sophisticated, powerful, and costly databases from companies like Thomson Reuters, LexisNexis, Bloomberg, RIA, and BNA.¹⁸⁰ Attorneys must also integrate a growing number of free sources for public records, government information, and statistics, among other categories of information.

Naturally, law firms want the work done correctly, but efficiency remains critical. A 2007 survey of law firm librarians found that cost-effectiveness was more important than any other research-related factor or task.¹⁸¹ There are several reasons for emphasizing lower-cost research habits. First, time spent on research may be “eaten” by the firm as a matter of course, or if it appears excessive.¹⁸² Second, even firms that enter into

¹⁷⁷ Adobe Acrobat Professional includes features for lawyers, such as redaction, and offers the ability to compare differences between multiple PDF files. See Calloway, *supra* note 171, at 2074.

¹⁷⁸ STEVEN A. LASTRES, REBOOTING LEGAL RESEARCH IN A DIGITAL AGE 2 (2013), available at <http://www.llrx.com/files/rebootinglegalresearch.pdf>.

¹⁷⁹ *Id.* at 3.

¹⁸⁰ See generally Laura K. Justiss, *A Survey of Electronic Research Alternatives to LexisNexis and Westlaw in Law Firms*, 103 LAW LIBR. J. 71 (2011) (finding commonly used alternatives to LexisNexis and Westlaw for primary sources, dockets, secondary sources, business information, and public records, among others).

¹⁸¹ See Patrick Meyer, *Law Firm Legal Research Requirements of New Attorneys*, 101 LAW LIBR. J. 297, 311–12 (2009) (showing that 84.7% of respondents listed cost-effective research as important, more so than any other task).

¹⁸² See, e.g., Rachel M. Zahorsky, *Firms Wave Goodbye to Billing for Research Costs*, A.B.A. J. (Nov. 14, 2012, 8:30 AM), http://www.abajournal.com/lawscribbler/article/firms_wave_goodbye_to_billing_for_research_costs/.

“unlimited use” contracts with preferred vendors may see their rates increase at the next renegotiation based on actual time spent during the term of the contract.¹⁸³ Third, it is no longer standard practice to bill clients for research database costs (e.g., Westlaw charges).¹⁸⁴ For the most part, research is now considered overhead.¹⁸⁵

Small firm attorneys and solo practitioners have fewer resources but just as many demands on their time. Efficiency is important, both in terms of limiting time spent conducting research and in reducing or eliminating database costs. As a result, many lawyers cannot rely on law school stalwarts like LexisNexis and Westlaw, which may cost thousands of dollars per year for a limited package.¹⁸⁶

With respect to legal research instruction, there are two main problems. First, there is disconnect between the research needs of attorneys and the training schools provide. Law schools receive heavily discounted licenses to Westlaw, LexisNexis, and Bloomberg Law and can, therefore, provide virtually unlimited, no-charge access to students.¹⁸⁷ By doing so, and by emphasizing these tools in our classes,¹⁸⁸ we set up our graduates to feel helpless without them. Indeed, graduates may need to choose between spending more than they can afford to continue using Westlaw or LexisNexis, and learning an entirely new research process on the fly, without the assistance of librarians or professors. What all lawyers (but especially small firm and solo practitioners) need is to find

¹⁸³ See Meyer, *supra* note 181, at 311.

¹⁸⁴ See Zahorsky, *supra* note 182.

¹⁸⁵ See Sarah Wise, Comment, *Show Me the Money! The Recoverability of Computerized Legal Research Expenses by the Prevailing Party in the Federal Circuits*, 36 CAP. U. L. REV. 455, 459 n.31 (2007) (“A firm [that] pays a flat fee or monthly fee for access to Westlaw or Lexis would be unable to bill the client . . . because the expenses would be properly considered a fixed overhead cost.”).

¹⁸⁶ See Josh Camson, *Some Overhead Is Necessary*, LAWYERIST (May 30, 2012), <http://lawyerist.com/some-overhead-is-necessary/>. That user reported a \$300-per-month cost for Westlaw for two attorneys’ unlimited access to Pennsylvania “and federal caselaw, as well as select secondary sources, treatises, and online forms.” *Id.*

¹⁸⁷ See Heidi W. Heller, *The Twenty-First Century Law Library: A Law Firm Librarian’s Thoughts*, 101 LAW LIBR. J. 517, 518 (2009) (finding that law schools receive 90% discounts on their LexisNexis and Westlaw contracts).

¹⁸⁸ In legal research and writing programs, the most commonly taught databases are WestlawNext, Lexis Advance, Westlaw Classic, and LexisNexis. See ASS’N OF LEGAL WRITING DIRECTORS & LEGAL WRITING INST., REPORT OF THE ANNUAL LEGAL WRITING SURVEY 99 (2013), available at <http://www.lwionline.org/uploads/FileUpload/2013SurveyReportfinal.pdf>.

information effectively and cheaply, and that need should drive research instruction in law schools.¹⁸⁹

Second, most law schools only require research training during the first year within a writing program that includes numerous, nonresearch-related objectives.¹⁹⁰ Unfortunately, this means research skills have atrophied or disappeared before they are revisited for upper-class research papers and years before needed in practice. Many schools offer specialized electives like Advanced Legal Research or topical research classes, but they reach a small percentage of students. A more effective approach is one that helps all students after their first year of law school.

The answer is not to eliminate upper-level research instruction, but instead to reposition it to take place at the moment of need—in other words, to dismantle traditional advanced or specialized legal research lectures and replace them with workshops, periodic class visits, small-group tutorials, embedded librarian partnerships, and other collaboration with clinical and practicum faculty, preferably multiple times during a term. This approach addresses a perennial criticism of legal research instruction: that it occurs at times dictated by convention or administrative convenience, instead of at the moment that students are actually receptive and can put the information to meaningful use.¹⁹¹

An obvious spot to include research training is within any class for which students are required to produce a final research paper.¹⁹² For those classes, librarians can offer an in-person workshop focusing on free or lower-cost research tools like Google Scholar,¹⁹³ FDsys,¹⁹⁴ Cornell's Legal

¹⁸⁹ See Genevieve Blake Tung, *Academic Law Libraries and the Crisis in Legal Education*, 105 LAW LIBR. J. 275, 301 (2013). That commentator argues that practices of large firms “should be of marginal interest to law school research instructors, because fewer than [10%] of 2011 law graduates secured full-time, long-term positions” in that environment. *Id.*

¹⁹⁰ See Glesner Fines, *supra* note 96, at 175 (“[W]ith all the learning goals jostling for priority in these courses, students cannot be expected to have acquired much competency in legal research in the first year.”).

¹⁹¹ Blake Tung, *supra* note 189, at 292.

¹⁹² See Glesner Fines, *supra* note 96, at 176 (“[U]pper-level writing . . . courses are . . . the most fertile ground for integration and collaboration . . .”).

¹⁹³ GOOGLE SCHOLAR, <http://scholar.google.com/> (last visited Aug. 12, 2014).

Information Institute,¹⁹⁵ Fastcase,¹⁹⁶ state and municipal websites, and blogs on numerous topics. Librarians can produce research guides or screencasts and arrange consultations with individual students.¹⁹⁷ Research modules incorporated into topical, upper-division electives can also introduce students to free systems, such as Zotero¹⁹⁸ or Mendeley,¹⁹⁹ that store web-based research in personal, searchable databases.

Other opportunities for integration of research skills may require a bit more creativity. Classes relating to litigation or advocacy may feature training on finding online briefs or jury verdicts and on investigating judges, opposing counsel, and expert witnesses.²⁰⁰ For contracts or drafting courses, a librarian could demonstrate sites with free or low-cost forms.²⁰¹ And, students in Civil Procedure or related courses could learn about PACER and other electronic filing and retrieval systems for state courts.²⁰²

¹⁹⁴ U.S. GOV'T PRINTING OFFICE, <http://www.gpo.gov/fdsys/> (last visited Aug. 12, 2014).

¹⁹⁵ LEGAL INFO. INST., <http://www.law.cornell.edu/> (last visited Aug. 12, 2014).

¹⁹⁶ FASTCASE, <http://www.fastcase.com/> (last visited Aug. 12, 2014).

¹⁹⁷ The topical research lecture is the “bread and butter” of academic law librarians, but it is an underutilized service. Librarians argue that, with better research skills, students will produce better essays (suggesting better understanding of course concepts), but professors feel pressed for time and dislike the uncertainty of guest teachers. This is why a kind of institutional mandate, in the form of curriculum committee backing, or incentives, may be the most realistic approach to expanding research training beyond specialty courses.

¹⁹⁸ ZOTERO, <http://www.zotero.org/> (last visited Aug. 12, 2014).

¹⁹⁹ MENDELEY, <http://www.mendeley.com/> (last visited Aug. 12, 2014).

²⁰⁰ See, e.g., *Litigation Content & Services*, WESTLAWNEXT LITIGATOR, <http://legalsolutions.thomsonreuters.com/law-products/westlawnext/litigator> (last visited Aug. 12, 2014).

²⁰¹ See, e.g., HOTDOCS, <http://www.hotdocs.com/> (last visited Aug. 12, 2014).

²⁰² See Susan E. Hauser, *Teaching Civil Procedure with PACER*, INST. L. TEACHING & LEARNING SPRING CONFERENCE 1 (Mar. 3, 2012), available at [http://lawteaching.org/conferences/2012technology/handouts/05a-pacer\(hauser\).pdf](http://lawteaching.org/conferences/2012technology/handouts/05a-pacer(hauser).pdf) (“PACER . . . illustrates the litigation timeline to students in a way that is practical and useful.”). Teachers might consider simulating an e-filing system as a means for students to submit papers for classes. Or, teachers may simply tell students that uploading an assignment to Blackboard or TWEN is practice for using an electronic submission system, in which adherence to strict deadlines is critical.

G. Document/Case/Practice Management

Lawyers utilize a variety of tools to help manage client and case information. In recent years, services like Rocket Matter,²⁰³ Amicus Attorney,²⁰⁴ Time Matters,²⁰⁵ and Clio²⁰⁶ have emerged to compete for business from law firms of all sizes. These systems can manage virtually all aspects of a practice, including sharing contacts and calendars; indexing, storing, and retrieving documents (including e-mail); tracking time; and billing clients. They establish a portal to relevant information, and they may be used to facilitate collaboration within the firm. Increasingly, these packages are web-based, allowing secure access from outside the office.²⁰⁷

Some practice management tools also include document assembly features to automate the creation of correspondence, contracts, and other documents. HotDocs is a well-developed product that allows lawyers to build templates for reuse of common documents.²⁰⁸ Its value is in saving time and avoiding errors inherent in the copy-and-paste approach to reusing documents (e.g., by updating names and pronouns), as law firms

²⁰³ ROCKET MATTER, <http://www.rocketmatter.com> (last visited Aug. 12, 2014).

²⁰⁴ AMICUS ATTORNEY, <http://amicusattorney.com> (last visited Aug. 12, 2014).

²⁰⁵ *TimeMatters: Client, Case and Document Management Software*, LEXISNEXIS L. FIRM PRAC. MGMT., <http://www.lexisnexis.com/law-firm-practice-management/time-matters> (last visited Aug. 12, 2014).

²⁰⁶ CLIO, <http://www.goclio.com> (last visited Aug. 12, 2014).

²⁰⁷ See Stephanie L. Kimbro & Tom Mighell, *Popular Cloud Computing Services for Lawyers: Practice Management Online*, LAW PRAC. MAG. (Sept./Oct. 2011), http://www.americanbar.org/publications/law_practice_magazine/2011/september_october/popular_cloud_computing_services_for_lawyers.html; A.B.A., PRACTICE/CASE MGMT. SOFTWARE COMPARISON CHART FOR SOLO/SMALL FIRM, <http://www.americanbar.org/content/dam/aba/migrated/tech/ltrc/charts/pmtbchart.authcheckdam.pdf> (last updated June 26, 2012); ELAWYERING TASK FORCE, A.B.A., GUIDELINES FOR THE USE OF CLOUD COMPUTING IN LAW PRACTICE (Jan. 15, 2011), <http://meetings.abanet.org/webupload/commupload/EP024500/relatedresources/cloudcomputingguidelines05.30.2011.pdf> (alerting lawyers to risks associated with cloud-based practice management tools).

²⁰⁸ See, e.g., Richard Granat, *What Every Lawyer Should Know About Document Automation*, ELAWYERING BLOG (June 18, 2011, 9:20 AM), <http://www.elawyeringredux.com/2011/06/articles/webenabled-document-assembly/what-every-lawyer-should-know-about-document-automation> (describing web-enabled document automation platforms like Rapidocs, Exari, Brightleaf, and HotDocs).

know that everyone is using the same, updated templates.²⁰⁹ Document assembly can also enable automated, web-based services for clients who appreciate the efficiency of a self-help system.²¹⁰ After a (prospective) client completes a web-based form, the system will generate a draft document and deliver it to an attorney for analysis and proofreading.

Tools for automation have reached most service industries,²¹¹ and are increasingly critical to the efficient operation of a law practice, but only a minority of solo practitioners use them at all.²¹² Students need to learn why such tools are beneficial and which ones offer the best combination of functionality and affordability. Students should also consider the risks associated with storing confidential client information in the cloud.²¹³

Clinics offer a perfect environment to use case and practice management software because their activities are not contrived.²¹⁴ Clinics need the software to maximize efficiency of their own operations, and students use them as part of that operation. Students may be asked to record simple details—date, time spent, and type of activity undertaken—

²⁰⁹ See, e.g., *FYI: Document Assembly*, A.B.A. LEGAL TECH. RES. CENTER, http://www.americanbar.org/groups/departments_offices/legal_technology_resources/resources/charts_fyis/docassembly.html (last visited Aug. 12, 2014) (“The advantage that document assembly applications have over cutting [and] pasting is document consistency for all staff members. . . . When changes to the law are made, all relevant documents are updated accordingly and made available to all staff members so everyone is using the most current and relevant documents.”).

²¹⁰ See SUSSKIND, *supra* note 31, at 101 (“The potential for automated document assembly is often more readily acknowledged by non-lawyers than by lawyers.”).

²¹¹ See Granat & Kimbro, *supra* note 18, at 771 (“Almost every other professional service industry uses client portals to work with clients, including public relations firms, accounting firms, architectural firms, and management consulting firms.”).

²¹² See 2 ABA TECHNOLOGY SURVEY, *supra* note 141, at 44 (finding that case/practice management software is available for use in 35.9% of solo practices, and noting that document assembly software is available for use in 41.3% of solo practices).

²¹³ See, e.g., *Cloud Ethics Opinions Around the U.S.*, ABA, http://www.americanbar.org/groups/departments_offices/legal_technology_resources/resources/charts_fyis/cloud-ethics-chart.html (last visited Aug. 12, 2014); see Meghan C. Lewallen, Note, *Cloud Computing: A Lawyer’s Ethical Duty to Act with Reasonable Care When Storing Client Confidences “in the Cloud,”* 60 CLEV. ST. L. REV. 1133, 1146–56 (2013) (comparing state ethics opinions related to cloud computing).

²¹⁴ Chicago-Kent College of Law runs an Access to Justice Clinic in which students “build web tools and other interactive content to help low-income people achieve their justice goals.” Staudt & Medeiros, *supra* note 57, at 698. For instance, students develop HotDocs templates for later use by pro se litigants. *Id.* at 714.

in preparation for good billing and accounting practices in their professional lives.²¹⁵

One can also imagine the importance of knowledge management strategies in the context of any course with small-group work, simulated transactions, interviews, negotiations, or client counseling modules. Students can learn to save, organize, and share notes.²¹⁶ Teachers may also choose to create digital repositories of information for small-group exercises or any “closed universe” project.²¹⁷

VII. CONCLUSION

A principal critique of legal education focuses on its perceived disengagement with the profession: law schools are not preparing students to practice.²¹⁸ In response, law schools are becoming more experiential, engaged, simulation-based, and focused on active learning.²¹⁹ Law professors increasingly embrace new methods of teaching based on skills lawyers need in practice.

Understanding of, and facility with technology, is one of those skills, including negotiation, communication, and fact investigation. For lawyers, effective use of technology means new clients, stronger work product, and more efficient use of time; for law students, it means better job prospects and a smoother transition into practice. Technology is truly transforming the practice of law, so much so that the ABA now views attorneys’

²¹⁵ See MAHARG, *supra* note 98, at 212.

²¹⁶ See Johnson & Donnelly, *supra* note 19, at 736. “Notes written on paper work to keep knowledge locked in a tacit form (often obscuring full meaning even from the writer) and are rarely ever transferred into digital repositories in practice.” *Id.*

²¹⁷ See Musgrove & Thirlaway, *supra* note 56, at 66–67. Professors Musgrove and Thirlaway of the Faculty of Business and Law at Leeds Metropolitan University divided a class of 400 into small groups, each with access to online space for collaboration and discussion. *Id.* Documentation pertinent to the simulation was located in a central repository. *Id.* at 67. “The technology enabled [the class] to simulate the workplace environment more effectively than any other available means, and to meet the many challenges posed by the use of group work.” *Id.* Student groups were asked to use their virtual office spaces for all communication. *See id.* at 72. This approach reinforces the potential benefits of later search and retrieval of communications related to a matter.

²¹⁸ See, e.g., Segal, *supra* note 20, at A1 (“The essential how-tos of daily practice are a subject that many in the faculty know nothing about—by design.”).

²¹⁹ See CARNEGIE REPORT, *supra* note 93, at 119. “All this research points to the crucial role of practice experience in the development of expertise. Practice experiences need not be entirely ‘authentic,’ however. The value of simulation, for example, is increasingly recognized in legal education as in other fields . . .” *Id.*

understanding of the benefits and risks of technology as part of their competency.²²⁰ Under these circumstances, law schools should train students to understand, select, and use key technologies.²²¹

To date, the conversation about technology in law schools has mostly been limited to distraction of students, or to facilitation of other course objectives. Faculty biases against technology may explain, in part, the lack of attention within law schools to teaching technology skills. Although introducing an advanced, technology-oriented elective should be easily achievable, even better would be infusing important training throughout the curriculum. By doing so, we reach a larger audience in a way that provides context, while reinforcing doctrinal lessons.

This Article has suggested a few options for providing context-based technology training related to e-discovery,²²² presentation skills,²²³ communication and collaboration,²²⁴ marketing and social media,²²⁵ hardware and software,²²⁶ legal research,²²⁷ and case management.²²⁸ It is not intended as a comprehensive list, nor can it be given the pace of change. Most important is the school's acknowledgment of technology

²²⁰ See MODEL RULES OF PROF'L CONDUCT R. 1.1 cmt. 8 (1983).

It follows that[,] if law schools are charged with training law students to become competent lawyers[,] then law school curriculum must address the intersection of information technology and law practice. It must also provide law students with a basic understanding of how to assess the risks and benefits of technological advances.

Granat & Kimbro, *supra* note 18, at 764.

²²¹ See, e.g., Kenneth J. Hirsh & Wayne Miller, *Law School Education in the 21st Century: Adding Information Technology Instruction to the Curriculum*, 12 WM. & MARY BILL RTS. J. 873, 876 (2004).

We wish to contravene the assumption that law schools will have to be dragged into the twenty-first century. Law schools may not need to be the engine of technology integration, but they have an obligation to the profession and to themselves not to be a caboose with its brakes set.

Id.

²²² See *supra* Part VI.A.

²²³ See *supra* Part VI.B.

²²⁴ See *supra* Part VI.C.

²²⁵ See *supra* Part VI.D.

²²⁶ See *supra* Part VI.E.

²²⁷ See *supra* Part VI.F.

²²⁸ See *supra* Part VI.G.

skill as an important outcome, an end in itself, and its encouragement of teachers who will devote time and energy to necessary training.