

1-1-2014

The Dynamics of the Contemporary Law School Classroom: Looking at Laptops through a Learning Style Lens

Eric A. DeGroff
Regent University

Follow this and additional works at: <https://ecommons.udayton.edu/udlr>



Part of the [Law Commons](#)

Recommended Citation

DeGroff, Eric A. (2014) "The Dynamics of the Contemporary Law School Classroom: Looking at Laptops through a Learning Style Lens," *University of Dayton Law Review*. Vol. 39: No. 2, Article 2.
Available at: <https://ecommons.udayton.edu/udlr/vol39/iss2/2>

This Article is brought to you for free and open access by the School of Law at eCommons. It has been accepted for inclusion in University of Dayton Law Review by an authorized editor of eCommons. For more information, please contact mschlangen1@udayton.edu, ecommons@udayton.edu.

The Dynamics of the Contemporary Law School Classroom: Looking at Laptops through a Learning Style Lens

Cover Page Footnote

The author thanks Professors Benjamin V. Madison III and Kathleen A. McKee for their helpful comments on earlier drafts of this article. The author also expresses appreciation for his students, whose character and commitment have made teaching such a pleasure.

THE DYNAMICS OF THE CONTEMPORARY LAW SCHOOL CLASSROOM: LOOKING AT LAPTOPS THROUGH A LEARNING STYLE LENS

Eric A. DeGroff¹

I. INTRODUCTION	201
II. HISTORICAL DEVELOPMENT OF THE LAPTOP ISSUE	205
III. THE RATIONALE FOR BANNING LAPTOPS IN FIRST-YEAR DOCTRINAL COURSES	208
IV. IMPLEMENTATION OF A NO-LAPTOP POLICY	215
A. <i>How the Policy was Implemented</i>	215
B. <i>Survey Results</i>	217
V. CONCLUSION	219
APPENDIX 1	221
APPENDIX 2	228

I. INTRODUCTION

The Millennial Generation, which comprises the majority of today's law school population,² is clearly the most technologically savvy age group ever to enter the legal academy.³ They have all come to maturity in the television age, and most have been immersed in computers and other

¹ Professor, Regent University School of Law. J.D., Regent University School of Law; M.P.A., University of Southern California; B.A., University of Kansas. The author thanks Professors Benjamin V. Madison, III and Kathleen A. McKee for their helpful comments on earlier drafts of this article. The author also expresses appreciation for his students, whose character and commitment have made teaching such a pleasure.

² Though scholars differ somewhat in describing what constitutes the Millennial Generation—or Generation Y—most suggest that the age group encompasses those born roughly during the decades of the 1980s and 1990s. *See, e.g.,* Laurie Morin & Susan Waysdorf, *The Service-Learning Model in the Law School Curriculum*, 56 N.Y.L. SCH. L. REV. 561, 577 (2011/2012); *see also* Tracy L. McGaugh, *Generation X in Law School: The Dying of the Light or the Dawn of a New Day?*, 9 LEGAL WRITING: J. LEGAL WRITING INST. 119, 120 (2003) (defining Generation X as those born from 1961 through 1981, and Generation Y—otherwise known as the Millennial Generation—as those born 1982 and later); RICHARD G. MCNEILL, JR., INT'L CHRIE CONFERENCE-REFEREED TRACK, ADAPTING TEACHING TO THE MILLENNIAL GENERATION: A CASE STUDY OF A BLENDED/HYBRID COURSE 3 (2011) (marking the beginning and ending birth years for Generation Y as 1982 and 2000). By most accounts, therefore, Generation Y would include individuals who are now generally between ages twenty and thirty-two. Generation X, which is distinct in some respects but displays many of the same characteristics as Generation Y, would now include adults between the ages of thirty-two and fifty or fifty-five.

³ Karla Mari McKanders, *Clinical Legal Education at a Generational Crossroads: Shades of Gray*, 17 CLINICAL L. REV. 223, 225–26 (2010). They are also undoubtedly the most thoroughly scrutinized population group ever born. *See, e.g.,* Joan Catherine Bohl, *Generations X and Y in Law School: Practical Strategies for Teaching the “MTV/Google” Generation*, 54 LOY. L. REV. 775, 778–79 (2008); 60 Minutes: *The “Millennials” Are Coming* (CBSNews original television broadcast Nov. 11, 2007, updated on May 23, 2008), available at <http://www.cbsnews.com/news/the-millennials-are-coming/>.

electronics since early childhood.⁴ They are used to having immediate and virtually unlimited access to information and enjoying instantaneous connection with their peers.⁵ Having lived in a fast-paced, media-rich environment, they are typically sophisticated users of technology, are probably better than any previous generation at finding information quickly,⁶ and have embraced multi-tasking as the norm, even in the classroom.⁷

In addition to their technical skills and remarkable proclivity for continual action, they have been described as generally bright and energetic, achievement-oriented, career-minded, motivated and self-confident.⁸ These traits undoubtedly serve them well in the study of law. Unfortunately, the Millennials also enter law school with wide disparities in academic preparation and skill, and in growing numbers are used to thinking and learning in ways that are less than ideal for understanding the nuances of the law.⁹ They are used to receiving information passively from television, the Internet and other forms of visual entertainment. Many are products of secondary and undergraduate educational programs that placed little emphasis on analytical reasoning.¹⁰ They are more likely than previous generations to be visual learners and holistic, right-brained thinkers—characteristics that historically have placed law students at a significant disadvantage academically.¹¹ Accordingly, they are less

⁴ See, e.g., M.H. Sam Jacobson, *A Primer on Learning Styles: Reaching Every Student*, 25 SEATTLE U. L. REV. 139, 151–52 (2001) (noting the impact of extensive television and computer exposure on law student learning styles).

⁵ Bohl, *supra* note 3, at 780.

⁶ Morin & Waysdorf, *supra* note 2, at 614.

⁷ See, e.g., M.H. Sam Jacobson, *Paying Attention or Fatally Distracted? Concentration, Memory, and Multi-Tasking in a Multi-Media World*, 16 LEGAL WRITING: J. LEGAL WRITING INST. 419, 435 (2010).

⁸ See, e.g., Timothy W. Floyd et al., *Beyond Chalk and Talk: The Law Classroom of the Future*, 38 OHIO N.U. L. REV. 257, 274–75 (2011); Morin & Waysdorf, *supra* note 2, at 580; CHERYL R. STURKO GROSSMAN, LEARNINGWORK CONNECTION, YOUTHWORX INFORMATION BRIEF NO. 21, GEN Y 1–2 (2006), <http://jfs.ohio.gov/owd/WorkforceProf/Youth/Docs/GenY.pdf>; NAS RECRUITMENT COMMUNICATIONS, NAS INSIGHTS VOL. 17, RECRUITMENT HOTSHEET – GENERATION Y (2010), <http://www.nasrecruitment.com/uploads/files/volume-17-generation-y-hotsheet-9.pdf>.

⁹ See, e.g., Eric A. DeGroff & Kathleen A. McKee, *Learning Like Lawyers: Addressing the Differences in Law Student Learning Styles*, 2006 BYU EDUC. & L.J. 499, 521, 546–47 (2006) (demonstrating a statistical correlation among law student LSAT scores, law school GPA and learning style as measured by the Kolb Learning Style Instrument, and noting that as many as 25 percent of students in recent law school classes at their school entered law school with learning styles different from those of their professors and associated with relatively low law school performance); Robin A. Boyle, *Employing Active-Learning Techniques and Metacognition in Law School: Shifting Energy from Professor to Student*, 81 U. DET. MERCY L. REV. 1, 20 (2003) (observing that more than one-fifth of an 83-member class at St. John's University Law School “expressed a strong preference for learning visually”).

¹⁰ Robert Charles Clark, *The Rationale for Computer-Aided Instruction*, 33 J. LEGAL EDUC. 459, 467–69 (1983); Michael L. Richmond, *Teaching Law to Passive Learners: The Contemporary Dilemma of Legal Education*, 26 CUMB. L. REV. 943, 956–57 (1995/1996).

¹¹ Jacobson, *supra* note 4, at 151–52 (“[V]isual learners in law school may be disproportionately represented in the bottom of the class.”). Studies have shown that lawyers tend to be left-brained thinkers with a strong analytical preference. See, e.g., Chris Guthrie, *The Lawyer's Philosophical Map*

accustomed than their predecessors to thinking sequentially and logically and are ill-prepared for the rigorous questioning, sorting, cataloguing, and synthesizing of conceptual frameworks that are essential for legal analysis.¹²

Though the Millennials are typically adept at *finding* information, legal scholars have noted that they tend to be “superficial *processors* of information”¹³ and are “not accustomed to being reflective”¹⁴ or to “engag[ing] in the deeper thinking . . . that leads to more enduring learning.”¹⁵ Scholars have also described the Millennials as having short attention spans, which poses particular challenges for traditional law school pedagogy.¹⁶ Aware of these characteristics, commentators have suggested that a growing percentage of today’s law school population seem to lack the capacity or even the motivation to engage in the active learning that is necessary to acquiring the analytical skills essential to effective lawyering.¹⁷

Scholars began to recognize these trends and the challenges they would pose to legal education more than two decades ago, when Generations X and Y were first arriving on the law school scene.¹⁸ Reaction to these concerns by the legal academy has been slow, but significant. One response has been a proliferation in academic support programs designed to help at-risk students survive the rigors of the law school environment.¹⁹

and the Disputant’s Perceptual Map: Impediments to Facilitative Mediation and Lawyering, 6 HARV. NEGOT. L. REV. 145, 156 (2001) (finding that 90% of the lawyers sampled were left-brained thinkers).

¹² Numerous legal scholars have opined that students are often unprepared by undergraduate programs to engage in the active learning process required of a legal education. See, e.g., Paula Lustbader, *Construction Sites, Building Types, and Bridging Gaps: A Cognitive Theory of the Learning Progression of Law Students*, 33 WILLAMETTE L. REV. 315, 338 (1997); see also James Jay Brown, *Forging An Analytical Mind: The Law School Classroom Experience*, 29 STETSON L. REV. 1135, 1137 (2000).

¹³ Jeff Nevid, *Teaching the Millennials*, OBSERVER, May/June 2011, at 53–56 (emphasis added), available at <http://www.psychologicalscience.org/index.php/publications/observer/2011/may-june-11/teaching-the-millennials.html>.

¹⁴ Morin & Waysdorf, *supra* note 2, at 614.

¹⁵ Nevid, *supra* note 13, at 53–56.

¹⁶ McGaugh, *supra* note 2, at 123–25; MCNEILL, *supra* note 2, at 3; Morin & Waysdorf, *supra* note 2, at 614.

¹⁷ McGaugh, *supra* note 2, at 128; see also Craig Anthony Arnold, *How Do Law Students Really Learn? Problem-Solving, Modern Pragmatism, and Property Law*, 22 SEATTLE U. L. REV. 891, 895 (1999) (book review) (emphasizing that legal education requires active student engagement rather than passive learning); Christine N. Coughlin et al., *See One, Do One, Teach One: Dissecting the Use of Medical Education’s Signature Pedagogy in the Law School Curriculum*, 26 GA. ST. U. L. REV. 361, 382 (2010) (observing that today’s law students “do not always learn best in a linear fashion, and [that] taking relevant notes from a lecture is difficult for some”); Richmond, *supra* note 10, at 943–44, 956–57 (suggesting that students who are used to learning passively may be ill-prepared for the interactive learning required in law school).

¹⁸ See, e.g., Paul T. Wangerin, *Learning Strategies for Law Students*, 52 ALB. L. REV. 471, 476–78 (1988). Generation X, which consists of those born roughly between 1960 and 1980, share many of the traits of Generation Y, and in some ways have been even more challenged by the demands of legal education. *Id.*

¹⁹ See, e.g., Cynthia Schmidt & Ann L. Iijima, *A Compass for Success: A New Direction for Academic Support Programs*, 4 CARDOZO PUB. L. POL’Y & ETHICS J. 651, 651 & n.2 (2006) (pointing out that recent editions of the Law School Admissions Council’s Official Guide to Law Schools did not bother to report the presence of Academic Support Programs in law schools because all law schools apparently have some sort of ASP).

Another more recent response has been an increasing awareness by legal educators of the importance of adult learning styles²⁰ and a willingness to consider alternatives to the traditional Socratic approach in the classroom.²¹ A growing body of literature suggests that accommodating students' learning styles in some ways may be helpful to ensuring the success of legal education for the current generation.²² A question related to this issue is whether to permit, or even encourage, the classroom use of laptops by students as a way of accommodating their preferences for technology.

The use of laptops in law school classrooms has become so common that the Law School Survey of Student Engagement recently characterized the phenomenon as "*de rigueur*."²³ But while the current generation of students has embraced the use of laptops and other technology, acceptance by law professors of mobile devices and wireless access in the classroom has been mixed, and a growing number of professors have unplugged the Internet or implemented no-laptop policies.²⁴ This Article describes the implementation and results of a two-year experiment in which laptop use was banned from the author's first-year Property course.²⁵ The experiment was motivated by the author's perception that student engagement in class discussions had suffered increasingly as laptop use became more common. Though there was some concern initially with how students would react to the ban,²⁶ anonymous surveys at the end of each year suggested that the

²⁰ See, e.g., Arnold, *supra* note 17, at 894; Charles C. Schroeder, *New Students – New Learning Styles*, Sept.–Oct. 1993, CHANGE, at 21.

²¹ See, e.g., Gail B. Agrawal & F. Wendell Miller, Symposium, *The Future of Legal Education: Foreword*, 96 IOWA L. REV. 1449, 1450 (2011); Lauren Carasik, *Renaissance or Retrenchment: Legal Education at a Crossroads*, 44 IND. L. REV. 735, 736 (2011); Erwin Chemerinsky, *Rethinking Legal Education*, 43 HARV. C.R.-C.L. L. REV. 595, 595 (2008); Benjamin V. Madison III, *The Elephant in Law School Classrooms: Overuse of the Socratic Method as an Obstacle to Teaching Modern Law Students*, 85 U. DET. MERCY L. REV. 293, 294 (2008). The number of recent articles on law student learning styles and law school pedagogy are too numerous to list comprehensively, but Paula Young, of the Appalachian School of Law, has constructed an extensive bibliography of recent books and articles describing creative teaching methodologies used by law faculty. See Paula M. Young, *Bibliography of Books and Articles on Active Learning and other Techniques for Teaching Law*, INST. FOR L. TEACHING & LEARNING 3 (July, 2008), <http://lawteaching.org/resources/bibliographies/young-paula-activelearningbibliography200807.pdf>.

²² See, e.g., Aida M. Alaka, *Learning Styles: What Differences Do the Differences Make?* 5 CHARLESTON L. REV. 133, 138–39 (2011); Eric A. DeGroff, *Training Tomorrow's Lawyers: What Empirical Research Can Tell Us About the Effect of Law School Pedagogy on Law Student Learning Styles*, 36 S. ILL. U. L.J. 251, 264–65 (2012); Vernellia R. Randall, *The Myers-Briggs Type Indicator, First-Year Law Students and Performance*, 26 CUMB. L. REV. 63, 68 (1995/1996).

²³ LAW SCHOOL SURVEY OF STUDENT ENGAGEMENT, STUDENT ENGAGEMENT IN LAW SCHOOL: PREPARING 21ST CENTURY LAWYERS 13 (2008), http://lsse.iub.edu/2008_Annual_Report/pdf/j4u5h7e9/LSSSE_2008_Annual_Report.pdf.

²⁴ See *infra* text accompanying notes 39–52.

²⁵ To this point, the laptop ban has been applied only to the author's first-year property classes, where the number of students has varied from thirty-five to more than seventy. Students in the author's smaller upper-level classes are permitted to use their laptops, though there are times even during those classes when students are asked to close their laptops temporarily.

²⁶ Though a number of law professors have reported good success with a laptop ban, at the other extreme are examples such as one from Memphis, where students reportedly filed a complaint with the American Bar Association over frustration with their professor's no-laptop policy. See Eric Chen, *Laptops Nixed in Some Law Classes: Profs Split on Whether the Devices are Bane or Boon for Learning*,

policy was generally well accepted. The purpose of this Article is to suggest to the reader that: (1) a no-laptop policy should be seriously considered for most first-year doctrinal courses; and (2) if the policy is clearly explained and reasonably implemented, students and faculty will likely agree that life can go on in the classroom without laptops. The Article will first briefly sketch the historical context of the laptop issue, then address the rationale for banning the use of laptops in selected courses, and finally present relevant data from the author's student surveys reflecting their reactions to the policy as implemented.

II. HISTORICAL DEVELOPMENT OF THE LAPTOP ISSUE

From the introduction by Dean Langdell of the case method and Socratic approach at Harvard Law School in the 1870s, the dynamics of legal education remained largely unchanged for generations.²⁷ Gradually, however, students and faculty members changed in their way of thinking, and classroom instruction began to reflect both the learning styles and lifestyles of a new generation.²⁸ Computer technology, which had already become prominent in high school and college classes,²⁹ finally made its way into the law school environment in the early 1980s. In 1983, Chicago-Kent College of Law helped lead the way by opening one of the first law school computer labs in the country for student use.³⁰ The following year, the faculty and administration at Chicago-Kent opened two more on-campus labs and introduced a computer-training program for all incoming law

DAILY PENNSYLVANIAN (Apr. 13, 2006), http://www.thedp.com/article/2006/04/laptops_nixed_in_some_law_classes. The complaint was ultimately dismissed. *Id.*

²⁷ See, e.g., Frank J. Macchiarola & Joseph Scanlon, Student Author, *Lawyers in the Public Service and the Role of Law Schools*, 19 FORDHAM URB. L.J. 695, 696 (1992) (noting that at the turn of the twentieth century theoretical legal training superseded apprenticeship as the preferred method of legal education); see also Carrie Menkel-Meadow, *Narrowing the Gap by Narrowing the Field: What's Missing From the MacCrate Report – of Skills, Legal Science and Being a Human Being*, 69 WASH. L. REV. 593, 594 (1994).

²⁸ See generally J. T. Dillon, *Paper Chase and the Socratic Method of Teaching Law*, 30 J. LEGAL EDUC. 529 (1980); K. N. Llewellyn, *On What Is Wrong With So-Called Legal Education*, 35 COLUM. L. REV. 651 (1935); Robert S. Redmount, *Law Learning, Teacher-Student Relations, and the Legal Profession*, 59 WASH. U. L.Q. 853 (1981); Thomas L. Shaffer & Robert S. Redmount, *Legal Education: The Classroom Experience*, 52 NOTRE DAME LAW. 190 (1976); Gene R. Shreve, *Bringing the Educational Reforms of the Cramton Report into the Case Method Classroom – Two Models*, 59 WASH. U. L.Q. 793 (1981).

²⁹ See, e.g., Andrew Molnar, *Computers in Education: A Brief History*, THE JOURNAL (June 1, 1997), <http://thejournal.com/Articles/1997/06/01/Computers-in-Education-A-Brief-History> (stating that over two million students in higher and secondary education used computers in classes by 1974, and that by 1975, 23% of secondary schools were using computers in classroom instruction). But see Winnie Hu, *Seeing No Progress, Some Schools Drop Laptops*, N.Y. TIMES, May 4, 2007, at A3 (noting that secondary school districts have begun abandoning programs providing free laptops to students due to students' misuse of the instruments, a failure to observe any documented positive results, and, in the words of one teacher, concern that "the art of thinking is being lost").

³⁰ Richard A. Matasar & Rosemary Shiels, *Electronic Law Students: Repercussions on Legal Education*, 29 VAL. U. L. REV. 909, 914 (1995) (noting that establishment of the computer lab and training of incoming law students were initially designed to strengthen the law school's legal research and writing mission).

students.³¹ Though the use of computers by both law students and faculty was still the exception in the early 1980s—and few laptops could be seen in law school classrooms—some on law school faculties began to recognize the potential of computers at least to facilitate pre-class preparation and enliven their lectures.³²

Once introduced, the new technology expanded quickly. In the early 1990s, law schools following the lead of Chicago-Kent and a handful of other institutions began experimenting with the development of electronic casebooks³³ and the inauguration of electronic classes—sections in which all students were required to have laptops with them in class.³⁴ By the end of the 1990s, the computer's potential had so captivated the legal academy that those law schools that had not been on the cutting edge a decade earlier were generally striving to catch up.³⁵

It was not until the early 2000s that faculty members began to question the wisdom of jumping headlong into the computer revolution.³⁶ There was a growing unease in some circles that the new technology in the hands of students in the classroom might actually be counter-productive.³⁷ Yale law professor, Ian Ayres, was among the first to sound the alarm, registering surprise at how “brazenly” his students had resisted the laptop restrictions he tried to impose.³⁸

What began as expressions of reservation by Professor Ayres and a handful of others in the early 2000s has now become, by some accounts, a full-blown “backlash” of professors banning laptops or denying Internet

³¹ *Id.*

³² Charles D. Kelso & J. Clark Kelso, *How Computers Will Invade Law School Classrooms*, 35 J. LEGAL EDUC. 507, 509 (1985) (describing the use of computers by law school faculty for class preparation and “classroom enhancement,” and predicting that they would one day also “affect student preparation”).

³³ Matasar & Shiels, *supra* note 30, at 921.

³⁴ Robert E. Oliphant, *Using “Hi-Tech” Tools in a Traditional Classroom Environment – A Two Semester Experiment*, 9 U. RICH. J.L. & TECH. 5, 5–8 (2002/2003) (reporting the results of a test comparing student performance in a traditional law school classroom versus one in which all students were required to have laptops).

³⁵ See Paul L. Caron & Rafael Gely, *Taking Back the Law School Classroom: Using Technology to Foster Active Student Learning*, 54 J. LEGAL EDUC. 551, 555–56 (2004) (“During the 1990s the ‘technology bandwagon’ rolled virtually unchecked into law schools.”).

³⁶ *Id.* at 556 (pointing to University of Virginia Law Professor Douglas L. Leslie’s argument that the use of PowerPoint slides by teachers and laptops by students “destroy[ed] classroom interactions and create[d] a passive-learning environment[,]” and generally describing the faculty reaction at law schools across the country as a “backlash”).

³⁷ John Schwartz, *Professors Vie With Web for Class’s Attention*, N.Y. TIMES (Jan. 2, 2003), <http://www.nytimes.com/2003/01/02/us/professors-vie-with-web-for-class-s-attention.html> (noting that, at the same time university administrators were “rushing toward a wireless future” in the early 2000s, professors were complaining that laptops in the classroom were posing “a growing challenge”).

³⁸ Ian Ayres, *Lectures vs. Laptops*, N.Y. TIMES, (Mar. 20, 2001), <http://www.nytimes.com/2001/03/20/opinion/20AYRE.html>.

access during class.³⁹ Though many academics still express excitement about the new technology,⁴⁰ a growing number of professors have characterized the presence of laptops in the classroom as a “distraction”⁴¹ and a “pedagogical nuisance[.]”⁴² The effect of this debate is that many law schools are reconsidering their initial embrace of computer technology and becoming more deliberate in their thinking about how the entire matter should be managed. Specific approaches have varied. A few schools, including the University of Chicago, have either disabled Internet access in most or all of their classrooms school-wide,⁴³ or at least have seriously considered doing so.⁴⁴ A larger number of schools, including Michigan, Virginia, and Vanderbilt, have installed mechanisms that enable professors to block or regulate Internet access in classrooms at their discretion.⁴⁵ Most schools seem simply to permit individual professors to regulate or ban the use of laptops in their classrooms with prior administrative approval.⁴⁶ Surprisingly, the reaction against laptop use in the classroom has now become so pronounced that there is retrenchment even among schools—including Chicago-Kent—that historically led the way in technological development.⁴⁷

³⁹ Carrie B. Fried, *In-Class Laptop Use and its Effects on Student Learning*, 50 COMPUTERS & EDUC. 906, 907 (2008) (concluding that more and more faculty are banning laptops from their classrooms because of perceptions that they distract students and detract from learning).

⁴⁰ See *infra* note 48 and accompanying text.

⁴¹ Fried, *supra* note 39, at 907.

⁴² Jill Schachner Chanen, *Profs Kibosh Students' Laptops*, A.B.A. J., Nov. 2007, at 16 (quoting Suffolk University law professor Kate Nace Day).

⁴³ 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, 189 (2011); see also Jana R. McCreary, *The Laptop-Free Zone*, 43 VAL. U. L. REV. 989, 997 (2009) (explaining that the goal of having “a terrific and interesting classroom experience” and of facilitating a student-faculty “exchange of ideas in a thorough, engaging manner . . . [was] too important to allow diversions”) (quoting Dean Saul Levmore).

⁴⁴ See Paras D. Bhayani, *HLS Debates Laptops in Class*, HARV. CRIMSON (Apr. 11, 2006), <http://www.thecrimson.com/article/2006/4/11/hls-debates-laptops-in-class-as/> (reporting on a Harvard Law faculty panel discussing the merits of following the lead of the Harvard Business School, which denies students access to the wireless network when in class by means of linkages in their course schedules to Wi-Fi access); Maureen A. Howard, *Laptops in Class: A Professional Virus*, HUFFINGTON POST (Mar. 28, 2010, 7:08 PM), http://www.huffingtonpost.com/maureen-a-howard/laptops-in-the-classroom_b_516434.html (reporting that a group of 1L professors at Harvard Law School had voted recently to ban laptops from all of their first-year courses).

⁴⁵ Eric Finkelstein, *No Logoff in Fight over Laptops in Class: Law Students, Professors Debate Classroom Bans*, NAT'L L.J., June 26, 2006; Leigh Jones, *Web Surfing Through Torts: Classroom Laptops can be both Useful Tools and High-Tech Distractions*, NAT'L L.J., Sept. 12, 2005; Tracy L. McGaugh, *Laptops in the Classroom: Pondering the Possibilities*, 14 PERSP.: TEACHING LEGAL RES. & WRITING 163, 165 (2006) (reporting that Internet blocking devices have been installed in the classrooms of “[m]any schools”).

⁴⁶ See, e.g., Fried, *supra* note 39, at 907 (noting efforts by faculty members at the University of Kansas, the University of Pennsylvania and BYU, among others, to block Internet access or ban laptop use in their classrooms).

⁴⁷ See, e.g., Tresa Baldas, *Laptops in Class may give Law Students an Edge*, NAT'L L.J., Jan. 12, 2009 (reporting that professors at Chicago-Kent were trying to ban laptops from the classroom due to the distraction they caused); see also Chanen, *supra* note 42, at 16 (“The number of faculty members banning laptops at Duke University School of Law prompted a reversal of [Duke’s previous] laptop requirement”); Jones, *supra* note 45 (noting that the University of Minnesota Law School, which had begun leasing all law students school-issued laptops just a year earlier, was now implementing a

Where professors have been given discretion on the issue, approaches have also varied. At one extreme are faculty members who have welcomed the new technology or concluded that its presence in the classroom is inevitable, and have therefore tried to incorporate it into the learning process.⁴⁸ Others have handled the issue by imposing temporary bans,⁴⁹ prohibiting laptops in specific sections of the classroom in order to minimize distractions to other students,⁵⁰ or permitting students to use laptops but imposing restrictions on how or when they are used.⁵¹ Professors at the other extreme, who have banned laptops entirely or have blocked Internet access for their students, have grown in number in recent years or at least have become more vocal.⁵²

III. THE RATIONALE FOR BANNING LAPTOPS IN FIRST-YEAR DOCTRINAL COURSES

Articles addressing the benefits and drawbacks of laptops in the classroom are so numerous that a comprehensive review of “pros and cons” is both unnecessary and beyond the scope of this work. Briefly, however, writers advocating *for* laptops have done so on the basis that: (1) they are helpful educational tools;⁵³ (2) their use in the classroom prepares law students for later practice;⁵⁴ (3) they make note-taking more efficient;⁵⁵ and

policy forbidding students from using their computers “for anything other than school-related activities while in class”).

⁴⁸ See, e.g., Jennifer Jolly-Ryan, *Bridging the law School Learning Gap Through Universal Design*, 28 *TOURO L. REV.* 1393, 1410 (2012) (suggesting that the “better solution” to the distraction laptops present “is for law professors to . . . become more engaging to law students . . . and use technology as an effective teaching tool”).

⁴⁹ McCreary, *supra* note 43, at 1041–42 (recommending the potential of a temporary one or two week ban on laptops).

⁵⁰ *Id.* at 1038.

⁵¹ Robin A. Boyle, *Should Laptops be Banned? Providing a Robust Classroom Learning Experience Within Limits*, 20 *PERSP.: TEACHING LEGAL RES. & WRITING* 8, 8 (2011) (advocating the use of laptops in the classroom—particularly in skills courses such as Legal Research and Writing—but suggesting that their use be subject to controls); see also Kevin Yamamoto, *Banning Laptops in the Classroom: Is it Worth the Hassles?*, 57 *J. LEGAL EDUC.* 477, 494 (2007) (“One professor suggests monitoring students’ activity by moving around in the classroom and avoiding or minimizing pauses or delays in presenting the material.”).

⁵² Yamamoto, *supra* note 51, at 483–84 (reporting that professors from Georgetown, Harvard, NYU, Rutgers, Newark, Memphis, Pennsylvania and Texas had instituted bans on laptops in the classroom, and noting reports of other law schools considering laptop prohibitions school-wide); see also Carrie Menkel-Meadow & Mark Tushnet, *From The Editors*, 57 *J. LEGAL EDUC.* 475, 475 (2007) (citing reports that “more and more individual professors and whole institutions are considering or have adopted bans on laptops in the classroom”).

⁵³ See, e.g., Robin R. Anderson & Bryn A. Poland, *Uplifting Legal Education*, 75 *J. KAN. B. ASS’N* 24, 24 (2006); Caron & Gely, *supra* note 35, at 553–54 (suggesting that students with specific learning styles may benefit from the use of laptops); Murray, *supra* note 43, at 192 (likewise suggesting, among other things, that students with particular learning styles may especially benefit from the use of laptops).

⁵⁴ Murray, *supra* note 43, at 194–98 (noting that some professors advocate the use of laptops because they believe that there is a required “digital literacy our students will need [in a modern law] practice,” but suggesting, on the contrary, that today’s younger students are already technologically proficient).

⁵⁵ *Id.* at 203.

(4) they facilitate class preparation.⁵⁶ Some have further suggested that forbidding students to use laptops in the classroom: (1) is paternalistic;⁵⁷ (2) fails to address the real causes of boredom and distraction;⁵⁸ (3) may draw unwelcome attention to disabled students who receive exemptions from no-laptop policies;⁵⁹ (4) punishes all students for the misdeeds of some;⁶⁰ and (5) is unnecessary because today's younger students are better able to multitask.⁶¹

The arguments most often advanced *against* laptops are that: (1) their use in the classroom reduces students' engagement in class discussion;⁶² (2) their use is counter-productive to the active learning environment necessary for the development of critical thinking skills;⁶³ and (3) even if they were not detrimental to the users themselves, they are a distraction for other students seated near or behind them.⁶⁴ Their use during class may also impede the development of reflective listening skills that are so critical to the practice of law. As to the charge that banning laptops is paternalistic, the response has been that professors have both the right and the responsibility to foster professional behavior in their students.⁶⁵

⁵⁶ Baldas, *supra* note 47 (noting that a study by Indiana University of more than 29,000 students at 85 law schools "found that students who frequently used their laptops to take notes, review ideas from past lectures or read a self-prepared case brief were more likely to come to class prepared, contribute to class discussions[,] . . . synthesize material across courses [and] . . . work hard to meet faculty expectations").

⁵⁷ McCreary, *supra* note 43, at 1006; Murray, *supra* note 43, at 193–94.

⁵⁸ See, e.g., Catherine Ross Dunham, *Stretching Toward the Future: A View of Laptop Computers from both Sides of the Screen*, L. TCHR., Spring 2007, at 1–2; Ann Lousin, *Laptops in the Classroom*, NAT'L L.J., July 10, 2006 (letter to the editor); Oscar Michelen, *My take on Laptops in the Classroom – No Problem*, COURTROOM STRATEGY (Mar. 21, 2011), <http://www.courtroomstrategy.com/2011/03/my-take-on-laptops-in-the-classroom-no-problem/>; Justin Reich, *Laptops in the Classroom: Mend it, Don't End it*, CHRISTIAN SCI. MONITOR (May 15, 2007), <http://www.csmonitor.com/2007/0515/p09s01-coop.html>.

⁵⁹ See, e.g., *Laptop Computer in Classroom Policy*, U. WASH. SCH. L., <http://www.law.washington.edu/students/academics/LaptopPolicy.aspx> (last updated Apr. 26, 2012).

⁶⁰ Yamamoto, *supra* note 51, at 482 (acknowledging that this is an argument some faculty members have raised).

⁶¹ See, e.g., Floyd et al., *supra* note 8, at 274–75.

⁶² See, e.g., Nancy G. Maxwell, *From Facebook to Folsom Prison Blues: How Banning Laptops in the Classroom made me a Better Law School Teacher*, 14 RICH. J.L. & TECH. 4, 4–6 (2007) (recounting that the increase in laptops in the author's classroom over the years coincided with a loss of student engagement); see also Oliphant, *supra* note 34, at 34 (“[C]ontinuous accessibility to a laptop computer provided an ongoing, almost irresistible temptation for some students to play games, send e-mail, or indulge in other activities unrelated to classroom discussion.”); Timothy Snyder, *Why Laptops in Class are Distracting America's Future Workforce*, CHRISTIAN SCI. MONITOR (Oct. 7, 2010), <http://www.csmonitor.com/commentary/opinion/2010/1007/why-laptops-in-class-are-distracting-america-s-future-workplace> (noting the prevalence of YouTube, Hulu, TV shows and video clips during lectures at some of America's “very best” schools); Jeff Sovern, *Laptops in Class: How Distracting are they?*, CHRISTIAN SCI. MONITOR (June 6, 2011), <http://www.csmonitor.com/Commentary/Opinion/2011/0606/Laptops-in-class-How-distracting-are-they>.

⁶³ See, e.g., Floyd et al., *supra* note 8, at 275; Yamamoto, *supra* note 51, at 9.

⁶⁴ See, e.g., Yamamoto, *supra* note 51, at 488 (commenting on the visual distraction created by upright screens located throughout the classroom); Finkelstein, *supra* note 45 (noting the distracting sound created by nearby typists).

⁶⁵ See, e.g., Jones, *supra* note 45 (“Whether students want to pay attention is a function of their own choice . . . but helping them stay focused is also part of a teacher's responsibility.”) (quoting Vanderbilt

Of all the justifications for banning or restricting laptops, perhaps the most cogent is that—unless they are truly incorporated into the structure of the class—the distraction they cause interferes with the learning process and encourages students to become passive receptacles of information. One of the primary goals of a legal education should be to help students learn how to think analytically—to read critically, listen carefully, reason logically, and understand both the structures and relationships of the concepts discussed in class.⁶⁶ This objective is arguably even more important now than with past generations because a growing percentage of our students are not particularly adept at thinking and working through the analytical process.⁶⁷ The problem with laptops—whether students are using them in good faith to transcribe class discussions or are merely surfing the web or chatting with friends—is that they arguably interfere with the concentration necessary for students to practice and learn these basic skills.

David Kolb, creator of the Kolb Learning Style Inventory,⁶⁸ has explained that the learning process consists essentially of two elements—information absorption and information processing.⁶⁹ Initially, new information is absorbed through the senses—reading, observing, hearing, and even speaking.⁷⁰ Ultimately, however, that information must be “processed” in order to be understood, remembered, and used appropriately.⁷¹ Kolb suggests that the most effective learning takes place when new information is processed through an entire learning cycle that includes both reflective observation of, and active experimentation with, a new concept.⁷² This processing of information is what enables the learner to

law professor John Goldberg); *see also* Howard, *supra* note 44 (“Our role as post-graduate educators should include mentoring students about post-graduate professional expectations and professional behaviors. Allowing students to surf the internet unrelated to class work hampers their ability to learn both substantive information and professional behavior needed for a smooth and successful transition into the post-graduation workforce.”).

⁶⁶ Yamamoto, *supra* note 51, at 514 (“[T]he primary task of law school . . . [is] teaching how to ‘think like a lawyer.’ If we fail in this task we are sending out students more ill-prepared for the analytical rigors of practice than those students who came before them.”).

⁶⁷ *See supra* text accompanying notes 11–12.

⁶⁸ DAVID A. KOLB, KOLB LEARNING STYLE INVENTORY: KLSI WORKBOOK VERSION 3.1.8 (HayGroup eds., 2007).

⁶⁹ DAVID A. KOLB, FACILITATOR’S GUIDE TO LEARNING 14 (HayGroup eds., 2000).

⁷⁰ *See* Jacobson, *supra* note 7, at 151–56 (noting that verbal learners tend to absorb information effectively through written text, visual learners through pictures or other graphics, aural learners by listening, and oral learners by “talking it out”).

⁷¹ Charalampous Mainemelis et al., *Learning Styles and Adaptive Flexibility: Testing Experiential Learning Theory*, 33 MGMT. LEARNING 5, 5 (2002) (citing DAVID A. KOLB, EXPERIENTIAL LEARNING: EXPERIENCE AS THE SOURCE OF LEARNING AND DEVELOPMENT 20 (1984), available at <http://academic.regis.edu/edu205/kolb.pdf>).

⁷² Kolb, *supra* note 68, at 5. An individual’s strengths and preferences regarding how new information is absorbed and processed determine that person’s learning style according to Dr. Kolb’s classification. *Id.* Kolb and other educational psychologists have classified the information processing function in a variety of ways, but their models consistently reflect the centrality of the information processing stage to the dynamics of learning. *Id.* *See generally* G. Pask, *Styles and Strategies of Learning*, 46 BRIT. J. EDUC. PSYCHOL. 128 (1976); H. A. Witkin et al., *Field-Dependent and Field-Independent Cognitive Styles and Their Educational Implications*, 47 REV. EDUC. RES. 1 (1977); H. A. Witkin, *The Nature and Importance of Individual Differences in Perception*, 18 J. PERSONALITY 145

internalize the data, place it into context, and relate it to his previous knowledge and experience.⁷³ Only by working with information in this way can a learner properly catalog the data so that it can be retrieved at the appropriate time and used to address new situations.⁷⁴

A recent article by Professor M. H. Sam Jacobson describes the specific steps involved in this “processing” of new information by learners and helps explain why a lack of focus by students in the classroom can impair that aspect of the learning cycle.⁷⁵ According to Jacobson, the first stage of information processing requires the learner to sort through all of the stimuli competing for attention in the classroom, discern which of it is relevant, and commit the relevant information to “working memory.”⁷⁶ Next, the student must “rehearse” the new information, working with it long enough and deeply enough to understand it and process it into long-term memory.⁷⁷ Ultimately, the student must associate the information with other concepts and experiences already stored in long-term memory, either create or modify conceptual structures, and establish useful hierarchies.⁷⁸ In a law school context, much of the processing of data into long-term memory and development of structural and hierarchical relationships may be accomplished by reviewing and outlining course material throughout the semester.⁷⁹ But the process of first committing information to working memory and then rehearsing it so as to understand and remember it long-term should occur initially in the classroom.⁸⁰

Jacobson explains that the first stage of information processing described above—committing the new material to working memory—requires a learner to remember and rehearse the information long enough to associate it with other knowledge.⁸¹ Other scholars have described this process similarly, referring to the initial absorption and memorization of new information as “[e]ncoding,” and to the initial storage of data for active processing as “short-term memory.”⁸² Regardless of the nomenclature used, all authorities emphasize that encoding data to short-term, working memory requires significant conscious attention. Students must select from a lecture

(1949); *see, e.g.*, David P. Ausubel, *THE PSYCHOLOGY OF MEANINGFUL VERBAL LEARNING: AN INTRODUCTION TO SCHOOL LEARNING* 214–15 (1963).

⁷³ Jacobson, *supra* note 4, at 157–63.

⁷⁴ *See id.* at 173–74.

⁷⁵ *Id.* at 141.

⁷⁶ Jacobson, *supra* note 7, at 421–23.

⁷⁷ *Id.* at 425.

⁷⁸ *Id.* at 425–26.

⁷⁹ *Id.* at 427–28.

⁸⁰ *Id.* at 425. Jacobson’s explanation of the learning process suggests that hearing and understanding the meaning of a concept during lecture or class discussion is merely an interim step, not a long-term goal. *Id.* Committing the concept to long-term memory requires sustained, focused attention. *Id.*

⁸¹ *Id.*

⁸² *See, e.g.*, Floyd et al., *supra* note 8, at 269; Yamamoto, *supra* note 51, at 496–97.

or discussion those bits of information that are relevant, and must consider them with sufficient rigor to understand and remember them.⁸³ Students must be sufficiently engaged in the classroom process to weigh information and assess its relative significance within a substantive analytical hierarchy. Moreover, to accomplish what is necessary at this stage of information processing, students must “exercise cognitive control” over extraneous stimuli in order to avoid being distracted by the irrelevant.⁸⁴ The more extraneous stimuli present in the environment, the more difficult this task inevitably becomes. As Jacobson explains:

The learner must not only consciously attend to the task to be done, but must also exercise cognitive control of any interruptions and distractions from that task. Only those tasks attended to will be remembered, so if interruptions and distractions are not controlled, the right things may not be remembered.⁸⁵

The process of encoding data into short-term memory is even more difficult because bits of new information can be retained in working memory only briefly—no more than two seconds, according to the literature, unless a learner is actively processing the information.⁸⁶ Thus, the repetition needed to understand and retain new information presented in class must occur in real time during the course of the lecture or discussion.⁸⁷ In addition, researchers have discovered that the human brain is limited with respect to the amount of information it can hold and process at any given time. Traditional thinking was that the brain could retain, and work with, five to nine specific bits of information simultaneously.⁸⁸ More recent studies, however, suggest that the brain is even more limited than that—able to hold only two to five bits of information depending on the nature and complexity of the data and how the information is “chunked,” or pieced together.⁸⁹ The result of these cognitive limitations is that a student must be able to focus narrowly on the matter at hand, and for a sufficient length of time, for relevant information to be both received and initially processed. Extraneous input generated by students surfing the web, text messaging, or engaging in other tasks unrelated to the classroom discussion would

⁸³ Jacobson, *supra* note 7, at 421.

⁸⁴ *Id.* at 421–23.

⁸⁵ *Id.* at 422–23, 430 (“Attentional control, then, is an essential skill for a person to successfully engage in the higher-order cognitive tasks required of legal analysis and reasoning. A person must be able to shut out distractions, including other cognitive work, when attending to cognitively complex tasks.”).

⁸⁶ *Id.* at 425.

⁸⁷ *Id.*

⁸⁸ *Id.* at 424.

⁸⁹ *Id.*

naturally compete for the brain's finite short-term storage capacity.⁹⁰

Even this description understates the demands of the typical law school classroom. The development of analytical skills requires substantially more than memorization of new data. The mastery of new legal concepts requires that students also understand the relevance and interrelationship of such concepts and how to apply them to resolve complex legal problems. It should not be surprising, then, if a room full of students simultaneously involved in multiple unrelated tasks appears to be disengaged in the classroom and is challenged to apply the concepts appropriately at a later time.⁹¹

The use of laptops has been justified by some on the basis that the current generation of students is somehow uniquely capable of multitasking.⁹² What might otherwise be criticized as inattention—or, at best, selective attention—is excused as this generation's way of enhancing productivity during less stimulating portions of a class.⁹³ Others, however, have begun to suggest that what passes for “multitasking” is more aptly described as “continuous partial attention.”⁹⁴ No matter how accustomed Generations X and Y may be to juggling multiple activities, when focus shifts from one task to another, both tasks are “competing for the same cognitive resources.”⁹⁵ Thus, when students are trying to accomplish multiple tasks simultaneously, “their ability to reason at a high level is severely impaired.”⁹⁶

A recent study by the Department of Psychology and Brain Research Institute at UCLA provides important insights relevant to this issue.⁹⁷ The study's findings support the position that multitasking is

⁹⁰ Helene Hembrooke & Geri Gay, *The Laptop and the Lecture: The Effects of Multitasking in Learning Environments*, 15 J. COMPUTING HIGHER EDUC. 1, 3–4 (2003), https://www.stanford.edu/dept/CTL/ClassroomLaptops/wikiupload/1/17/Multitasking_Hembrooke.pdf (emphasizing that psychological research on memory and learning is founded upon the well-established “notion that there is a fixed amount of cognitive resources upon which the processor may draw”).

⁹¹ See *supra* note 62 and accompanying text.

⁹² See, e.g., Floyd et al., *supra* note 8, at 274–75; Murray, *supra* note 43, at 194.

⁹³ See, e.g., Lousin, *supra* note 58 (opining that there is no way to police laptop usage in class, and that professors who ban them are “putting their own egos before their students’ interests”); Michelen, *supra* note 58 (“It is the professor’s job to make the class interesting; encourage participation; make the students want to hear you instead of a repeat of ‘The Office.’”); Reich, *supra* note 58 (suggesting that it is time for teachers to step to the side of the stage and take a more supplemental role in the classroom experience).

⁹⁴ Yamamoto, *supra* note 51, at 501; see also Hembrooke & Gay, *supra* note 90, at 2 (“[T]here is a long tradition of psychological and media communication research that indicates that our ability to engage in simultaneous tasks is, at best, limited.”).

⁹⁵ Jacobson, *supra* note 7, at 437; see also Hembrooke & Gay, *supra* note 90, at 3 (citing numerous research papers on the issue of multitasking, beginning with Broadbent in 1958, all of which suggest that “there is a limited processing channel that information is filtered through,” and “[w]hen this channel becomes overloaded . . . some of the information is filtered out”).

⁹⁶ Bhayani, *supra* note 44.

⁹⁷ See Karin Foerde et al., *Modulation of Competing Memory Systems by Distraction*, 103 PROC. NAT’L ACADEM. OF SCIENCES 11,778 (2006), available at <http://www.poldracklab.org/Publications/pdf/Proc%20Nat%20Acad%20Sci%20USA%202006%20Foerde-1.pdf>.

counter-productive to learning in a situation that calls for higher-order thinking.⁹⁸ Researchers tested adult subjects to determine the effect of having to perform a secondary task on their ability to learn—and then apply—new information.⁹⁹ The report distinguished what the researchers called “habit learning,” or the gradual acquisition of automatic behavioral tendencies, from “flexible knowledge,” or newly acquired understanding that can be applied flexibly and creatively to new situations outside the immediate training context.¹⁰⁰ The study found that “habit learning” did not require focused attention or the use of working memory, and was therefore not adversely affected by distraction.¹⁰¹ Acquiring flexible knowledge, however, required “elaborative encoding and . . . retrieval” and was significantly inhibited by the distraction of having to perform a secondary task.¹⁰² Thus, while all of the subjects were able to acquire bits of information regardless of the presence of distractions, those who were distracted by having to perform a secondary task were less effective later in retrieving that information and applying it in a problem-solving context.¹⁰³ These findings suggest that students who are distracted by extraneous stimuli during a lecture or discussion might have the data stored in their brains, but the depth of their understanding—and consequently their ability to apply the information when required to later in other contexts—could be substantially impaired because the focus necessary to master the material was absent.

The research at UCLA does not stand alone in suggesting that multitasking in the classroom impairs higher-order learning. Indeed, that study is one of many in a long line of research yielding similar results. Cornell professors Helene Hembrooke and Geri Gay, for example, have performed multiple experiments with upper level Communication students to ascertain the effects of laptop use in the classroom on students’ memory of lecture contents.¹⁰⁴ Groups of students—some with open access to laptops during the lectures and others with laptops closed—were exposed to identical lectures and tested immediately thereafter to determine whether the use of laptops affected how much each group remembered.¹⁰⁵ During the lectures, the researchers also monitored the nature of the students’ laptop use to determine whether they had used their computers for purposes directly related to the class or for unrelated, individual “browsing.”¹⁰⁶ The authors repeatedly found that students who used their laptops during the

⁹⁸ *Id.* at 11,778.

⁹⁹ *Id.* at 11,778, 11,782.

¹⁰⁰ *Id.* at 11,778.

¹⁰¹ *Id.*

¹⁰² *Id.*

¹⁰³ *Id.*

¹⁰⁴ Hembrooke & Gay, *supra* note 90, at 3, 19.

¹⁰⁵ *Id.* at 8.

¹⁰⁶ *Id.* at 9.

lectures could recall significantly less content than those whose laptops had been closed.¹⁰⁷ They further found, in follow-up research, that students in the open laptop sections suffered memory decrements regardless of whether they had been using their computers for class-related tasks or for unrelated browsing.¹⁰⁸

Professors Hembrooke and Gay emphasized that their findings were consistent with a substantial body of previous research measuring the effect of multitasking on the learning process.¹⁰⁹ Citing a series of studies beginning in the 1950s, Hembrooke and Gay asserted that, when students are engaged in a multitasking environment, it has been established “[a]lmost without exception that performance on one or both task[s] suffers a decrement as a direct result of having to perform the two tasks simultaneously.”¹¹⁰ Indeed, the authors emphasized, “the finding of a performance decrement under divided attention conditions is so robust as to consider it a guiding theoretical principle in these various fields of attention, learning and memory.”¹¹¹

These findings should at least cause law professors to reflect upon the wisdom of permitting the use of laptops in classes where the goal is to encourage higher-order thinking and to enhance students’ analytical skills. Though laptops may be well integrated into specific courses, their presence in other classrooms is more likely to create distractions that inhibit the quality of learning. One could argue that, in the first-year substantive courses where students are first exposed to the process of legal analysis, laptops are especially likely to be counter-productive. But if a laptop ban were considered, what reaction would there be from a generation of students who have come to depend on computers and other technology? The data described in the next section suggests that a laptop ban may be successfully implemented if the rationale is explained to students in advance and the policy is implemented in a reasonable way.

IV. IMPLEMENTATION OF A NO-LAPTOP POLICY

A. How the Policy was Implemented

The laptop ban discussed in this Article was implemented in the author’s first-year Property class, which at that time was essentially a two-semester, six-hour course. When the policy was implemented, the course was taught in relatively large sections, with a registration of sixty-five to

¹⁰⁷ *Id.* at 8.

¹⁰⁸ *Id.* at 9. This suggests that even class-related use of laptops may diminish students’ capacity for reflective listening.

¹⁰⁹ *Id.*

¹¹⁰ *Id.* at 4.

¹¹¹ *Id.*

seventy students per section.¹¹² The policy entailed an absolute ban on laptop use by any student who did not have a medical or other justification requiring such use.¹¹³ As a “trade-off” for the loss of their laptops, students were provided scaffolding, or skeletal, outlines one or two days before each class period, covering the material to be discussed that day.¹¹⁴ The primary purpose of the outlines initially was to help guide the students in their note taking during class, since they were required to take any notes by hand. The outlines were placed on the University’s Blackboard system, however, to make it easier for students to transcribe their handwritten notes onto their computers after class if they chose to do so. During the second year of the experiment, the outlines were made available to students further in advance of each class period because the students had made it clear that the outlines were helpful in comprehending their reading assignments and preparing for class discussion.¹¹⁵

Advance approval was obtained from the law school administration to implement the policy on an experimental basis. To avoid surprise, the policy was announced to the students in the course syllabus, and the rationale was explained at the beginning of the first class period. In the first year of implementation, students were also told that the policy was experimental and that their feedback would be sought at the end of the year.¹¹⁶

Feedback was generated through the use of a supplemental

¹¹² Property is now among the first-year courses that are taught in smaller sections of 30-35 students at the author’s law school.

¹¹³ Since the no-laptop policy was first implemented, the author has granted disability waivers to two students. During the two-year study period, however, no student requested a waiver.

¹¹⁴ In this respect, the author’s laptop policy apparently was similar to the practice implemented by Professor Nancy Maxwell, of Washburn University School of Law, except that Professor Maxwell appears to have furnished material prior to her classes in the form of “key questions” rather than skeletal outlines—and, in addition, continued her practice of posting class notes on TWEN following the class periods. See Maxwell, *supra* note 62, at 51–54. An example of the author’s skeletal outlines is included as Appendix 2 to this article. Since the no-laptop policy was implemented, students have been told that they could tape record the classes if they felt they could not take notes fast enough to catch what was said. To the author’s knowledge, no student has done so.

¹¹⁵ Though originally implemented merely as a trade-off for denying students the use of laptops in class, the author has come to recognize that scaffolding outlines have independent value. Indeed, the authors of “Teaching Law By Design” have noted that providing students scaffolding, or skeletal, outlines can significantly enhance the quality of student note-taking and learning:

[S]tudies of student classroom note-taking reveal that even the best students record less than 90% of what their instructors believe is important and many students record as little as 9%. When instructors provide scaffolding in the form of skeletal note-taking outlines, however, student note-taking greatly improves. In fact, studies show students provided with skeletal note-taking outlines learn more and better than students who receive no such guidance from their professors and better than students who are given their instructors’ lecture notes.

MICHAEL HUNTER SCHWARTZ ET AL., *TEACHING LAW BY DESIGN: ENGAGING STUDENTS FROM THE SYLLABUS TO THE FINAL EXAM* 61 (Carolina Academic Press 2009). Other professors have also commented favorably on the benefits of skeletal outlines. See, e.g., Caron & Gely, *supra* note 35, at 558–59.

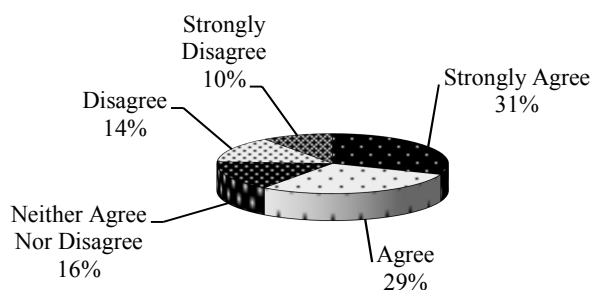
¹¹⁶ I no longer suggest to my students that the policy is an experiment, but I do encourage them to provide feedback on the policy as a part of their course evaluations. I have continued to receive about the same percentage of positive and negative responses.

evaluation form, which the author designed and distributed to the students as part of the law school's course evaluation process. The supplemental forms were completed in class during the last week of the spring semester, during the first two years of the no-laptop policy. Both the law school's evaluation form and the supplemental laptop evaluation form were anonymous in nature, and the author was absent from the room when they were completed. The participation rate in the supplemental evaluation process was 100%—66 students in the first year, and 69 in the second year, for a total of 135 respondents.¹¹⁷

B. Survey Results

Student feedback was positive overall, as reflected in Chart 1 below.¹¹⁸ Based on narrative explanations included on the evaluation forms, it was clear that the number of positive responses was enhanced by provision of the scaffolding outlines, which had been characterized as a trade-off for the laptop ban. A significant number of students, however, specifically expressed agreement with the laptop ban per se. A total of 60% agreed or strongly agreed with the policy as it was implemented. Slightly over three-fourths of the students were at least neutral with regard to the policy. Even among those who disagreed with the policy, numerous students commented that they enjoyed the class despite the absence of computers and considered the course to have been a valuable learning experience.

Chart 1: I believe that the policy precluding the use of laptops was a good policy for this course.



¹¹⁷ Responses were recorded separately for each year, but the results on each question were virtually identical on both surveys—i.e., no discernable change from one year to the next.

¹¹⁸ Feedback from my students appears to have been very similar to the results of student surveys reported by others who have implemented similar policies. See, e.g., Maxwell, *supra* note 62, at 60–61; Eugene Volokh, *Results of Student Survey About my no-Laptop-in-Class Experiment*, VOLOKH CONSPIRACY (Mar. 4, 2009 6:38 PM), <http://volokh.com/posts/1236209900.shtml>. This preponderance of positive student responses to no-laptop policies suggests that, whether or not students would choose such policies for themselves, most are willing to live with them if the policies are reasonably implemented and explained in advance.

A large majority of students acknowledged that laptops were used in their other classes for non-class purposes (see Chart 2 below, reflecting almost 90% agreeing or strongly agreeing that other students had used their laptops for purposes unrelated to class). Only a minority of the students suggested that they were significantly distracted by the use of computers in their other classes (see Chart 3). Nevertheless, more than one-third of the class asserted that they were at least sometimes distracted by other students' use of laptops.

Chart 2: Students in my other classes sometimes use their laptops for purposes unrelated to class.

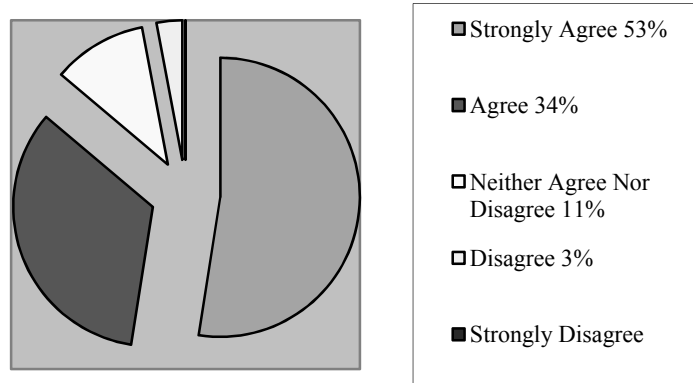
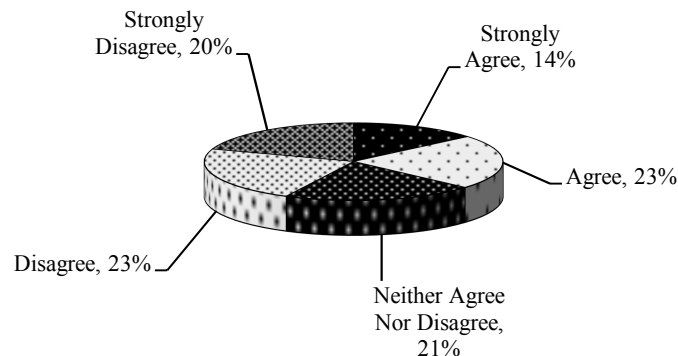


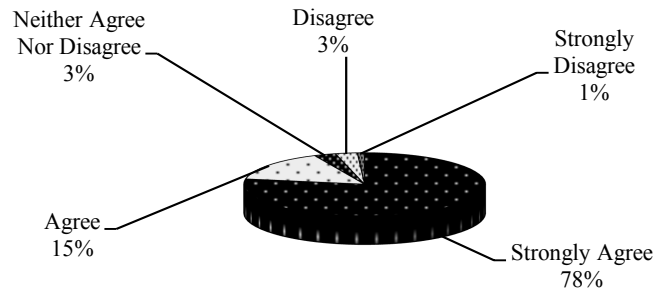
Chart 3: I sometimes find the use of laptops by students in my other classes distracting.



Student feedback regarding the scaffolding outlines was extremely positive, with 96% agreeing or strongly agreeing that the outlines were helpful (see Chart 4). Students reported that they used the outlines to: (1)

help them understand the reading assignments and prepare for class discussion; (2) help in preparing their own course outlines; and (3) review the course material for midterm and final exams.

Chart 4: I believe the outlines provided on Blackboard before each class were helpful.



V. CONCLUSION

The Millennial Generation, as a whole, is at ease with modern technology and uniquely predisposed to juggling multiple tasks. These traits, together with their energy, ambition, and self-confidence, have arguably gifted them for the demands of the legal profession in ways that previous generations may not have been. Many of them, however, are arriving at law school less prepared in other ways for the academic rigor that awaits them. Their learning styles, visual orientation, short attention spans, and previous learning experiences make them less suited for the focused and reflective thinking that are critical to learning legal analysis and linear reasoning.¹¹⁹ These circumstances create a significant challenge to legal educators, who are increasingly tasked with the responsibility of ensuring that these students are prepared for practice when they graduate.¹²⁰

In response to this challenge, legal educators have begun to reconsider whether traditional law school pedagogy is best suited for

¹¹⁹ See *supra* text accompanying notes 8–17.

¹²⁰ This situation, moreover, could be further exacerbated if law schools begin to lower admission standards in response to the downturn in applications or if a two-year *juris doctor* program becomes more common. See, e.g., Vivian Chen, *LSAT Scores at Top Law Schools are Dropping like Flies*, CAREERIST (Sept. 7, 2012, 9:56 AM), <http://thecareerist.typepad.com/thecareerist/2012/09/law-school-applications>; Elie Mystal, *ABA Considers Dropping LSAT Requirement for Admission to Law School*, ABOVE THE LAW (Jan. 13, 2011, 2:24 PM), <http://abovethelaw.com/2011/01/aba-considers-dropping-lsat-requirement-for-admission-to-law-school/>; Shawn P. O'Connor, *Look for These 3 Law School Trends in 2012*, U.S. NEWS (Jan. 2, 2012), <http://www.usnews.com/education/blogs/law-admissions-lowdown/2012/01/02/look-for-these-3-law-school-trends-in-2012> (predicting an increase in the number of accelerated law programs available nation-wide).

reaching the new generation of students. Professors are giving greater emphasis to understanding adult learning styles and incorporating that knowledge into their instruction.¹²¹ The theory is that learners can be reached more effectively if taught, at least in part, in a manner consistent with their learning preferences and strengths.

The question presented in this Article is whether, under these circumstances, law professors are doing students a favor by incorporating into their instruction students' preferences for learning through technology. The new generation of law students is obviously comfortable with computer technology, and many are skilled at acquiring and absorbing new information through that means. Indeed, many of them have become almost dependent on computers for note taking and other academic tasks.¹²² The problem is that laptops also create distractions, which in turn makes more difficult the reflective thinking essential to learning critical reasoning skills.

This Article suggests that law professors might be doing their students a greater service by temporarily "unplugging" them from their computers, requiring them to learn part of the time (i.e., in the classroom) without their laptops. They can still return to technological aids outside of class, and the placement of scaffolding outlines on Blackboard for later downloading can facilitate that process. Forcing students to "slow down" a bit in the classroom, and hopefully focus more intently on the matter at hand may be critical in helping them learn to process and sort information more effectively.

A higher level of focus is arguably most critical in the first year of law school, when students are initially exposed to legal analysis and to the foundations of basic lawyering skills. Unless computer technology is effectively integrated into the classroom experience, the author suggests that professors of at least the first-year doctrinal courses seriously consider a ban or significant restrictions on the use of computers in their classes. Students will have differing opinions as to whether such a prohibition is warranted, but the feedback received from this experiment suggests that, for most of them at least, life can go on without laptops in the classroom.

¹²¹ See, e.g., SCHWARTZ ET AL., *supra* note 115, at 72–75.

¹²² As reflected in the comments in Appendix 1, the most common complaint by students frustrated with the no-laptop policy was the inability to keep up with the discussion and record a detailed set of notes.

APPENDIX 1
STUDENT COMMENTS

I. Statements Reflecting Agreement with the No-Laptop Policy

A. General Comments

While the use of laptops is convenient for all of my other classes, I feel specifically in [Property class] if laptops were allowed, the value of participation would decrease.

I was able to focus and comprehend the material. However, this may be due – in large part – to the outlines posted on Blackboard. Together this strategy was very effective.

The outline trade-off makes [the policy] acceptable.

For this class in particular, not using a laptop was beneficial, especially combined with the outlines The material in this class is such that it is easier to follow through listening or [the] outline than by typing notes.

Even though I use my laptop in every other class, I did not find it a problem to not use it here. I would rather have the structural outlines than have the ability to use my laptop.

Writing (physically) forces you to weed out the dicta and put down what is necessary for you to understand the material. Additionally, a laptop can be constraining when trying to diagram concepts.

I am an active learner and I assimilate more by actually writing.

[I agree with the policy] because you made up for it with the outlines. Otherwise, I would need a laptop to keep up.

[A no-laptop policy] is great only so long as the professor provides outlines prior to classes.

[The class] has become a more conversational class than any of the other ones we have, which I think is just great. I think it leads to more people ‘giving it a shot’ without being called on. I think your ban on the computers is showing good results!

Since [you] provide an outline it isn’t necessary to need a laptop to take notes quickly.

It’s easier to internalize the information when writing it. It’s also important to listen to what is being taught and when writing it’s easier to do that as opposed to just hearing what is being said.

[The no-laptop policy] forced me to be a more active participant in class.

I find it very distracting when a student is web-surfing, and the sounds of typing increase my anxiety.

[The laptop ban] reduced pressure to take notes transcript-style.

If students had their computer in class, I really believe the discussion would be of a lesser quality.

With the large amount of information in Property and multiple approaches to so many rules, it would be nice to be able to take notes on a laptop. On the other hand, I think I learn better from physically writing the notes.

B. The Policy Promoted Greater Focus

[The laptop ban] forces us to pay attention and be prepared, although sometimes my hand hurts from writing and it's easier to type than write.

Laptops in my other classes are necessary, but I found writing to be more engaging for this class.

I get very distracted so it helped focus.

Although [not having laptops] was an inconvenience, it forced me to pay attention and it took away distractions (temptation to look at and surf the web).

[I strongly agree with the policy] because I was forced to print out my brief and pay attention.

I don't think I could keep up with the discussion if I was typing all the time.

[The laptop ban] helps me focus more on class, rather than typing everything. The class outline really helps without the laptop.

[The policy] helped me take more careful note of the most relevant points.

I find I pay attention more in this class than other classes. The only reason I don't strongly agree [with the policy] is that I can type faster than I write.

[Because of the no-laptop policy] students were more engaged.

On the one hand, I was able to stay *very* focused (great!). On the other, collating, organizing, and keeping up with notes on computer is so efficient and cuts down on materials needed for class.

I was able to pay attention the entire class. Then, upon making my outline, I had to look at notes from class, and then implement them, which gave another hit of the material.

[The no-laptop policy] forces you to remain focused.

Although the use of laptops was prohibited, I do not feel it hindered my ability to learn or take notes. In actuality, I feel that the attention of the class as a whole was greater.

C. The Policy Helped Overcome Distractions From Students' Own Computers

It would have been very difficult for me to learn had I brought my computer since I am a habitual multi-tasker.

Laptops are a distraction, especially for myself; also [the laptop ban] forces my sometimes fleeting attention.

Over reliance on laptops is a detriment to learning. Many students use laptops to social network rather than take notes.

In classes with laptops, lots of people surf the web.

I think laptops can often be more of a distraction than anything. With the difficult subjects we've covered this year, I honestly think having a laptop in class would have affected my understanding.

Please keep class a no-laptop class. Students are getting carried away even watching sporting events during class. It is very disrespectful and distracting.

When I am able to use my laptop I can work on my outline as we cover the material. Having said that, there are many students who abuse the privilege and 'play' during class. Therefore, I understand the need for the policy.

Sometimes I get distracted by some people's typing sounds, and myself have some temptation to read news articles or something like that during the class time.

With the instructor providing outlines and active discussion in class, technology would merely be an additional distraction to myself and those around me.

The temptation to be a distraction is too great.

[Not having a laptop in class] forces you to pay attention. Because of this class's policy I have stopped using a laptop in a few of my other classes and have seen good results.

It did cut down on distractions; however, it made it more difficult to construct a coherent course outline.

My lack of discipline/propensity to get distracted by incoming e-mails, etc., would have affected my learning in this class were it not for the laptop policy.

I believe that not having laptops can diminish the class's distraction level. However, I prefer to take notes on my laptop, and appreciate being able to access on-line.

I hated this at first, but have found that it had a direct correlation with my learning the material better because I was less distracted and relied on my own thinking.

I feel I can take better notes *with* a laptop. However, as hard as it is to admit, I learned better without the distraction of my computer.

[The policy] helps cut back on distractions, but I find it easier to type notes.

Not having a laptop was an excellent idea because a distraction is gone and we are able to interact a lot more in class lectures. . . . [I]nstead of transcribing a lecture, I was paying close attention to the subject matter presented.

D. The Policy Limited Distractions Caused By Classmates' Computers

The use of laptops around me in most of my other classes has been very distracting.

Not allowing laptops lowers the distraction factor, but it would be helpful for the purpose of taking notes and not having to print every outline and case brief (go green!).

When students use laptops in class, the students around them are more distracted than the student using the laptop.

Laptops can be a distraction for those who use them and for those who don't.

I believe that precluding use of laptops puts everyone on the same level and removes distractions from the classroom. I also believe that it has helped to improve interaction. I really don't miss my laptop in this class.

Laptops are greatly distracting and by limiting their use class time seemed much more productive.

It was quiet.

People are on the internet in all other classes. [It was] very distracting. . . . Keep laptops out of Property.

Considering the difficulty of this class, it is important to have zero distractions.

I use hand-written notes anyway, so the overwhelming sound of people typing on laptops can be distracting.

It forced an amount of work that normally may not have been done and also limited distractions.

I would prefer a policy for all classes that would ban the use of laptops in class time.

Laptops can be very distracting during class.

[Other students' use of laptops was] distracting – both for the students who feel compelled to play solitaire and those around them trying to pay attention.

II. Statements Reflecting Disagreement with the No-Laptop Policy

A. Loss of Efficiency

Those who organize well on laptops should not be penalized for students who allow laptops to become a distraction.

It would be a better use of time to put notes right into an outline into a computer.

With my other courses I was able to use time more efficiently, by transferring (electronically) notes from class to my outline. Not being able to do that only cost me time. I cannot think of a benefit gained by forcing hand-written notes.

The preclusion of laptops were beneficial in some ways and detrimental in more. The cost of time by having to transcribe notes into electronic outlines [was a detriment].

The inconvenience of having to print out so much material for class outweighed the benefits of not being distracted by someone using their laptop for activities unrelated to class.

If you forget to bring one of the relevant documents [briefs, etc.] you may be lost in class.

B. Note-Taking Issues

I disagree [with the policy] because I am someone that has difficulty writing quickly, and just getting down the essentials in my notes was challenging.

I prefer to have my laptop because my fingers type faster than they can write. It was helpful to have the outlines posted for us, so that was a decent compromise.

I am able to type faster than I can write, and my notes are more clear and concise when typed.

My handwriting and written organization is much poorer than my typed work.

I found it much more difficult to take notes without my laptop. However, it was probably beneficial to learn to write out notes. Also, it was much less distracting in terms of not watching other students surfing the internet during class.

I feel like I miss things in class because I can't write fast enough. Also, I would sometimes forget my brief on my printer and would have to sit through class without it because we cannot use our laptops as a backup.

I miss a lot of content by not being able to type things that I could type.

I use my laptop in every other class so it was confusing to try and organize notes. My notes in other classes are much more thorough.

There is a lot to take down and I can't catch as much when I'm writing as opposed to typing.

I am far too slow a writer to keep up. Many times, I can't pay attention to what [the professor] is currently saying when I am trying to catch up.

It's much easier to take notes on the computer. When I wrote my notes in the outline it would have saved me more time for studying the concepts. However, I do think I paid a little closer attention [without the laptop].

I can't write quick enough to keep up.

Having to take notes in written form is less efficient than being able to type them.

C. The Ban Was Paternalistic

I find the laptop ban to be paternalistic and condescending. We all are adults, and if some (or even all) of us use our laptops for non-class activities – so what? Even if the things that others may have pulled up on their laptops could be a distraction, they only are so if we allow them to be. If I'm engaged and focused on the class, it doesn't matter what others are doing on-line. Also, I've never seen anyone pull up anything pornographic, which I think would be the only legitimate argument against laptop use. Personally, my laptop is a very useable tool.

While I understand the notion of excluding computers, allowing more students to focus, my feeling is that if students choose to be distracted is irrelevant of whether laptops are in the class. Being responsible for your own learning should be a skill learned in law school (before, really). Computers shouldn't change that.

III. Specific Comments on the Scaffolding Outlines

I downloaded the outlines the night before class and filled them in from the readings as best I could on my own. Then during class I filled in the rest. The next day or later after class, I used them to create my [course] outline.

The outline really helps to direct my thoughts. . . . It helps me understand the significant parts of the course and to analyze and remember the material.

[The outlines] helped me as I was reading to know exactly what I should be getting out of the reading. [They also] helped me be attentive in class because I always wanted to get them completed before class was over.

Prior to every class, I would print the outlines and take personal notes on them as I read. I would then bring them to class and supplement them with class notes. It

was great because, other than case briefs, all of my notes were organized and consolidated.

They gave me an analytical framework for each class.

I used [the outlines] for note-taking each day in class, and for review for the practice exam and to aid in constructing a course outline to study for the final.

I found [the outlines] incredibly helpful in creating an outline [for the course].

I used class outlines to construct my study outlines. The class outlines are the greatest thing since sliced bread!

[The outlines were] useful in preparing for class by letting us know ahead of time what we should be listening for. As 1Ls, this is important because we are still learning how to spot issues.

[The outlines made it] easier to stay on task.

I used [the outlines] in preparation for classes for the first half of the semester, and I used all of them in preparation for finals as a study tool.

I used every outline in preparing for class as well as in preparing my own outline. They were extremely helpful.

I used [the outlines] to prepare for class, to take notes during class, and to prepare my course outline. They were so helpful to keep me focused and to have a reference point for studying and learning.

The Blackboard outlines served as a good road map for the course and gave context to areas which were previously lacking.

The outlines are great. It helps us see the big picture and organize the information. It helped me get more out of the readings and notice the important issues.

The outlines were beyond helpful to stay on track with class discussions.

Used [the outlines] for class notes. Used as 'active study' at end of terms. I would print blanks at end of term and try to fill them in from memory, occasionally referencing copies with class notes.

APPENDIX 2
SAMPLE SCAFFOLDING OUTLINE¹²³

- X. Abandonment by Tenant
 - A. Common Law Approach
 - 1. What abandonment represented
 - 2. Landlord's options
 - B. Modern, Contractual Approach
 - 1. What abandonment represents
 - 2. Landlord's responsibility
- XI. Assignments and Subleases
 - A. Understanding Privity
 - 1. Privity of Contract
 - 2. Privity of Estate
 - B. Transfers by Landlords
 - C. Transfers by Tenants
 - 1. Identifying assignments versus subleases
 - a. Common law approach
 - b. Modern approach
 - 2. Legal implications of assignment
 - 3. Legal implications of sublease
 - D. Rules Governing Transfers of Leases
 - 1. Express Covenants in Leases
 - 2. Rule in *Dumpor's* Case

¹²³ This outline, when placed on Blackboard, is three pages in length and provides room for students to take handwritten notes at appropriate points.