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Teaching for Tomorrow: Utilizing Technology to Implement the Reforms of *MacCrate, Carnegie,* and *Best Practices*

Stephen Johnson

Mercer University Law School, johnson_s@law.mercer.edu

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Stephen M. Johnson*

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* Walter F. George Professor of Law, Mercer University Law School. B.S. (Comp. Sci.), J.D. Villanova University, LL.M. George Washington University School of Law. The author is a member of the Board of Directors of the Center for Computer-Assisted Legal Instruction (CALI).

I.   INTRODUCTION

More than a half century ago, famed educator John Dewey predicted that, "[I]f we teach today's students as we taught yesterday's, we rob them of tomorrow."[1] While Dewey was not referring to legal education, the legal education community has echoed his call for reform for decades.[2] Critics routinely assert that the "Socratic Method" and Christopher Columbus Langdell's "Case Method"[3] that are still employed by many law professors[4] fail to provide students with a variety of important skills that are necessary to practice law.[5] Further, critics argue that those traditional methods fail to adequately focus students on the important issues of professionalism in the practice of law.[6] Major studies by the American Bar Association (ABA), the Carnegie Foundation for the Advancement of Teaching, and the Clinical Legal Education Association concluded law schools need to reform legal education to provide more focus on training students in professionalism and practical skills.[7] The studies do not call for the elimination of the Case Method or Socratic Method, but they do stress the need for integration of new methods of instruction and assessment, especially after the first year of law school.[8] Curricular change tends to move glacially in academia, and fundamental changes in pedagogy arrive even more slowly, if at all. Nevertheless, many law schools have been reviewing their curricula and discussing and implementing at least some modest reforms in response to the most recent reports.[9]

Due to the nature of the students who are currently enrolled in or planning to attend law school, the economic realities of the modern practice of law, and the legal job market, technology needs to play a central role in the reform of legal education.[10] The reformed law school classroom will likely look significantly different than the traditional 1L Langdellian classroom. Simulations and other instructional methods that focus on developing skills will become more prevalent

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1. JOHN DEWEY, DEMOCRACY AND EDUCATION 167 (1944).

2. *See infra* Part II.

3. *See* Alton, *infra* note 16 and accompanying text.

4. *See* Garvey & Zinkin, *infra* note 16 and accompanying text.

5. *See* Garvey & Zinkin, *infra* note 16 and text accompanying notes 25–26.

6. *See infra* Part II.

7. *Id.*

8. *Id.*

9. Several schools have joined Educating Tomorrow's Lawyers*,* a consortium of schools that "[d]emonstrate[s] significant institutional commitment to legal education reform along the lines proposed in the . . . Carnegie Report" and "[o]ffer[s] multiple courses that implement the Carnegie approach to legal education and focus on student-centered teaching." *See* Inst. for the Advancement of the Am. Legal Sys., *Consortium Member Criteria*, EDUCATING TOMORROW'S LAW., http:// educatingtomorrowslawyers.du.edu/about-etl/about-our-consortium/consortium-member-criteria (last visited Sept. 21, 2012).

10. *See infra* Part II.

and technology will significantly enhance them.[11] Technology itself is an important skill that lawyers must master to effectively practice law.[12] Therefore, there will likely be additional focus in law schools on training students in the technology that is central to practice.[13] Educators will likely incorporate more formative assessment into courses, and technology will facilitate that.[14] Furthermore, professors will need new course books and materials to facilitate the new instructional models, and technology will be key to the development of successful and effective materials to replace the traditional materials.[15]

Part II of this article examines the development of the Langdellian method of instruction and the criticisms to the approach that have culminated in the calls for reform by the ABA, Carnegie Foundation, and Clinical Legal Education Association. Part II continues by focusing on the reasons why technology should play a central role in implementing the reforms petitioned by those organizations. The rest of the article provides examples of how technology can facilitate some of those reforms. Part III focuses on reforming assessment, the instructional models, and the instructional materials used in the classroom. Finally, Part IV explores the value of technological capabilities as skills in practice and the manner in which law schools might train students in those skills.

II.   BACKGROUND

A.   The Langdellian Model and Calls for Reform

At the end of the nineteenth century, Christopher Columbus Langdell, Dean of Harvard Law School, revolutionized law school pedagogy by introducing the Case Method of instruction.[16] Instead of simply learning and memorizing a series of rules from books of laws, students learning through the Case Method read selected common law appellate cases from a new generation of casebooks and dissected the cases to discover the general principles of law derived from them.[17] Law professors trained students to identify the important facts and distill

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11. *See infra* Part III.
12. *See generally* Jeffrey Allen, *Road Warrior: Technology for the Mobile Lawyer in All of Us*, 29 GPSOLO 6 (2012).
13. *See infra* Part II.B.3.
14. *See infra* Part III.
15. *See infra* Part III.C.
16. *See* AM. BAR ASS'N SECTION OF LEGAL EDUC. & ADMISSIONS TO THE BAR, REPORT OF THE TASK FORCE ON LAW SCHOOLS AND THE PROFESSION: NARROWING THE GAP 106 (1992) [hereinafter MACCRATE REPORT]; Stephen R. Alton, *Roll Over Langdell, Tell Llewellyn the News: A Brief History of American Legal Education*, 35 OKLA. CITY U. L. REV. 339, 341 (2010); John Burwell Garvey & Anne F. Zinkin, *Making Students Client-Ready: A New Model in Legal Education*, 1 DUKE F. FOR L. & SOC. CHANGE 101, 105 (2009).
17. *See* Garvey & Zinkin, *supra* note 16, at 105.

the holdings in the cases by asking students a series of direct questions in a dialogue commonly referred to as the Socratic Method.[18] The Case Method, together with the Socratic Method, quickly became the predominant method of law school instruction across the country.[19] Although new forms of pedagogy have significantly supplemented or replaced the Case Method in many law school classes, it still remains the predominant approach in first-year classes.[20] Supporters of the Case Method argue that it teaches students to think logically, critically, and carefully—or in other words, to "think like a lawyer."[21]

Despite its broad adoption within a relatively brief time period, the Case Method has been strongly criticized on a variety of grounds for almost as long as it has been utilized. Challenges to the pedagogy in the 1920s and 1930s came from the Legal Realists, who viewed law as an art, rather than a science.[22] Where Dean Langdell's approach encouraged students to view the common law rules as a value-free system of objective, black-letter rules that were scientifically discovered, the Legal Realists argued that legal principles are malleable and can be interpreted and applied to effect positive social change.[23] By urging academics to focus on the interrelationship between social policies and laws and on the impact the interpretation of laws can have on society, the Legal Realists began to move law faculty toward a greater focus on teaching the issues of professionalism and on the impact of lawyers' decisions in practice.[24]

Recently, critics have routinely complained that the Langdellian Method does not provide sufficient instruction in skills other than critical thinking, and therefore, it does not adequately prepare students for the practice of law.[25] While few reformers argue for a wholesale return to the system of apprenticeships that were the predominant precursor to a legal career in the early years of our nation, critics point out that apprenticeships provide valuable instruction in practical skills and help students understand that the major focus in a legal

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18. *Id.*; *see also* Carrie Menkel-Meadow, *Taking Law and _____ Really Seriously: Before, During and After "The Law,"* 60 Vand. L. Rev. 555, 562–63 (2007) (describing Langdell's numerous influences on modern legal education).

19. *See* Garvey & Zinkin, *supra* note 16, at 105.

20. *Id.*

21. *Id.*; *see also* Alton, *supra* note 16, at 351 ("The main argument in favor of the case method of instruction has been its ability to teach the skill of thinking like a lawyer . . . ."); Stephen J. Shapiro, *Teaching First-Year Civil Procedure and Other Introductory Courses by the Problem Method*, 34 Creighton L. Rev. 245, 247 (2000) (The benefits of this approach are said to be that it teaches students to read and think carefully, logically, and critically—i.e., to "think like a lawyer.").

22. *See* Alton, *supra* note 16, at 352–53.

23. *Id.*

24. *Id.* at 358–59.

25. *See* Garvey & Zinkin, *supra* note 16, at 106.

practice will be on clients, rather than case law.[26] Critics also complain that the Langdellian Method disproportionately alienates women and minorities and that a focus on any pedagogical method as the nearly exclusive method of instruction is unwise in light of students' diversity of learning styles.[27]

Although the Case Method remains a cornerstone of law school pedagogy, especially in first-year classes, several influential reports over the past twenty years have accelerated the adoption of alternative approaches to the Case Method.

1. *The* MacCrate Report

In 1992, the American Bar Association Task Force on Law Schools and the Profession issued *Legal Education and Professional Development*, a report that criticized law schools for failing to prepare students for the practice of law.[28] The Task Force on Law Schools, of which Robert MacCrate was the chair, spent three years preparing the report by surveying practicing lawyers and law professors.[29] The report is now commonly referred to as the *MacCrate Report*. It recommends reform of curricula and teaching methods to "systematically integrate the study of skills and values with the study of substantive law and theory."[30] It identifies ten fundamental lawyering skills, four fundamental values, and sixty-four recommendations for reform.[31] While the report stresses the importance of integrating instruction in these skills and values throughout the curriculum, it also stresses the importance of clinical legal education as a means of teaching skills and values.[32] Commentators suggest that the report has played a greater role in catalyzing clinical legal education than in prompting

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26. *Id.*; *see* Timothy W. Floyd, Oren R. Griffin & Karen J. Sneddon, *Beyond Chalk and Talk: The Law Classroom of the Future*, 38 Ohio N.U. L. Rev. 257, 258–59 (2011).

27. *See* Garvey & Zinkin, *supra* note 16, at 102–03, 106.

28. *See supra* note 16.

29. *See* MacCrate Report, *supra* note 16, at 385–95.

30. Ira Steven Nathenson, *Best Practices for the Law of the Horse: Teaching Cyberlaw and Illuminating Law Through Online Simulations*, 28 Santa Clara Computer & High Tech. L.J. 657, 669 (2012) (quoting MacCrate Report, *supra* note 16, at 128).

31. *Id.* The ten fundamental lawyering skills are: Problem Solving; Legal Analysis and Reasoning; Legal Research; Factual Investigation; Communication; Counseling; Negotiation; Litigation and Alternative Dispute Resolution Procedure; Organization and Management of Legal Work; and Recognizing and Resolving Ethical Dilemmas. *See* MacCrate Report, *supra* note 16, at 138–40. The four fundamental values are: Provision of Competent Representation; Striving to Promote Justice, Fairness and Morality; Striving to Improve the Profession; and Professional Self-Development. *Id.* at 140–41.

32. *See* Garvey & Zinkin, *supra* note 16, at 108, 111; Nathenson, *supra* note 30, at 669.

law schools to integrate the teaching of skills and values throughout the curriculum.[33]

2.　*The* Carnegie Report

Fifteen years after the *MacCrate Report* was issued, the Carnegie Foundation for the Advancement of Teaching issued a report entitled *Educating Lawyers: Preparation for the Profession of Law* (*Carnegie Report*).[34] The *Carnegie Report* found that few law schools had adopted the comprehensive reforms suggested by the *MacCrate Report*.[35] The authors of the report noted, "The relatively subordinate place of the practical legal skills, such as dealing with clients and ethical-social development in many law schools, is symptomatic of legal education's approach to addressing problems and framing remedies."[36] As a model for legal education, the report identifies three apprenticeships—cognitive, practical, and ethical-social—and calls upon law schools to integrate and marshal those apprenticeships "in support of the larger goal of training competent and committed practitioners."[37] Thus, like the *MacCrate Report*, the *Carnegie Report* urges law schools to integrate the teaching of law practice skills and professionalism.[38]

The *Carnegie Report* differs from the *MacCrate Report* in that it issues much stronger calls for reform of law school pedagogy and not simply reform of law school curricula and course content.[39] While the report applauds the success of the case dialogue method (Langdellian Method) in teaching legal analysis skills in the first year of law school, the report also stresses the need to employ multiple and diverse means of teaching to impart skills and values other than legal analysis.[40] The authors of the report note that the case-dialogue method does not encourage students to recognize the complexities of the actual situations in the cases, or the real people involved, and that the

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33. *Id.*

34. *See* WILLIAM M. SULLIVAN ET AL., EDUCATING LAWYERS: PREPARATION FOR THE PROFESSION OF LAW 6 (Carnegie Found. for the Advancement of Teaching ed., 2007) [hereinafter CARNEGIE REPORT].

35. *See* WILLIAM M. SULLIVAN ET AL., EDUCATING LAWYERS: PREPARATION FOR THE PROFESSION OF LAW: SUMMARY 7 (The Carnegie Foundation for the Advancement of Teaching ed., 2007) [hereinafter CARNEGIE REPORT SUMMARY], *available at* http://www.carnegiefoundation.org/sites/default/files/publications/elibrary_pdf_6 32.pdf (last visited Sept. 20, 2012).

36. *Id.*

37. CARNEGIE REPORT, *supra* note 34, at 28–29; Garvey & Zinkin, *supra* note 16, at 111; Nathenson, *supra* note 30, at 670.

38. *See* CARNEGIE REPORT SUMMARY, *supra* note 35, at 8.

39. *See* Judith Welch Wegner, *Reframing Legal Education's "Wicked Problems*," 61 RUTGERS L. REV. 867, 889 (2009).

40. *See* CARNEGIE REPORT SUMMARY, *supra* note 35, at 4–5; Wegner, *supra* note 39, at 890–91.

method does not encourage students to explore the social needs or matters of justice inherent in the cases.[41] As one alternative, the authors note that other professional schools frequently employ case studies and simulations to engage the moral imagination of students, while developing practical skills.[42]

The *Carnegie Report* also criticizes law schools for their almost exclusive focus on summative assessment and encourages schools to make formative assessment "a primary form of assessment in legal education."[43]

Finally, the report stresses the need for closer integration of clinical and doctrinal courses and faculty.[44] The authors note, "[D]octrinal faculty will probably make the more significant pedagogical discoveries as they observe or participate in the teaching of lawyering courses and clinics, and we predict that they will take these discoveries back into doctrinal teaching."[45]

3. Best Practices

In the same year that the Carnegie Foundation issued its report, the Steering Committee for the Best Practices Project of the Clinical Legal Education Association (CLEA) issued *Best Practices for Legal Education* (*Best Practices*).[46] That report concludes that "most law schools are not committed to preparing students for practice" and recommends that law schools "make a commitment to improve" in that area.[47] Like the *Carnegie Report*, *Best Practices* urges law schools to integrate the teaching of doctrine, skills, and professionalism and to reform instructional methods to facilitate the teaching of practical skills and professionalism.[48] Specifically, the authors of the report recommend that law schools reform assessment methodologies and adopt "best practices for assessing student learning, including criteria referenced assessments, multiple formative and summative assessments, and various methods of assessment."[49] The report also recommends that law schools "employ context-based instruction throughout the program of instruction and employ best practices when using any

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41. *See* CARNEGIE REPORT SUMMARY, *supra* note 35, at 5–6.
42. *Id.* at 6; Nathenson, *supra* note 30, at 670.
43. *See* CARNEGIE REPORT SUMMARY, *supra* note 35, at 7. The report notes that summative assessment sorts and selects students while formative assessment focuses on supporting students in learning. *Id.*
44. *Id.* at 9.
45. *Id.*
46. ROY STUCKEY ET AL., BEST PRACTICES FOR LEGAL EDUCATION: A VISION AND A ROAD MAP (2007) [hereinafter BEST PRACTICES]., *available at* http://law.sc.edu/faculty/stuckey/best_practices/best_practices-full.pdf (last visited Sept. 21, 2012).
47. *Id.* at 5.
48. *Id.* at 6.
49. *Id.*

instructional methodology."[50] Further, the report calls on law schools to articulate clear educational objectives for their programs, to share them with their students, and to use teaching methods that most effectively and efficiently achieve those objectives.[51] Unlike the other reports, *Best Practices* explicitly recognizes the important role that technology can play in enhancing the quality of educational programs.[52]

B. The Central Role of Technology in the Reform of Law School Pedagogy

Several common themes run through the *MacCrate*, *Carnegie*, and *Best Practices* reports. All of the reports recommend a greater focus on teaching skills and professionalism and an integration of those topics into the teaching of doctrine. In support of the broader focus on skills and professionalism, the *Carnegie Report* and *Best Practices* urge law schools to diversify teaching methods by incorporating simulations and other methods, while de-emphasizing the Langdellian Method after the first year. Both reports also call on schools to reform the means of assessing students. It is clear that law schools will require new tools to make the changes envisioned by the *MacCrate*, *Carnegie*, and *Best Practices* reports. For several reasons outlined in this section, technology must be central to the transformation. Technology must play a central role because (1) it provides a vital way to connect with the students from Generations X and Y that dominate the student body at most law schools; (2) appropriate use of technology can relieve economic pressures in implementing these reforms; (3) technology can facilitate access to new learning experiences for all students, regardless of disabilities or learning styles; and (4) technology is itself a skill that must be mastered in order to practice law in the twenty-first century. Technology will not replace the traditional law school classroom in this transformation, but it must play an integral role in the implementation of new teaching methods and means of assessment required for the transformation.

1. Gen-Xers, Millennials, and Technology

For the next fifteen or twenty years, most law students will be members of Generation X or Generation Y (Millennial Generation).[53]

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50. *Id.*

51. *Id.* at 5–6. "Descriptions of desired outcomes . . . should include statements of what graduates should know, what they should be able to do, and how they should do it." *Id.* at 6. The report also recommends that law schools evaluate the effectiveness of their programs in achieving the educational outcomes. *Id.* at 7.

52. *Id.*

53. *See* Eric DeGroff, *Training Tomorrow's Lawyers: What Empirical Research Can Tell Us About the Effect of Law School Pedagogy on Law Student Learning Styles*,

Most students in those generations are "digital natives," having never lived in a world without personal computers.[54] Technology is enmeshed in their daily lives.[55] Their facility with technology alone could be sufficient reason to put technology at the forefront of the transformation in legal education pedagogy. When students have been surveyed about their experiences with technology in law school, including the use of audience response systems (clickers), laptops, or electronic simulations, they have been routinely very supportive of the use of technology.[56]

However, it is not simply the facility with technology among Generations X and Y that should prompt law schools to focus on technology in transforming teaching and assessment methods. It is the impact technology has already had on the learning styles of Gen-Xers and Millennials that should be the driving force behind the focus on technology in the transformation. Computers and the Internet have been integrated into the educational experiences of students in Generations X and Y from their earliest days in primary school.[57] Students are accustomed to having instant access to information.[58] Accordingly, researchers suggest that they are less likely to have mastered previous learning primarily through books and "are more likely to be visual learners and holistic, right-brained thinkers, rather than sequential, logical thinkers."[59] Traditional law school pedagogy has predominantly targeted verbal learners, rather than visual learners.[60] Research also suggests that students in Generations X and Y are less adept than previous generations at organizing and synthesizing information and have developed a passive relationship to information—a consumer mentality.[61] In addition, research suggests that students in

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36 S. ILL. U. L.J. 251, 251 (2102); Kristen E. Murray, *Let Them Use Laptops: Debunking the Assumptions Underlying the Debate over Laptops in the Classroom*, 36 OKLA. CITY U. L. REV. 185, 195 (2011). Generation X includes students born from 1961–1981, while Generation Y includes students born between 1982–2000. *See* Wegner, *supra* note 39, at 988.

54. *See* Murray, *supra* note 53, at 195.

55. *Id.*

56. *See, e.g.*, Roger C. Park, *Reflections on Teaching Evidence with an Audience Response System*, 75 BROOKLYN L. REV. 1315, 1318 (2010) (Ninety-seven percent of the students surveyed indicated that clickers were beneficial to their learning.); Murray, *supra* note 51, at 212–13 (Seven-six percent of the students surveyed indicated that bringing laptops to classes increased, or at least did not decrease, their participation in class.); Karen Barton et al., *Authentic Fictions: Simulation, Professionalism and Legal Learning*, 14 CLINICAL L. REV. 143, 183–85 (2007).

57. Murray, *supra* note 53, at 196–97; *see* Floyd et al., *supra* note 26, at 274.

58. *See* DeGroff, *supra* note 53, at 252–53.

59. *Id.*; *see also* Wegner, *supra* note 39, at 990 ("[A]s young people spend ever less time reading, faculty members who rely primarily on assigning casebook reading and analysis are likely to find that students are disengaged as a result.").

60. *See* Murray, *supra* note 53, at 197.

61. *See* DeGroff, *supra* note 53, at 252–53.

these generations are rabid multitaskers, even in the classroom.[62] Since the learning styles of many of the students in Generations X and Y have been forged through technology, it would seem to be beneficial to incorporate technology more fully into law school pedagogy to fit those students' learning styles, rather than requiring students to try to modify their learning styles to fit the mold of the traditional law school pedagogy.

There are other traits that Millennials share that could make technology a particularly effective teaching tool. According to many researchers, including William Strauss and Neil Howe, persons who live during particular time periods generally share common experiences at certain times of their lives; accordingly, those individuals share similar assumptions, values, behaviors, and challenges as others living in their generation.[63] Strauss and Howe posit that society moves through a cycle of four different prototypes of generations over time and that the Millennials fit within the civic-minded "hero" generational prototype.[64] Strauss and Howe conclude that Millennials share seven personality traits.[65] While Millennials see themselves as special, they are sheltered, as well as confident, team-oriented, pressured, conventional, and focused on achievement.[66] Researchers have found that in the classroom, Millennials expect to do well, but they also expect detailed guidance and feedback.[67] In addition, they work well on collaborative projects and prefer regular and frequent communication and interconnectivity.[68] Professor Judith Wegner warns that faculty will need to be particularly attentive to helping Millennials develop a professional identity in light of "limited prior experience in shaping their own expectations, educational and professional paths."[69] As outlined in detail below, technology can play a vital role in providing the guidance and feedback that Millennials seek and in fostering collaborative and connected learning, as well as modeling professionalism.[70]

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62. *Id.* at 253.

63. *See* Wegner, *supra* note 39, at 988.

64. *Id.*

65. *Id.* at 988–89; *see also* Murray, *supra* note 53, at 197 (listing the personality types).

66. *See* Wegner, *supra* note 39, at 988–89; Murray, *supra* note 53, at 197. According to Professor Judith Wegner, parental relationships play a significant role in fostering many of these personality traits in Millennials. For instance, she suggests that Millennials see themselves as special because they have been "treasured" by their parents, who provided them with constant positive feedback. *See* Wegner, *supra* note 39, at 988. At the same time, she indicates that they are sheltered because their parents continually protected them and advocated for them. *Id.*

67. *See* Wegner, *supra* note 39, at 990; Floyd et al., *supra* note 26, at 274–75.

68. *See* Murray, *supra* note 53, at 197.

69. *See* Wegner, *supra* note 39, at 991.

70. *See infra* Parts II–III.C.

While the research regarding Millennials is instructive in developing teaching methods that optimize learning for those students, it should also be noted that a small amount of the research regarding Millennials and learning focuses on law students. Accordingly, it is helpful to explore adult learning theory in constructing new teaching models to achieve the goals of *MacCrate*, *Carnegie*, and *Best Practices*. Malcolm Knowles, a pioneer in adult learning research, suggested that adult learners share various characteristics, including: (1) they are autonomous and self-directed; (2) they need to connect the material they are learning to their life experiences and knowledge; (3) they need to know the goals of educational programs and how those goals will help them achieve their own goals; (4) they need to know how the material and skills they are learning will be relevant and useful to them in their daily lives.[71] Active, experiential, and collaborative learning can address those needs and build on those characteristics.[72] As Professor Tim Floyd and several of his colleagues concluded in a recent article, "[S]tudents learn best when their learning is self-regulated and their autonomy is supported."[73] As outlined below, technology can play a central role in implementing active, experiential, and collaborative learning activities, as well as providing students with autonomy to direct their own learning experiences.[74]

Research in learning theory also suggests that there are benefits to incorporating more active, experiential, and problem-based instruction into law school pedagogy.[75] Although much of the discussion above regarding Millennials and adult learners treats those groups as monolithic, students within those groups have a variety of learning styles and preferred ways of thinking, processing, and understanding information.[76] As Professor Eric DeGroff notes, learning styles encompass the ways that individuals perceive and absorb new information and the ways that they process and catalog new information.[77] Researchers generally agree that differences in learning styles have significant consequences for how successful people are in various educational environments.[78] David Kolb, a prominent learning theorist, asserts that there are four stages to the learning process, including:

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71. *See* Floyd et al., *supra* note 26, at 264–65.

72. *Id.* at 266.

73. *Id.* at 267.

74. *See infra* Parts III–III.C.

75. *See* DeGroff, *supra* note 53, at 253–54, 280. Professor DeGroff includes, within these categories of instruction, "opportunities for active learner-centered instruction with the material through work in small groups, writing assignments, role playing or problem solving exercises—combined with frequent opportunities for evaluation and feedback . . . ." *Id.* at 280.

76. *Id.* at 258–59.

77. *Id.* at 258.

78. *Id.* at 259.

(1) [A]n experience that exposes the learner to a new concept or new information . . . ; (2) subsequent reflection on, or review of, that experience in order to better understand it . . . ; (3) drawing conclusions about the experience and properly cataloging it along with prior knowledge or experiences . . . ; and (4) doing something with the experience, such as planning the next step or applying what was learned in a problem-solving context . . . .[79]

Kolb and others argue that learning is most effective when it involves all four stages.[80] Kolb suggests that persons will feel more comfortable in various stages of the learning process depending on their individual learning style, and he identifies four different learning styles: (1) Assimilators; (2) Convergers; (3) Accommodators; and (4) Divergers.[81] Kolb and others also argue that students are capable of becoming more proficient in all stages of the learning process, but their ability to master those other stages is enhanced if they are introduced to the learning process in a way that matches their learning style.[82] Thus, the ideal classroom experience would provide some way for students of each learning style to make the initial connection to the learning process through the style that is most comfortable for them.[83]

Unfortunately, the traditional 1L classroom provides very little diversity in teaching methods. Although many law students have learning styles that prefer abstract conceptualization (Assimilators and Convergers), which is central to the traditional Langdellian Method, a substantial minority of 1L students begin their law school careers with a low preference for abstract conceptualization (Divergers or Accommodators) and may not survive the first year of law school or may finish the year in poor academic standing.[84] Students in those groups "share a preference for concrete experiences as a means of mastering new concepts, and . . . tend to learn best through hands-on experiences including group projects, simulation, experimentation and the use of imaginative thinking."[85] Consequently, a classroom experience that provides opportunities for active, experiential, collaborative learning, in addition to abstract learning, would likely provide a gateway to the learning process for the students who are not as comfortable entering the learning process through the abstract conceptualization gateway.[86] Based on an experiment in a Civil Procedure class involving 1L students that implemented experiential learning techniques and

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79. *Id.* at 265.
80. *Id.*
81. *Id.* at 267.
82. *Id.* at 266–267. Some learning theorists argue, though, that learning styles are stable and that students cannot develop or strengthen alternative learning styles in adulthood. *Id.* at 259.
83. *Id.* at 267.
84. *Id.* at 267–68.
85. *Id.* at 268.
86. *Id.*

students in classes that did not, Professor DeGroff concluded, "[A]n experiential approach in the classroom may help enhance the development of law students' analytical skills."[87] To the extent that learning theory supports the integration of active, experiential, and collaborative learning into legal education, technology can facilitate that.[88]

2. Economics and Accessibility

While technology can provide a bridge to connect with students in Generations X and Y, there are other reasons why it should play a central role in implementing the recommendations of MacCrate, Carnegie, and *Best Practices* reports. Specifically, technology can reduce the cost of implementing some of the recommendations and can promote universal access to the new learning experiences to all students, including students with disabilities.

As noted above, the MacCrate, Carnegie, and *Best Practices* reports all stress the importance of training law students in the skills required for practice.[89] While the reports recognize the value of clinics in providing that training, and encourage opportunities for clinical instruction, in-house clinics are very expensive, as they require faculty, support staff, and physical space, yet generally limit enrollment to a dozen or fewer students.[90] Although skills courses at law schools generally have higher enrollments than clinics, they are also expensive because they are taught in small sections.[91]

In lieu of expanding clinics to meet the goals of the *MacCrate*, *Carnegie*, and *Best Practices* reports, law schools could expand their skills courses and expand the use of simulations in courses generally. Schools have begun to develop and implement computerized simulations, which can allow a significantly greater number of students to develop skills and receive feedback on those skills than clinics and can do so at a much lower cost.[92] Clearly, the experience will be inferior to

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87. *Id.* at 285. Professor DeGroff's experiment focused on 149 first-year law students at Regent Law School in the class that entered the school in the fall of 2007. *Id.* at 270. Half of the students took Civil Procedure from professors who incorporated experiential learning practices into their teaching. *Id.* at 271. The other half of the class took Civil Procedure from professors who were "widely recognized at the school for their teaching excellence, but were more Socratic in their approach." *Id.* at 272. Professor DeGroff assessed the students' learning styles before the fall semester began and at the end of the spring semester, using a test (the LSI) originally developed by David Kolb in 1976. *Id.*

88. *See infra* Parts III–III.C.

89. *See supra* section II.A.

90. *See* Robert C. Illig et al., *Teaching Transactional Skills Through Simulations in Upper Level Courses: Three Exemplars*, 9 TRANSACTIONS 15, 18 (2009); Nathenson, *supra* note 30, at 668.

91. *See* Gary A. Munneke, *Managing a Law Practice: What You Need to Learn in Law School*, 30 PACE L. REV. 1207, 1225 (2010).

92. *See infra* subsection III.B.2.b.

a live clinic, but it can be a valuable academic experience with a much lower price tag nonetheless. In the same way, technology can be used to make it easier for faculty teaching skills courses to record and assess the performances of students in those classes.[93] Computerized tutorials, interactive problem-solving exercises, and online assessment could be incorporated into skills courses, as well.[94] All of these suggestions may make it easier to increase enrollment limits in those courses, reducing the cost of delivery. While cost savings should never drive pedagogical choices, technology should be embraced in the delivery of education if it enhances the educational experience or provides for the effective delivery of the experience to a wider audience.

Technology should also be embraced in the implementation of the MacCrate, Carnegie, and *Best Practices* reforms because it can facilitate universal access to the reforms. Recent studies suggest that almost ten percent of first-year college students have physical or learning disabilities, and law schools have experienced significant increases in the number of students with disabilities, as well.[95] In a recent article, Professors Douglas Rush and Suzanne Schmitz describe the value of "universal instruction design," which focuses on developing an academic program "to reach all . . . students in an inclusive format," regardless of disabilities or differences in learning styles.[96] Universal instruction design focuses on developing an educational program that promotes accessibility in all aspects, including class climate, interaction, physical environment, delivery methods, information resources, feedback, and assessment.[97]

Technology is central to effective "universal instruction design."[98] For instance, with regard to delivery methods, "universal instruction design" promotes the use of multiple methods of delivery, including lectures, collaborative exercises, practical skills exercises, and interactive and online instructional methods to accommodate different learning styles or disabilities.[99] Professors Rush and Schmitz point out that even a Socratic dialogue can be made more accessible through the use of technology if it is coupled, at the beginning or end of class, with a summary or outline of key concepts that are presented on

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93. *See infra* section III.B.1.

94. *See* Munneke, *supra* note 91, at 1213; *see also infra* Parts III–IV (describing how methods can be applied in a law school setting).

95. *See* Douglas K. Rush & Suzanne J. Schmitz, *Universal Instructional Design: Engaging the Whole Class*, 19 WIDENER L.J. 183, 184 (2009).

96. *Id.* at 185, 188–89. Traditionally, students with disabilities have been "accommodated," rather than included. *Id.* at 189.

97. *Id.* at 189.

98. *See generally id.* (explaining that professors should use multiple kinds of technology to engage different kinds of learners).

99. *Id.* at 190.

PowerPoint slides or posted online.[100] Similarly, posting audio, video recordings, or podcasts of a class online can help students with a broader range of learning styles or disabilities understand and process the material covered in the class.[101] With regard to instructional materials, universal instruction design encourages faculty to select course materials early so that students have an opportunity to obtain the materials in their preferred format at a preferred time and to recognize the value of materials that are available in digital formats.[102] Digital versions of materials can be easily manipulated with other technology to be made accessible to students with physical disabilities.[103] Regarding assessment, universal instruction design requires faculty to set and articulate clear and consistent standards to students in advance and to provide students with multiple ways to demonstrate knowledge of a course's content by giving students assessments in multiple formats and incorporating group projects, demonstrations, and class presentations or participation.[104] As noted below, technology can play a vital role in implementing reforms to assessment methodologies in law schools.[105]

3.   Technology as a Practice Skill for Lawyers

In addition to the other reasons outlined above, technology should be utilized heavily in implementing the *MacCrate*, *Carnegie*, and *Best Practices* reforms because technological skills are themselves becoming vital skills for the practice of law.[106] The *MacCrate Report* identifies "organization and management of legal work" as fundamental lawyering skills.[107] Technology is essential for the organization and management of legal work in the modern legal practice, from areas as diverse as billing and document management, to electronic communication and electronic dispute resolution used to develop effective evidentiary tools for litigation.[108] The *Carnegie Report* and *Best Practices* also stress the importance of training students in the broad range of skills required for practice.[109] The economics of the current legal marketplace also heighten the need for technological training of law students. As Professor Tim Floyd and others have noted, "The

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100. *Id.* at 198–199.

101. *Id.* at 199–200. Some professors believe that students may not attend class if a recording of the class is available. *Id.* at 199.

102. *Id.* at 190–91, 196.

103. *Id.* at 196–97.

104. *Id.* at 191–92.

105. *See infra* subsection III.A.i.

106. *See infra* Part IV.

107. *See* Nathenson, *supra* note 30.

108. *See infra* Part IV.

109. *See* CARNEGIE REPORT, *supra* note 34 and accompanying text; BEST PRACTICES, *supra* note 46 and accompanying text.

practice of law is changing. Under growing pressure to do more with less, lawyers will use technology not only to streamline and automate existing processes but to invent new ones."[110] Consequently, as new lawyers enter the marketplace, employers will expect increasingly sophisticated technological skills from new attorneys.[111]

III.   CALLS FOR REFORM

A.   Reforming Assessment

Even today, in many law school courses, the only means of assessment for the course may be a single exam at the end of the semester.[112] Faculty may choose that approach because designing and evaluating multiple assessment instruments throughout the semester can be time-consuming for the faculty member and the students.[113] In addition, to the extent that the assessment instruments are administered during normal class periods, there will be less time to cover other material, so the scope of coverage in the course may be reduced.[114]

Despite those justifications, numerous studies in other disciplines have found that students learn better if they are given multiple assessments—summative and formative—and feedback throughout the semester rather than a single exam at the end of the semester.[115] Even if the multiple assessments and feedback do not improve learning, multiple summative assessment events will give faculty "an opportunity to grade students on a broader range of knowledge and skills," enabling faculty to more accurately evaluate the students' ac-

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110. *See* Floyd et al., *supra* note 26, at 275.

111. Professor Floyd and his colleagues note that modern law firm practices, including flat-rate billing and outsourcing of certain activities, have reduced the opportunities for on-the-job training for new attorneys and increased the need for new attorneys who have more finely tuned skills in all practice areas, including technology. *Id.* at 275–76.

112. *See* Andrea A. Curcio, *Moving in the Direction of* Best Practices *and the* Carnegie Report*: Reflections on Using Multiple Assessments in a Large-Section Doctrinal Course*, 19 WIDENER L.J. 159 (2009).

113. *Id.* at 159–60, 174–76*; see also* Emily Zimmerman, *What Do Law Students Want?: The Missing Piece of the Assessment Puzzle,* 42 RUTGERS L.J. 1, 3, 12–13 (2010) (explaining that many law schools have started to review their educational programs and discussing the addition of more assessment events); Curcio, *supra* note 112, at 167–68. Professor Andrea Curcio notes that the approach has also been supported "on the grounds that it forces students to synthesize material and . . . it simulates law practice." *See* Curcio, *supra* note 112, at 159–60.

114. *See* Curcio, *supra* note 112, at 172.

115. *Id.* at 160; *see also* Zimmerman, *supra* note 113, at 10 (criticizing the use of summative assessment in law schools). *But see* Curcio, *supra* note 112, at 177–78 (noting that there is "little hard evidence that multiple assessments . . . actually improve law students' learning" and calling upon faculty to study and write about this issue).

tual mastery of the material in the class.[116] Studies also suggest that performance-based assessment instruments may be more useful in teaching students about the connection between theory and its application in practice.[117] These are just some of the reasons why the *Carnegie Report* and *Best Practices* urged law schools to provide more assessment opportunities for students and to provide formative assessment opportunities in addition to summative assessment opportunities.[118] The American Bar Association, the accrediting body for law schools, is also developing amendments to its accreditation standards that address assessment and institutional effectiveness.[119] The draft standards would require law schools to "utilize a variety of formative and summative assessment methods in [their] curriculum[s] to measure and improve student learning and provide meaningful feedback to students."[120]

Student preferences regarding assessment provide an additional impetus for the expansion of formative and summative assessment events in law schools. If students preferred a single summative assessment event, they might not be receptive to multiple formative and summative assessment events, and to the extent that they have a choice regarding course selection, they might choose elective courses based on their preferred mode of assessment.[121] However, in studies within and outside of the law school setting, students frequently express a preference for multiple assessment events, either formative or summative, rather than a single exam.[122] This suggests that many students may welcome the reforms recommended by the *Carnegie Report*, *Best Practices*, and the *MacCrate Report*. However, students cannot be treated as a single monolithic entity. Within each class, students may have a variety of preferences regarding the frequency and

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116. *See* Zimmerman, *supra* note 113, at 11–12.

117. *See* Curcio, *supra* note 112, at 160.

118. *See supra* text accompanying notes 43 and 49; Zimmerman, *supra* note 113, at 11–12.

119. *See* ABA Section of Legal Educ. & Admissions to the Bar, Standards Review Comm., *Redline—Draft for July 2012 Meeting* 27 (2012) [hereinafter *Redline*], *available at* http://www.americanbar.org/content/dam/aba/migrated/2011_build/legal_education/committees/standards_review_documents/July2012/201207_src_meeting_materials.authcheckdam.pdf (last visited Sept. 23, 2012); *see also* Zimmerman, *supra* note 113, at 3. For historical background regarding the ABA's role in setting standards for law schools, see Garvey & Zinkin, *supra* note 16, at 104–05; Alton, *supra* note 16, at 349.

120. *See Redline*, *supra* note 119, at 18. The proposal clarifies, though, that the standard would not require every course to include multiple means of assessment. *Id.* at 19.

121. *See* Zimmerman, *supra* note 113, at 5–7.

122. *Id.* at 27–28; *see also* Curcio, *supra* note 112, at 161 (describing the reaction of her Civil Procedure students to a series of summative assessment activities that she substituted for a single end-of-semester exam).

type of assessment events.[123] Thus, to the extent students may oppose an increase in the frequency or type of assessment events, faculty should take care to explain the pedagogical reasons for their choices regarding assessment methodologies.[124]

1.　The Technological Tools for Reform

Insofar as law faculties choose to expand formative and summative assessment, technological resources are already in place to facilitate that expansion. Since 1982, the Center for Computer-Assisted Legal Instruction (CALI) has been publishing computerized tutorials and lessons for law schools.[125] CALI now distributes almost one thousand lessons in forty-six different areas of the law.[126] The lessons, written by law professors and law librarians, can be run over the Web and delivered across multiple platforms.[127] In addition to the traditional substantive areas of law, the lessons cover professionalism and many skill areas, including legal research, legal writing, legal analysis, statutory interpretation, and trial advocacy.[128] The lessons are available to students at any law school that is a member of CALI. Currently almost every law school in the United States is a member.[129] A typical lesson provides students with background information about the legal topic covered in the lesson and then provides the student with a series of questions based on fact patterns presented in the lessons.[130] Although most of the questions are multiple-choice questions, some lessons include short answer or essay questions.[131] Many of the les-

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123. *See* Zimmerman, *supra* note 113, at 5, 52–53, 55–56, 59–61 (noting that a two-year survey of law students at her school demonstrated that (1) students varied in their preferences regarding the frequency and type of assessment events when surveyed at the beginning of their first year of law school; and (2) many students changed their preference regarding the frequency and type of assessment events by the end of their first year of law school).

124. *Id.* at 64–65. Proponents of "adaptive assessment" would argue, alternatively, that students should be given a choice regarding assessment and should be assessed according to their preferred method of assessment. *Id.* at 56.

125. *See About CALI*, CALI (July 15, 2011, 2:59 PM), http://www.cali.org/content/about-cali.

126. *See CALI Lessons Home*, CALI, http://www.cali.org/lesson (last visited Sept. 23, 2012).

127. *See CALI Lessons*, CALI, http://www.cali.org/content/cali-lessons (last visited Sept. 23, 2012). CALI lessons can be run on iPhones and iPads, as well as computers. *Id.*

128. *See CALI Lessons Home*, *supra* note 126.

129. There are currently 208 law schools that are members of CALI. *See CALI Members and Affiliates Contact Information for Authorization to Access CALI Resources*, CALI, http://www.cali.org/contacts (last visited Sept. 23, 2012).

130. *See Determining the Length of a Lesson or Tutorial and Deciding What a Lesson Should Cover*, CALI (Sept. 14, 2009, 3:04 PM), http://www.cali.org/content/9-determining-length-lesson-or-tutorial-and-deciding-what-lesson-should-cover.

131. *See CALI Author Page Types*, CALI (Sept. 9, 2009, 3:12 PM), http://www.cali.org/content/10-cali-author-page-types.

sons branch and ask students different questions depending on the responses given by the student, allowing the student to explore areas of weakness in greater depth.[132] Thus the lessons can be a valuable tool for providing feedback for formative assessment purposes. In addition, most lessons record the number of correct answers provided, allowing the lessons to be used for summative assessment.[133] Even though instructors may not be utilizing the lessons for assessment purposes at this time, students are finding and using the lessons.[134] CALI records show more than a million lesson runs by students each year.[135]

While CALI currently distributes almost one thousand lessons, it is always possible that faculty members may be interested in assessing students on topics not covered by one of the existing lessons or may be interested in taking a different approach toward assessing students on a topic that is covered by one of the CALI lessons. To facilitate the development of additional materials, CALI makes an open-source software program, CALI Author, available to faculty at all member law schools.[136] With the program, faculty members can develop their own computerized lessons to distribute to the students in their courses or to make available for students throughout the world.[137] The software is easy to use, enabling professors to create simple lessons within a few hours, but also powerful in that it allows those professors to incorporate text, images, video, audio, charts, and tables into their lessons.[138] It also allows professors to create a teaching manual for the lesson by leaving teaching notes in the lesson that

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132. *See Reasons to Create Interactive Materials*, CALI (Sept. 17, 2009, 2:00 PM), http://www.cali.org/content/2-reasons-create-interactive-materials.

133. *See Reasons to Create Interactive Materials*, CALI, *supra* note 132. Professors can easily track students' usage and scores on lessons using CALI's "Lesson-Link." *See CALI Lessons*, CALI, *supra* note 127. In addition to assessment purposes, faculty may choose to use CALI lessons to expand on topics briefly covered in class or to teach fundamental background concepts in preparation for a class, allowing the class to focus on deeper issues or application of the material in practice. *Id.*

134. *See About CALI*, *supra* note 125.

135. *Id.*

136. *See CALI Author*, CALI (July 23, 2009, 4:39 PM), http://www.cali.org/caliauthor.

137. *See Exporting a Lesson to the Web*, CALI (Sept. 17, 2009, 3:37 PM), http://www.cali.org/content/23-exporting-lesson-web. CALI affiliates include thirty-seven international law schools. *See CALI Members and Affiliates Contact Information for Authorization to Access CALI Resources*, CALI, *supra* note 129.

138. *See Selecting an Authoring Tool*, CALI (Sept. 14, 2009, 2:00 PM), http://www.cali.org/content/3-selecting-authoring-tool. CALI also provides faculty with an online author guide that explains the rationales for developing online lessons and walks authors through the process of designing and creating a lesson. *See Author Guide*, CALI (Sept. 14, 2009, 1:58), http://www.cali.org/content/cali-author-guide.

are only visible to instructors.[139] The software also allows instructors to modify existing lessons that CALI distributes, so that the instructors have the flexibility to design an assessment tool that meets their objectives.[140]

Even if faculty members do not choose to use or develop CALI exercises for purposes of assessment, technology can facilitate expanded assessment in other important ways. For instance, over the years, teams of instructors across the country have developed course-specific multiple-choice question banks or exam banks on an ad hoc basis.[141] Technology facilitates the creation of and access to those materials by instructors, and security controls can be implemented to facilitate, but also limit, access to those materials across the Internet.[142] It is likely that such collaboration may increase if there are pressures to increase the frequency and type of assessment events in law school courses. Even if faculty members are not sharing exams, but are simply developing and administering their own assessment instruments, technology platforms such as TWEN,[143] Blackboard,[144] ExamSoft,[145] Electronic Bluebook,[146] and Extegrity[147] streamline administration and grading of those assessment instruments.

As noted above, formative and summative assessment incorporate more than simply multiple-choice, short answer, and essay exams or quizzes.[148] Assessment instruments could include writing assignments, moot court, role-playing exercises such as oral or trial advocacy

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139. *See Can I Leave Teaching Notes to My Colleagues in the Lesson?*, CALI (Sept. 21, 2009, 12:58 PM), http://www.cali.org/faq/7966.

140. *See Can I Modify an Existing Cali Lesson and Then Post My Modified Version on the Internet?*, CALI (Sept. 21, 2009, 12:53 PM) http://www.cali.org/faq/7963.

141. *See, e.g.*, *Examinations and Grades*, AM. HEALTH LAW. ASS'N, http://www.health lawyers.org/hlresources/Academics/LawProfessors/Pages/ExaminationsandGrad es.aspx (last visited Sept. 23, 2012) (exam bank for health law administered by Professor Sidney Watson at Saint Louis Law School); *Taxprof: Resources for Law School Tax Professors*, U. CIN. C. L., http://taft.law.uc.edu/taxprof/ (last visited Sept. 23, 2012) (exam bank for tax law administered by Professor Paul Caron at Cincinnati Law School); Linda R. Crane, *Grading Law School Examinations: Making a Case for Objective Exams to Cure What Ails "Objectified" Exams*, 34 NEW ENG. L. REV. 785, 802 (2000).

142. Most of the exam banks referenced in the preceding note are accessible over the Internet.

143. *See TWEN Resources*, THOMSON REUTERS WESTLAW, https://lawschool.westlaw. com/shared/signon10.asp?path=%2ftwen%2fdefault.aspx (last visited Sept. 23, 2012).

144. *See* BLACKBOARD, http://www.blackboard.com/ (last visited Sept. 23, 2012).

145. *See* EXAMSOFT WORLDWIDE, http://www.examsoft.com/main/index.php (last visited Sept. 23, 2012).

146. *See EBB Electronic Bluebook*, COMPUTEST, http://electronicbluebook.com/ (last visited Sept. 23, 2012).

147. *See Exam 4 Exam Software*, EXTEGRITY, http://www.exam4.com/ (last visited Sept. 23, 2012).

148. *See supra* section III.A.

exercises, and a myriad of other formats. Assessment instruments could be structured as individual projects or group projects. It may be possible to use technology to administer and evaluate some of those assessment events,[149] but the greater role technology can play with regard to assessment in most of these formats is to provide platforms for communication and interchange among faculty members regarding assessment resources and tools. For instance, the Institute for Law Teaching and Learning maintains a website that provides resources for assessment in law schools and in higher education,[150] as well as more general resources on law teaching and learning.[151] The site even includes sample rubrics for assessment in many legal subject areas.[152]

Law faculties administer topic-specific blogs that provide a vehicle for sharing resources for assessment and teaching. For instance, there are forty-one topic-specific blogs that are part of the Law Professor Blogs network, and the blogs in the network generally include "regularly updated permanent resources and links and . . . daily news and information of interest to law professors."[153] The network includes blogs that focus on professionalism, as well as skills including dispute resolution, legal writing, and other legal skills.[154] Although few of these blogs currently contain links to assessment resources, such links could be incorporated, limiting access to approved faculty members. Just as assessment resources could be shared and developed collaboratively through blogs, professors could also share them through their own topic-specific clearinghouses. Some examples of

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149. *See, e.g.*, Garvey & Zinkin, *supra* note 16, at 115–21 (describing the University of New Hampshire Law School's Daniel Webster Scholar Honors Program, for which faculty, judges, lawyers, bar examiners, and peers assess student portfolios that contain papers, legal documents, exams, self-reflective analysis, peer evaluations, teacher evaluations, and videos of the students engaging in trial practice activities, conducting a mediation or interviewing a client).

150. *See Assessment*, INST. FOR L. TEACHING AND LEARNING, http://lawteaching.org/ teaching/assessment/ (last visited Sept. 23, 2012). The Institute was created to serve several goals, including "to serve as a clearinghouse for ideas to improve the quality of education in law school." *Mission of the Institute*, INST. FOR L. TEACHING AND LEARNING, http://lawteaching.org/about/ (last visited Sept. 23, 2012).

151. *See Teaching and Learning*, INST. FOR L. TEACHING AND LEARNING, http:// lawteaching.org/teaching/ (last visited Sept. 23, 2012). Vickie Eggers, the Director of Faculty Support and Distance Education at Thomas Cooley Law School, also developed a website for law faculty with resources on teaching, learning, outcomes, assessment, skills, practice, and technology. Vickie Eggers, *Inspiring Ideas for the Teaching & Learning of Law*, http://teachinglaw.weebly.com/index. html (last visited Sept. 23, 2012).

152. *Rubrics*, INST. FOR L. TEACHING AND LEARNING, http://lawteaching.org/teaching/ assessment/rubrics/ (last visited Sept. 23, 2012).

153. *See Welcome*, L. PROFESSOR BLOGS, http://www.lawprofessorblogs.com/ (last visited Sept. 23, 2012).

154. *Id.*

such clearinghouses include the Environmental Law Teachers Clearinghouse (ELTC)[155] and a clearinghouse of administrative law resources created by Professor Edward Richards at Lousiana State University Law School.[156] The ELTC includes links to a variety of teaching tools, including case studies that could be used as assessment instruments.[157]

CALI has also developed a platform on the Web to allow professors to share teaching materials. CALI's Legal Education Commons is an online database where instructors and librarians from CALI member schools can share and access syllabi, podcasts, presentations, cases, and other course and legal education materials.[158] Instructors and librarians upload the material under a "Creative Commons" license, which allows creators to "retain copyright while allowing others to copy, distribute, and make some uses of their work—at least non-commercially."[159]

B. Reforming Classroom Instructional Methods and Simulations

As law schools expand their focus on training students in professionalism and practice skills, instructional methods and tools will continue to evolve, and technology will play an important role in that evolution. Further, as noted above, the *Carnegie Report* and *Best Practices* stress the value of simulations and case studies as vehicles for teaching professionalism and legal skills, and technology is playing a role in their evolution.[160] In the mid-1990s, schools were only beginning to create "high tech" classrooms by making Internet access widely available and adding laptop requirements for students.[161] Twenty years later, most law schools are now prepared to take advan-

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155. Stephen M. Johnson, *Environmental Law Teachers Clearinghouse*, ENVTL. L. TCHRS. CLEARINGHOUSE, http://www2.law.mercer.edu/elaw/elawres.htm (last visited Sept. 23, 2012).

156. Edward P. Richards, *Administrative Law Materials*, L., SCI., & PUB. HEALTH L. SITE, http://biotech.law.lsu.edu/cases/adlaw/adlaw-links.htm (last visited Sept. 23, 2012). Similarly, Professor K.K. DuVivier has created a page of resources for energy law professors. *Energy Prof Share*, STURM C.L., http://www.law.du.edu/index.php/energy-prof-share (last visited Sept. 23, 2012).

157. Richards, *supra* note 156. The ELTC site also includes links to more specific resource pages in environmental law or other topics created by other faculty and law schools. Stephen M. Johnson, *Faculty Resource Pages*, ENVTL. L. TCHRS. CLEARINGHOUSE, *http://www2.law.mercer.edu/elaw/eltc/facultyresources.html* (last visited Sept. 23, 2012).

158. *Legal Education Commons*, CALI (July 23, 2009, 2:35 PM), http://www.cali.org/content/legal-education-commons.

159. *About the Licenses*, CREATIVE COMMONS, http://creativecommons.org/licenses/ (last visited Sept. 23, 2012).

160. *See* section II.A.

161. *See* Murray, *supra* note 53, at 187.

tage of new technologies in instruction, as evidenced by the infrastructure schools have incorporated into their classrooms, including wireless Internet access throughout their campuses.[162]

1. *New Instructional Methods and Technology*

As Professor Pat Longan at Mercer Law School has demonstrated, technology can be a powerful tool for teaching professionalism.[163] With funding from the American College of Trial Lawyers and the Judicial Conference of the Eleventh Circuit, Professor Longan and the Mercer Center for Legal Ethics and Professionalism have produced a series of video vignettes that are designed for the interactive teaching of ethics and professionalism.[164] One set of vignettes provides students with interactions between a lawyer and expert witnesses to explore ethical issues that could arise in preparing witnesses for trial.[165] Another set of vignettes explores ethical issues that could arise in various phases of civil litigation, including discovery, settlement discussions, and mediation.[166] The vignettes bring the conflict to life in a way that text on a page cannot. Video vignettes like these have been equally effective in teaching skills courses.[167]

In addition to creating video vignettes of ethical issues arising in practice, Professor Longan and the Mercer Center for Legal Ethics and Professionalism are recording a series of oral histories with outstanding lawyers, whose words and deeds can serve as models of professionalism for students.[168] These could be used in professionalism courses to help students better understand the challenges and satisfactions of the profession. They could also serve as models for students, who could be required to conduct their own oral histories of experienced lawyers. For instance, as part of a required course on professionalism for first-year students, Professor Longan requires his students to meet with and interview experienced lawyers and to conduct their own oral history of the lawyer.[169] Oral histories or audio and video interviews could also be incorporated into teaching the prac-

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162. *Id.* at 185.
163. *See Ethics and Professionalism Teaching Materials*, MERCER L. SCH., http://law. mercer.edu/academics/clep/video (last visited Sept. 23, 2012).
164. *Id.*
165. *Id.*
166. *Id.*
167. *See, e.g.*, Dwight Golann, *Using Video to Teach Negotiation and* Mediation, 13 DISP. RESOL. MAG., no. 2, 2007, at 8–11 (describing use of videotaped role plays and commercial films in teaching dispute resolution); Timothy D. Blevins, *Using Technology to Fill the Gap: Neither Paper nor Live Clients,* 12 PERSP.: TEACHING LEGAL RES. & WRITING 171–73 (2004) (describing use of videotaped client interviews in teaching legal writing).
168. *The Oral History Project*, MERCER L. SCH., http://law.mercer.edu/academics/clep/ oralhistories (last visited Sept. 23, 2012).
169. Patrick E. Longan, *Teaching Professionalism*, 60 MERCER L. REV. 659, 696 (2009).

tice skills courses promoted by the *MacCrate Report*, the *Carnegie Report*, and *Best Practices*.

Professor Longan's course demonstrates another way that technology can be used to enhance the teaching of professionalism. Since Professor Longan teaches the course to the entire first-year class, some of the lectures are presented in an online format.[170] However, the material covered in the lectures and in additional reading is subsequently covered and applied in small sections of thirty or fewer students.[171] In preparation for the small-group meetings, each student is required to post an entry on the blog for the course and students are expected to review the postings from their small section classmates before the section meeting.[172] As Professor Longan notes, the blogs and small-group meetings are essential to help students reflect on the issues presented in the course and discuss them collaboratively.[173] This seems consistent with the research noted above suggesting that collaborative projects are an effective teaching tool to reach Millennials.[174] Mercer Law School's IT staff created the blogging platform that Professor Longan uses for his course, but CALI also provides a tool, Classcaster, to all of its members that allows them to easily create blogs for a course and to create and incorporate podcasts for the course into the blog.[175]

In addition to video and blogs, several other technological tools may prove valuable for teaching professionalism and practice skills to students in Generations X and Y. As noted above, Millennials prefer active, experiential, and collaborative learning.[176] Consequently, audience response systems such as clickers could be a useful supplement to classes, adding an interactive or collaborative component to any class. Typically, with an audience response system, a professor asks students a multiple choice or "yes/no" question during the course of the lecture and students record their answers on the audience response system through an electronic device, which each student possesses.[177] The system then graphically displays the distribution of the students' responses for the professor.[178] The professor might ask follow-up questions to individual students or might ask all of the stu-

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170. *Id.* at 693.

171. *Id.*

172. *Id.*

173. *Id.*

174. *See supra* text accompanying notes 68 and 72.

175. *CALI Classcaster*, CALI, http://classcaster.net/ (last visited Sept. 23, 2012).

176. *See supra* text accompanying notes 68 and 72.

177. Park, *supra* note 56, at 1315–16.

178. *Id.* at 1315. Although audience response systems generally display responses in the aggregate, many systems can collect data regarding individual students' responses and can even analyze data demographically. *Id.* at 1324–25.

dents additional questions for electronic responses.[179] Professors could also ask students to discuss their responses to an initial question collaboratively and then respond again to the same or a different question.[180] This could be particularly useful when the students' response to a question is unexpected.[181] Professor Roger Park, who used clickers for an Evidence course, indicated that he incorporated them into his course because he is a proponent of active learning and because the clickers provided prompt feedback to the students and kept them engaged in the classroom.[182] Although early systems required the use of dedicated handheld electronic devices, CALI and other organizations now provide tools that allow faculty to conduct polls in class with students answering the questions on their laptops or cell phones.[183] It is easy to see how such a system can be used by faculty in drafting, counseling, negotiation, and other skills classes and professionalism classes to engage the students or encourage collaboration as they interactively work through problems, simulations, or video vignettes.

Another technological tool that is particularly useful for skills courses is video annotation software, such as MediaNotes, which allows users to embed tags and notes in video.[184] Using MediaNotes or similar software, faculty can take video of students engaged in client counseling, mediation, negotiation, trial advocacy, appellate advocacy, or a range of other skills, and can then annotate the video to provide comments and feedback.[185] Thus, the professor can highlight particularly strong or weak areas of performance on the video and provide suggestions for alternative approaches or improvement.[186] Annotated videos need not replace individual video review sessions with students but can supplement such reviews and provide flexibility in the timing of the reviews. The software can also be used by students to self-eval-

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179. *Id.* at 1316.

180. *Id.*

181. *Id.* at 1320.

182. *Id.* at 1318. The use of polling in the classroom also provides feedback to the professor, who can discover more quickly when more time or explanation is required for a topic. *Id.* at 1320, 1323. On the flip side, though, Professor Park notes that the system has a disadvantage in that polling the students could lengthen the class and cut down on coverage of material. *Id.* at 1320.

183. *Id.* at 1327. CALI provides a web-based polling tool, CALI InstaPoll, available to anyone regardless of whether they are members of CALI. *CALI InstaPoll*, CALI (July 20, 2009, 4:55 PM), http://www.cali.org/content/cali-instapoll. Professor Park notes, one advantage of the clicker system over a web-based system is that it can be used by faculty that do not permit students to bring laptops or cell phones into the classroom. *See* Park, *supra* note 56, at 1327.

184. *See MediaNotes*, CALI (Sept. 14, 2009, 1:23 AM), http://www.cali.org/medianotes. MediaNotes is distributed by CALI and is available to its members for free. *Id.*

185. *Media Notes for Instructors*, CALI (Sept. 15, 2009, 3:36 AM), http://www.cali.org/medianotes/teachers.

186. *Id.*

uate their performances.[187] In addition, video annotation software frequently allows multiple people to comment on the video.[188] With this capability, the software can be used to facilitate a dialogue between a professor and student, or students could use it to facilitate collaboration on a project. Further, students or faculty can use the software to make annotated videos, which they can then use for presentations in teaching.[189]

Finally, just as technology can help professors collaborate on and share new ideas and resources for assessment, it can help them do the same for classroom instructional methods. Professors can post their ideas for using technology to teach skills and professionalism courses on the same blogs, clearinghouses, commons pages, and resource pages where they are sharing new ideas for assessment.[190]

One roadblock to the broader adoption of some of these technologies in law school classes is the trend among some instructors to prohibit the use of laptops in the classroom.[191] Research, such as the Law School Survey of Student Engagement, suggests that students who use their laptops in class are highly engaged, contribute to class discussions, and can synthesize material across courses.[192] Nevertheless, many instructors prohibit laptops in class because they believe (1) laptops have a negative effect on student note taking by encouraging students to transcribe the class proceedings; (2) laptops cause a decrease in student engagement and participation; and (3) laptops cause distractions to students that are using them and the students sitting near them.[193] Professor Kristen Murray challenged the foundations for each of those assumptions based on interviews she conducted with law students at Temple University and George Washington University.[194] George Washington Law School requires its students to own laptops, while Temple does not.[195]

Regarding note taking, Professor Murray acknowledges that optimal note taking involves some processing of the material in class.[196] She points out however, that many students are unable to take class notes in that manner due to their learning styles.[197] Instead, some

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187. *See* Larry C. Farmer, *MediaNotes Uses in Skills Courses: Instructors Manual*, CALI 9 (2008), http://w.cali.org/files/24/MediaNotes%20Instructors%20Manual.pdf.

188. *Id.*

189. *Id.* at 15–16. MediaNotes can also be used to annotate audio files. *Id.* at 1.

190. *See supra* notes 144–53, and accompanying text.

191. *See* Murray, *supra* note 53, at 185–86.

192. *Id.* at 192.

193. *Id.* at 189.

194. *Id.* at 198.

195. *Id.* at 199.

196. *Id.* at 201–03

197. *Id.*

students benefit from recording as much material as they can during class and processing it later.[198] Further, even without laptops in the classroom, many students would still try to take notes as quickly as they could but would do so less effectively.[199] Software allows students to take more creative notes by incorporating material prepared before class or outside of class and by creating margin notes and outlines in the notes.[200]

Regarding concerns about decreased participation in class, Professor Murray suggests that some of the perceived decrease in class participation may simply be due to the characteristics of Millennials, as they are team-oriented, collaborative, less likely to criticize each other, and more deferential to authority.[201] In addition, she notes that almost eighty percent of the students she surveyed reported that their use of laptops or the use of laptops by classmates did not reduce their own class participation, but instead, actually enhanced it.[202] She suggests that this is not surprising in light of the characteristics of Millennials because laptops allow students to verify their answers before they contribute to the class discussion.[203] Finally, regarding distraction, most of the students Professor Murray surveyed indicated that they only engaged in non-class activities occasionally and that the most frequent non-classroom activity was checking their e-mail.[204] More importantly, most of the students indicated that the use of laptops did not inhibit their ability to follow discussions in class.[205] As Professor Murray argues, many students engage in class-related activities, like reviewing prior class notes, accessing online research materials relevant to the class, or looking up answers to a question asked by the professor, and the benefits of those activities usually outweigh the costs of the engagement in non class-related activities.[206]

As educators discover the benefits of new technologies to engage students in the instruction of skills and professionalism, perhaps the resistance to laptops in the classroom may decrease. In the meantime, technology developers are endeavoring to create tools that can be utilized even when students do not have laptops.[207]

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198. *Id.*

199. *Id.* at 203. More importantly, though, in her survey of law students, 70.5 percent indicated that they summarize the major points of class in their notes, rather than trying to transcribe what is taking place. *Id.* at 204.

200. *Id.* at 205–06.

201. *Id.* at 207–08.

202. *Id.* at 208.

203. *Id.*

204. *Id.* at 210–11.

205. *Id.* at 212–13.

206. *Id.* at 209–13.

207. *See* Park, *supra* note 56, at 1318, 1320, 1323.

2. Simulations and Technology

a. Value of Simulations

As noted above, the *Carnegie Report* and *Best Practices* both stress the value of simulations as a tool for teaching practical skills and professionalism.[208] In addition, draft ABA Standards, if adopted, would require more clinical, field placement, and simulation opportunities for students.[209] Like clinics, simulations provide an opportunity for integrated training in doctrine, skills, and professionalism—*Carnegie*'s three apprenticeships.[210] Even prior to the *Carnegie Report* and *Best Practices*, law schools routinely incorporated simulations into trial practice, pre-trial practice, negotiation, mediation, counseling, and many writing and drafting classes.[211] After those reports, professors have been collaborating on developing and sharing simulations[212] and examining ways to develop simulations to teach transactional lawyering skills.[213] Professor Judith Wegner suggests some large, upper-division classes could be paired with "labs" that incorporate simulations and have smaller enrollments.[214] As envisioned in *Best Practices*, simulations involve "students assuming the roles of lawyers and performing law related tasks . . . under supervision and with opportunities for feedback and reflection."[215] Shared reflection of the experiences of a class, debriefing, is a vital part of any simulation.[216] The University of New Hampshire School of Law has taken an interesting approach to simulations in its Daniel Webster Scholars Honors Program, modeled on the practice in medical schools.[217] Beginning in 2008, the school added standardized clients as an additional assessment tool for simulations in the program.[218] The standardized clients are actors who are trained to portray clients in a simulation and to

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208. *See supra* text accompanying notes 34 and 45.

209. *Id.*

210. *See* CARNEGIE REPORT SUMMARY, *supra* note 34.

211. *See* 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, 134–35 (2011).

212. *See* Wegner, *supra* note 39, at 977–78.

213. *Id.*; *see also* Illig et al., *supra* note 90, at 16 (discussing the importance of teaching transactional skills in addition to traditional curriculum).

214. *See* Wegner, *supra* note 39, at 978–79. The concept is being put into practice at the University of Oregon, where adjunct faculty teaches labs in conjunction with a Mergers and Acquisitions class. *See* Illig, *supra* note 90, at 19. Each lab is sponsored by a law firm, which assigns a team of senior associates to teach the course. *Id.* While the labs are not required, 30 of the 180 students enrolled in Mergers and Acquisitions in 2008 signed up for the lab. *Id.* at 20.

215. *See* BEST PRACTICES, *supra* note 46, at 179.

216. *Id.* at 187.

217. *See* Garvey & Zinkin, *supra* note 16, at 121.

218. *Id.*

assess the advice and communications provided by student attorneys in their counseling sessions.[219]

Despite all of these benefits, there are some obvious limitations on the use of simulations. First, simulations and skills courses can be expensive in that they are taught in small sections.[220] In addition, many full-time instructors may not have the practice background or expertise to train and evaluate students in various areas of practical skills.[221] Consequently, it may be necessary to hire additional faculty to teach those courses. Further, in order for students to effectively participate in a simulation, they must have some minimal background in the doctrine or area of law covered by the simulation.[222] If the simulation is divorced from instruction in another substantive area of law, the professor must spend time providing students with minimal background in the doctrine or law behind the simulation.[223] If, on the other hand, the simulation is incorporated into a class that focuses primarily on the doctrine or substantive law, the doctrine may not receive as much coverage as the simulations. However, developing a deeper understanding of doctrine, skills, and values takes longer than other methods of instruction. Many instructors will likely conclude that the trade-off is worthwhile.

In light of resource, cost, and time pressures, some instructors have begun to experiment with the use of technology to deliver simulations.[224] Obviously, since feedback and evaluation are central to simulations, some important parts of the simulation experience cannot be replicated using technology. However, as described below, technology can play an important role in delivering realistic, rich simulations.[225]

b. Computerized Simulations

For several years, Professor Ira Steven Nathenson has been using online simulations in his cyberlaw class at Saint Thomas University School of Law.[226] Each year, he creates websites for fictional companies and assigns students the task of representing one of the fictional companies.[227] Each fictional company is concerned that the website of another fictional company is infringing on a trademark, cyber squatting, defaming the company, or engaging in some other activity that

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219. *Id.* at 121–22. Medical schools frequently use standardized patients as an assessment tool. *Id.*

220. *See* Munneke, *supra* note 91.

221. S*ee* Illig et al., *supra* note 90, at 18.

222. *Id.*

223. *See id.*

224. *See infra* subsection III.B.2.b.

225. *Id.*

226. *See* Nathenson, *supra* note 30, at 659–60.

227. *Id.* at 694–95.

violates their legal rights.[228] Professor Nathenson plays the roles of managing partner for the students' firms, client, and opposing party.[229] Although the disputes often involve other "real-space Internet and online service providers," the students are instructed to not contact those entities.[230]

Professor Nathenson assesses his students based on a series of projects. For one of the projects, students are asked to investigate the conduct of the opposing company, draft a cease and desist letter with regard to the company's online conduct, and communicate with the opposing party through an e-mail address, an address directed to the professor.[231] Later, students meet with the managing partner of their firm, the professor, to discuss the progress of their actions.[232] After discussing their progress, students create a case file that includes documentation, correspondence, a complaint, an ethics memo, and time sheets.[233] Professor Nathenson provides feedback on the students' cease and desist letters in the guise of e-mail responses from the opposing party.[234] In addition, he provides additional feedback to students on the letters and other communications with clients and the overall case file in the context of the meetings with the managing partner.[235] Finally, he provides feedback through written assessments of their case files on the documents and on a "score sheet" for the files.[236] Professor Nathenson's simulations provide a good example of the way that simulations can be used to teach issues of professionalism, as well as skills. Professor Nathenson used the defendants' responses to the students' cease and desist letters to raise ethical quandaries for the students.[237] For instance, in some of the responses, the defendant claimed to be a minor, while in others, the defendant sought the plaintiff's legal advice or indicated that they were represented by an attorney in the matter.[238]

Based on his experiences with the online simulations, Professor Nathenson concludes that the approach helps students understand the underlying cyberlaw doctrine more deeply than other methods of instruction, while providing them with a rich "pedagogical tapestry, permitting them to practice . . . lawyering skills such as fact-finding, negotiation and client management, as well as focusing attention on

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228. *Id.*
229. *Id.* at 677–79.
230. *Id.* at 678–79.
231. *Id.* at 697.
232. *Id.*
233. *Id.*
234. *Id.* at 721–22.
235. *Id.* at 721–22.
236. *Id.* at 723.
237. *Id.* at 714–15.
238. *Id.*

professional value concerns . . . ."[239] As noted above, technology facilitates the delivery of material for the simulations and facilitates some of the attorney–client and inter-party interactions, but does not replace the feedback and evaluation provided by the professor.

Instructors in Scotland have developed even more robust computer-assisted simulations. As part of their program for the Diploma in Legal Practice at the Glasgow Graduate School of Law, Professor Paul Maharg and colleagues have created a fictional town, Ardcalloch, which is represented on the Web by a civic history, a map, and a directory of several hundred institutions, businesses, virtual student law firms, and other people.[240] Students obtain information from the online entities and interact with other students and faculty online to buy or sell property, execute an estate for a deceased client, or bring and defend a civil action.[241] Think of it as a MMORPG[242] for law, except not quite as "massive." In the Civil Court Action project, for instance, students develop a mastery of the rules of civil procedure and the skills of advocacy and drafting pleadings.[243] At the outset of the project, students are provided with a memo from the senior partner of their firm that outlines their client's case and asks them to institute a civil action on the client's behalf.[244] The students are provided with written statements from the clients and have access to a variety of online resources, including forms and guidance notes.[245] The students can then seek additional information from institutions, businesses, and other people in Ardcalloch or from the senior partner of their firm, an individual from the school's faculty.[246] Students are then expected to "raise the action, draft documents, correspond with the Clerk to obtain a warrant for service, and contact their client . . . ."[247] Other students representing the defendants are then expected to gather information, communicate with their clients and the court, and file appropriate pleadings to defend the action in the same

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239. *Id.* at 659–60. As mentioned more generally above, though, Professor Nathenson noted that prior to the initiation of the simulations, he spent several weeks covering background principles of law, so that students would have a baseline of knowledge to use in the simulations. *Id.* at 690–91.

240. *See* Barton et al., *supra* note 56, at 160–61.

241. *Id.* at 162–63.

242. A MMORPG (massively multiplayer online role playing game) is "a genre of role-playing video games in which a very large number of players interact with one another within a virtual game world." *Massively Multiplayer Online Role-Playing Game*, Wikipedia, http://en.wikipedia.org/wiki/Massively_multiplayer_online _role-playing_game (last visited Sept. 23, 2012).

243. *See* Barton et al., *supra* note 56, at 168.

244. *Id.* at 171.

245. *Id.* at 170–71.

246. *Id.* at 171.

247. *Id.*

way as their opponents.[248] Students receive feedback on their work, in part, through a memo from their senior partner.[249] Firms are given two opportunities to submit their pleadings within the required time period and are assessed on whether their performance is competent.[250] If a firm fails to submit competent materials on the second try, the firm is removed from the Civil Court Action project and members of the firm are required to take a formal written exam, which includes a drafting project, on the material.[251] The students and faculty have been very pleased with the simulations and assessment in the project.[252]

As a result of the success of the project in Scotland, the developers of Ardcalloch have been endeavoring to create an open-source transactional learning environment, called SIMPLE, that would allow instructors to develop their own virtual, world-driven simulations.[253] Unfortunately, despite the name of the project, it is proving difficult to create a tool that facilitates the "simple" development of simulations like Ardcalloch.[254] While those worlds are not yet readily available, the projects of Professor Maharg and Professor Nathenson demonstrate that technology can facilitate the delivery of rich, immersive simulations.

C. Reforming Instructional Materials—The Next Generation of Course Books

Just as faculty and law schools will adopt new instructional methods to increase the focus on teaching professionalism and practice skills, they should adopt new instructional materials that are designed with those goals in mind and that engage the modern law student. Course books must evolve with evolving pedagogies, and technology should play a central role in that evolution. Although change comes slowly in the casebook arena, it frequently follows major pedagogical shifts. For example, the adoption of the Case Method approach to teaching influenced law schools' decision to replace statutes and reporters with the prototypical Langdellian casebook.[255] Later, when legal realism took hold in schools, new casebooks appeared including material other than cases, such as statutes and explanatory text.[256] Over time, as more instructors moved away from traditional

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248. *Id.*
249. *Id.* at 180.
250. *Id.*
251. *Id.*
252. *Id.* at 183–85.
253. *Id.* at 187–88; *see also* Garvey & Zinkin, *supra* note 16, at 122 (discussing integrating the SIMPLE platform for running and assessing simulations).
254. Garvey & Zinkin, *supra* note 16, at 122.
255. *See id.* at 105–06.
256. *See* Alton, *supra* note 16, at 355–56.

Socratic dialogue in classes toward a problem-based approach, casebooks incorporated more problems.[257] Just as course books have evolved in response to evolving pedagogy in the past, they must evolve now as law schools focus more heavily on new means of assessment and on training students in practice skills and professionalism.[258]

Course books also must evolve because students have evolved. The materials need to facilitate active, engaged, and collaborative learning and bring the people and disputes behind cases to life, and the materials must engage individuals with a broad range of learning styles, including visual learners.[259] Course books must also evolve because the practice of law is evolving, and lawyers are embracing technology.[260] Course books should embrace it, as well.

In the aftermath of the *Carnegie Report* and *Best Practices*, course books have begun to evolve. Within the last few years, Lexis launched a series of "Skills and Values" course books and other publishers have released new books or new editions of books that focus on developing skills and values.[261] Those efforts are important, but most publishers have failed to embrace technology in designing these new materials. In many cases, to the extent that publishers roll out "e-books" or digital materials, they are simply digitizing materials that were designed as print materials. In doing so, the publishers are missing an opportunity to engage students with materials that are designed to cater to their learning styles and preferences and their facility with technology.[262] New course books could be revolutionary and not simply evolutionary.

As noted above, video vignettes could be included in course books, as they could help bring cases, disputes, and legal issues, including issues of professionalism, to life in ways that are impossible in text alone. Video could be used to help students understand the facts of a case or a dispute, the relationships of parties involved in disputes, and the policy reasons in support of various resolutions of disputes. In a recent symposium on the future of the course book, for instance, Professor Dennis Patterson envisioned a video that demonstrated the process for shipping scallops from Tokyo to New Jersey as a tool to help students engage more fully in resolving a dispute involving bills of lading.[263] In the same symposium, Professor Marilyn Berger discussed a video of a fictitious trial that she and her colleagues produced

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257. *See Workshop on the Future of the Legal Course Book*, 33 SEATTLE U. L. REV. 292, 298 (2010) [hereinafter *Workshop*] (remarks of Michael Schwartz).
258. *See id.* at 301–02 (remarks of Edward Rubin).
259. *See id*. at 333 (remarks of Paula Lustbader).
260. *Id.* at 307 (remarks of Kraig Marini Baker).
261. *See About the Skills & Values Series*, LEXISNEXIS, http://www.discoveryskills. com/aboutsv.htm (last visited May 16, 2013).
262. *See Workshop*, *supra* note 257, at 314 (remarks of David Skover).
263. *Id.* at 309 (remarks of Dennis Patterson).

to demonstrate trial skills, such as jury selection.[264] Likewise, Professor Paula Lustbader discussed the value of including video interviews with clients or persons involved in legal disputes to provide a "richness of their cultural backgrounds" and a better understanding of how the disputes impact them emotionally.[265] Such videos could easily be incorporated into a revolutionary course book.

Just as video can provide context and background for cases and explanatory notes, audio and graphic displays can enhance the traditional print materials. Professor David Vladeck, for instance, requires students in his constitutional law class to listen to oral arguments on Oyez.com and review websites to put problems and policies discussed in class in context.[266] Such materials could be readily linked directly within a revolutionary course book. Charts and diagrams can make material more accessible to visual learners and could be included in course books much more frequently than they have been included in the past.[267]

In recognition of the important role of assessment, simulations, and case studies, all of those materials could be integral parts of a revolutionary course book. CALI exercises, computerized tutorials, or quizzes could be included in each chapter, and richer simulations and case studies (perhaps even in video format) or role-playing games[268] could be incorporated to supplement the problems that are becoming de rigueur in modern course books.

The digital format also allows authors to present case, statutory, and regulatory material in a richer format. For instance, when Professor Patrick Wiseman presents his students with edited versions of cases in his materials, he presents the material in a format whereby students can easily expand the case to review the material he edits out.[269] Using this approach, faculty can present cases, statutes, regulations, and other materials in a variety of formats depending on the manner in which the faculty member intends the student to engage with the material. At an even more extreme level, Professor John Mitchell envisions a course book that "[shifts] the ground so that the appellate cases and statutes become the library, and the client and his or her case becomes the context within which we're teaching."[270]

Professor Greg Silverman takes a different approach with technology, using it to incorporate "interventions" into the cases provided to

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264. *Id.* at 311 (remarks of Marilyn Berger).

265. *Id.* at 298 (remarks of Paula Lustbader).

266. *Id.* at 315 (remarks of David Vladeck).

267. *See id.* at 309 (remarks of Dennis Patterson).

268. *Id.* at 300 (remarks of Paula Lustbader).

269. *See Professor Wiseman's Free, Edited and Expandable Con Law Cases*, CALI (Jan. 22, 2010), http://www.cali.org/blog/2010/01/22/prof-wisemans-free-edited-and-expandable-con-law-cases.

270. *See Workshop*, *supra* note 257 at 300 (remarks of John Mitchell).

students.[271] In the margin of a judicial opinion in PDF format, Professor Silverman may embed an audio file that includes his commentary on the corresponding paragraph in the opinion, particularly if the paragraph includes material that students frequently experience difficulty understanding.[272] He also embeds flash movies in those judicial opinions at appropriate points and includes interactive quizzes in the materials.[273]

While technology can enable educators to incorporate all of these features into a revolutionary course book, instructors generally agree that it is important to remain focused on learning objectives and pedagogical goals when designing new course books, so that these new features will only be incorporated into new course books to the extent that they advance the learning objectives and pedagogical goals of the authors.[274]

In an ideal world, instructors would collaborate with technology specialists and experts in learning theory to design and implement a truly rich learning tool just as instructors collaborated to build the twenty-first century revolutionary course book.[275] Although instructors are likely to engage more closely with technology specialists in building the next generation of course books, instructors have not worked closely with experts in learning theory and education in designing course books in the past. Thus, it may be overly optimistic to think that such collaboration will occur in this transition. In addition, to facilitate faculty adoption of new course books, it would be important to line up well-known and well-respected authors to work collaboratively on the new materials.[276] However, there is no guarantee that those authors will have the vision to deliver the materials in the new format.

Many other questions still need to be resolved as course books transition to incorporate the new features outlined above. For instance, copyright issues may become greater impediments as many of these features are added, especially if the books are developed in an open-source format and delivered through an open-access model.[277] On a more fundamental level, though, questions need to be resolved regarding whether the materials would be delivered for free or for a fee, whether the materials could be re-purposed, what platform would

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271. *Id.* at 314 (remarks of Greg Silverman).

272. *Id.*

273. *Id.*

274. *Id.* at 318, 329–30 (remarks of Greg Silverman and Paula Lustbader).

275. *Id.* at 337, 342 (remarks of John Mitchell and Paula Lustbader).

276. *See id.* at 318–19 (remarks of Matthew Bodie).

277. *Id.* at 319–20 (remarks of David Skover and John Palfrey).

be used to deliver the materials, and the range of devices with which the materials would be compatible.[278]

While the content and format of new course books could evolve dramatically from the modern course books, the manner in which the new course books are created might also evolve. On the one hand, the new course books might be created the same way that course books have been created in the past, where an author or a team of authors collaborate to develop the materials which are then distributed to instructors around the country. In some ways, CALI is following this model with its eLangdell eBook initiative.[279] Through that initiative, CALI has partnered with individual faculty members or teams of faculty to create course books that are designed to take advantage of new technologies, as opposed to being designed as digital versions of print books.[280] The books are available for free to schools that are members of CALI and are compatible with smartphones and e-readers, as well as computers and print.[281] The books are distributed through a Creative Commons License, and adopters can modify them for use in their classes as they feel appropriate.[282]

CALI and others are also working on a more revolutionary way of designing course books and course materials. Through the eLangdell Commons, CALI envisions instructors uploading and sharing teaching materials for a course, which other instructors can then assemble into their own "course book" as they deem appropriate.[283] CALI has already uploaded 700,000 cases from PublicResource.org and all of the CALI lessons are accessible from CALI's website.[284] Instructors can upload video, case studies, interactive quizzes, and any number of the other tools outlined above into the eLangdell Commons to create a pool of resources from which instructors across the country can design their own course books or materials. The Berkman Center for Internet and Society at Harvard Law is working on a similar project, which it calls the H2O Project.[285] On a smaller scale, blogs and faculty resource pages like the Environmental Law Teachers'

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278. *Id.* at 318–35; *see also* Matthew T. Bodie, *The Future of the Casebook: An Argument for an Open-Source Approach,* 57 J. LEGAL EDUC. 10 (2007) (discussing the potential that online technology holds for casebooks and the possibility of using an open-source approach).

279. *See The eLangdell Bookstore*, CALI, http://elangdell.cali.org/ (last visited Sept. 23, 2012).

280. *See About ELangdell*, CALI, http://elangdell.cali.org/node/2 (last visited Sept. 23, 2012).

281. *Id.*

282. *Id.*

283. *See Workshop*, *supra* note 257, at 322–23, 341 (remarks of John Mayer).

284. *Id.*

285. *See* The Berkman Ctr. for Internet & Soc'y, *H2O Overview*, http://h2o.law.harvard.edu/index.jsp (last visited Sept. 23, 2012).

Clearinghouse described above,[286] could serve a similar function, distributing the building blocks for course books or materials to instructors teaching in a particular area of the law.[287]

IV. TEACHING STUDENTS TO USE TECHNOLOGY

While law schools will be utilizing technology to reform assessment, instructional methods, and instructional materials, they should also be utilizing technology to instruct law students in technology skills. As noted above, the *Carnegie Report* identifies "organization and management of legal work" as fundamental skills of lawyers and encourages law schools to devote more attention to training students in such skills.[288] Similarly, the changing economics of law practice require new lawyers to begin work with sufficient practice skills to hit the ground running.[289] Technology is becoming central to the practice of law, impacting communications with clients, attorneys, and the courts (e-mail and electronic filing), and has changed the way attorneys conduct and perform advertising (websites and social media), research (electronic research), dispute resolution (online mediation and negotiation), document creation (forms software), document management and case management (automated systems, electronic discovery), billing, litigation techniques (technology in the presentation of evidence, etc.), and countless other areas. Professionalism issues can arise in most of those areas. Consequently, it is incumbent on law schools to provide training for students on basic technology skills required for practice.

In one area, legal research, law schools have focused significant resources on training students to use technology in practice. As part of a required first-year course on legal research, after focusing on print resources, students are often instructed not only on the fee-based research tools, like Lexis and Westlaw, but also on the multitude of free electronic research tools available.[290] The instruction focuses not simply on how to use such resources, but why to use such resources, and professionalism issues that could arise in the use of such resources. Almost all schools also offer advanced legal research courses, and many offer courses that focus on research in specific areas of the law.[291] These courses generally focus on the electronic and print resources available for research.[292] Thus, with respect to legal

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286. *See supra* subsection III.B.
287. *See* Johnson, *supra* note 155.
288. *See* CARNEGIE REPORT SUMMARY, *supra* note 35.
289. *See* Floyd et al., *supra* note 26, at 275–77.
290. *See* Blair Kauffman, *Information Literacy in Law: Starting Points for Improving Legal Research Competencies*, 38 INT'L J. LEGAL INFO. 339, 340–41 (2010).
291. *Id.* at 343–44.
292. *Id.*

research at least, law schools are providing training in the basic technology skills required for practice.

However, to the extent law schools provide training on technology in practice today, they frequently provide the training in the context of law practice management courses.[293] Those courses generally address a broad range of topics, including law firm organization, mergers and dissolution, fees and billing, marketing, compensation, economics of law practice, management-related malpractice, law office systems, and trends in the profession affecting the practice of law as well as technology.[294] Professionalism is a major focus in most of those courses. Law practice management courses are skills courses, and thus, are frequently taught in small sections, which increases their cost.[295] However, law practice management courses are particularly good vehicles for technological innovation in the delivery of the courses, including delivery via distance learning.[296] He argues that since lawyers are increasingly delivering services to clients, communicating with courts and parties online, and practicing from virtual offices over the Internet:

> [L]earning how to work in such an electronic environment is consistent with the broad objective of teaching students about managing a law practice. To the extent that a law school course uses electronic tools as a part of the educational process, it simultaneously prepares students for the practice of law as they will find it after law school.[297]

Professor Munneke also supports the use of distance learning to teach law practice management because it would increase access to the course.[298] A recent survey of law schools found that such distance-learning courses are only being offered at about fifty schools.[299] Even if the course is not offered in a distance format, students in the course should be required to use technology to learn by doing because the course is fundamentally a skills course.[300] Regardless of whether law practice management courses are taught in small sections or in a distance-learning format, it would be useful to increase opportunities for students to take such courses in law schools in order to develop the technology skills required for practice.

In addition to instructing students in technology as part of a law practice management course, schools can offer individual courses that focus on technology in legal practice. Although Villanova Law School

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293. *See* Munneke, *supra* note 91, at 1222.

294. *Id.* at 1214–17.

295. *Id.* at 1212–13, 1225.

296. *Id.* at 1233–36.

297. *Id.* at 1236.

298. *Id.* at 1233.

299. *Id.*

300. *Id.* at 1239.

offered an early version of such a course in the late 1980s,[301] the trend still has not caught on at most law schools thirty years later.[302] While such courses have not yet proliferated at law schools, this past year, CALI offered a free online course on Topics in Digital Law Practice.[303] CALI offered the course over nine sessions via webcasting, and each session included a lecture, a question-and-answer period, and an on-line, interactive homework assignment.[304] Topics covered in the course included social media in lawyering, technology in the courts, document automation, the twenty-first century law office, free legal research tools, and several others.[305] CALI targeted the course at law students and law professors, and the software could accommodate up to one thousand live attendees per session, but the course did not include any formal assessment.[306] Each of the sessions was archived and posted to a blog for the course for persons who could not participate while the sessions were offered live.[307] Over nine hundred persons participated in one or more of the sessions of the course.[308] CALI's course is archived and accessible to students at all of CALI's member schools, but law schools must move forward to provide their own instruction in this area, either through law practice management courses or stand-alone courses that focus on technology in practice.

V. CONCLUSION

The *MacCrate Report*, the *Carnegie Report*, and *Best Practices* identity important weaknesses in the educational programs of law schools and urge schools to implement significant curricular and pedagogical reforms to address those weaknesses. Although curricular and pedagogical changes generally come slowly, it appears that many schools are taking the recommendations of those reports seriously. As schools and instructors implement or think about how to implement the changes envisioned by the *MacCrate Report*, the *Carnegie Report*, and *Best Practices*, they need to recognize that technology can significantly enhance and ease the implementation of those changes and provide a bridge to reach out to a different generation of students. Schools also need to realize that technology can facilitate access to ed-

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301. The author was a student in Professor Perritt's Computers and the Law course.
302. *See* Kenneth J. Hirsch & Wayne Miller, *Law School Education in the 21st Century: Adding Information Technology Instruction to the Curriculum,* 12 Wm. & Mary Bill Rts. J. 873, 873 (2004).
303. *See Topics in Digital Law Practice*, CALI (Apr. 6, 2012), http://tdlp.classcaster.net/.
304. *See Topics in Digital Law Practice, About the Course*, CALI, http://tdlp.classcaster.net/about-cali-topics-in-digital-law-practice/ (last visited Sept. 23, 2012).
305. *Id.*
306. *Id.*
307. *Id.*
308. *See Topics in Digital Law Practice*, *supra* note 304.

ucation for a broader range of students and can lower the cost of educating those students. Additionally, schools need to recognize that students need to comprehend and be comfortable with certain basic technologies in order to practice law. In short, schools need to consider technology as an integral part of the planning process for all of the curricular and pedagogical reforms prompted by the *MacCrate Report*, the *Carnegie Report*, and *Best Practices*.