

# Legal Education and Technology: An Annotated Bibliography\*

Pearl Goldman\*\*

*Just as technology has revolutionized the way law is practiced, it increasingly has found its way into legal education in a variety of ways. This digital revolution in the way law is taught has engendered a large body of scholarship. To help legal educators locate materials that inform and enrich their teaching, Professor Goldman offers an annotated bibliography of articles that examine the impact of computer technology on law schools and legal education.*

## Contents

Introduction . . . . .	424
Bibliography. . . . .	425
Specific Technologies. . . . .	425
Communications Technology. . . . .	425
Information Technology. . . . .	427
Instructional Technology . . . . .	430
Artificial Intelligence . . . . .	430
Electronic Course Materials . . . . .	433
Simulations and Games. . . . .	436
Tutorials . . . . .	439
Curriculum. . . . .	442
Clinical Programs . . . . .	442
Doctrinal Courses . . . . .	443
Skills Courses . . . . .	445
Distance Education . . . . .	446
Pedagogical Effectiveness . . . . .	452
Law Schools . . . . .	456
Architecture. . . . .	456
Faculty . . . . .	456
Libraries and Librarians. . . . .	456

---

\* © Pearl Goldman, 2001.

\*\* Associate Professor of Law and Director of First-Year Lawyering Skills and Values Program, Nova Southeastern University Shepard Broad Law Center, Fort Lauderdale, Florida. The author expresses gratitude to Sarah Tabor for her tireless interlibrary loan efforts.

Law Reviews . . . . .	458
The Future of Technology in Legal Education . . . . .	462
Miscellaneous . . . . .	464
Author Index . . . . .	465

[The] digital revolution is over and the electrons won.<sup>1</sup>

## Introduction

¶1 Technology has revolutionized the way law is practiced and thus, by necessity, the way it is taught and learned. Increasingly, legal educators have determined that proficiency in information and communication technologies is one of the essential lawyering skills required to prepare students for law practice.<sup>2</sup> In the past decade, legal education has embraced e-mail, course Web sites, classroom technology, distance education, electronic libraries and textbooks, online tutorials, and electronic research and scholarship. More recently, Concord University School of Law became the first American law school to offer a juris doctor degree online.<sup>3</sup>

¶2 One of the by-products of this digital revolution has been an increase in the scholarship devoted to these topics. This bibliography responds to the growing interest in the subject (and the consequent proliferation in the literature) by compiling articles that examine the impact of computer technology on law schools and legal education. As no other bibliography addresses the broad range of topics relating to this subject, I have sought to fill the gap so that legal educators may identify relevant materials that inform and enrich their teaching and scholarship.

¶3 The focus of the bibliography is on articles published in the United States and other English-language countries between 1970 and 2001. Included are articles addressing one or more of seven main categories into which the bibliography is organized: Specific Technologies, Curriculum, Distance Education, Pedagogical Effectiveness, Law Schools, The Future of Technology in Legal Education, and Miscellaneous.

¶4 Entries are organized alphabetically by author within each category and subcategory and cross-referenced to other categories when appropriate. To facilitate cross-referencing, entries are numbered sequentially. Accompanying each entry is a brief summary of the subject matter or central points discussed in the article and any additional features of interest, such as appendixes, graphics, and

- 
1. Robert C. Berring, *The Electronic Law Library: The Electronic Future of Law Libraries*, 24 LAW LIBR. J. 168, 168 (1993).
  2. See, e.g., Shelley Ross Saxer, *One Professor's Approach to Increasing Technology Use in Legal Education*, 6 RICH. J.L. & TECH. 21 (no. 4, 1999-2000), at [www.richmond.edu/jolt/v6i4/article4.html](http://www.richmond.edu/jolt/v6i4/article4.html).
  3. Concord Univ. Sch. of Law, at [www.concordlawschool.com](http://www.concordlawschool.com) (last visited Apr. 23, 2001).

hyperlinks. An alphabetical author index is provided with references to all entries for each author.

¶5 In compiling the bibliography, relevant material was identified by conducting searches of Westlaw, LEXIS-NEXIS, ERIC (Education Resources Information Center), *Current Law Index*, *Index to Legal Periodicals*, *Legal Resource Index*, LegalTrac, and the Internet. A detailed review of citations in works examined yielded additional materials.

¶6 Finally, although the goal was to produce a comprehensive bibliography within the broad subject area and time frame, noteworthy pieces may have been omitted unintentionally. The author regrets such omissions and invites readers to submit citations to relevant work for possible inclusion in a future supplement. This bibliography is current as of April 2001.

## Bibliography

### *Specific Technologies*

#### *Communications Technology*<sup>4</sup>

1. Clark, Andrew, John Dale, and Abdul Paliwala, "An Exercise in the Use of Computer Conferencing in Undergraduate Legal Education," *Law Technology Journal* 1, no. 2 (1992), at [www.law.warwick.ac.uk/ltj/1-2k.html](http://www.law.warwick.ac.uk/ltj/1-2k.html).

This article describes and evaluates the use of threaded discussions to supplement weekly seminar classes. The authors conclude that this medium provides greater opportunity for participation, increases convenience, and improves quality of discussion. An appendix reproduces the evaluation questionnaire completed by students and teachers.

2. Friedman, Peter B., "The Class Listserv: Professor's Podium or Students' Forum?" *Perspectives: Teaching Legal Research and Writing* 8 (2000): 75-78.

Although class electronic discussion lists provide a convenient podium for professors to deal with administrative issues and extend classroom walls, the dominance of the professor's voice may have a chilling effect on student discussions. Arguing that discussion lists are best used as a forum for students to conduct discussions among themselves, Friedman maintains that students will become better writers if they have the freedom to try out their errors on each other.

---

4. "Communications technology" includes the use of computers to transmit and receive messages, documents, and information, and to engage in discussions with others. See RICHARD SUSSKIND, *THE FUTURE OF LAW: FACING THE CHALLENGES OF INFORMATION TECHNOLOGY* 152-54 (1998). The articles in this section discuss the use of e-mail, newsgroups, electronic discussion lists, threaded discussions, and electronic conferencing in legal education.

3. Hardy, Trotter, "Electronic Conference: The Report of an Experiment," *Harvard Journal of Law and Technology* 6 (1993): 213–35.  
Hardy describes an electronic conference conducted exclusively by e-mail. Participating professors and practicing attorneys discussed the effects of e-mail on legal doctrine, law teaching, and law practice. Hardy provides extensive quotations from the participants and summarizes the results of the conference, pronouncing it a success due to its low cost and convenience, as well as its ability to remove many barriers to open discussion.
4. Hardy, Trotter, "An Experiment with Electronic Mail and Constitutional Theory," *Journal of Legal Education* 44 (1994): 446–51.  
Students in Hardy's law and economics seminar used e-mail to collaborate in drafting a constitution for a fictitious new country. Hardy describes the substance and mechanics of his experiment. The advantages he reports include the convenience of e-mail instead of scheduled meetings, the ability to verify class participation objectively, increased writing experiences for students, and an opportunity for quiet students to find their voice in writing.
5. Paliwala, Abdul, "Learning in Cyberspace—Revised Version," *Journal of Information, Law and Technology* 2001, no. 1, at <http://elj.warwick.ac.uk/jilt/01-1/paliwala.html>. (See entry no. 25.)
6. Shiels, Rosemary, "Law School Experience in Pervasive Electronic Communications," *Journal of Computing in Higher Education* 5 (Spring 1994): 122–24.  
Shiels describes the experience of Chicago-Kent College of Law in providing universal communications connectivity. She reports that e-mail has enhanced the school's cohesiveness, extended discussions beyond the classroom, increased student access to professors, and simplified administrative tasks. Unanticipated consequences have included a deluge of unwelcome communications and a demand for instant responses to e-mail queries.
7. Sowle, Stephen D., and Richard Warner, "Cruising the Electronic Classroom," *Law Teacher* (Fall 1997): 4–5.  
E-mail and discussion groups can facilitate continuing contact between students and professors and thereby extend the classroom walls. Sowle and Warner describe the more common uses of communications technology and compare their advantages.
8. Taylor, Scott A., "Teaching a Law Seminar over the Internet," *Journal of Law and Information Science* 7 (1996): 41–53. (See entry no. 142.)
9. Thomas, Robert H., "Hey Did You Get My E-Mail? Reflections of a Retro-Grouch in the Computer Age of Legal Education," *Journal of Legal Education* 44 (1994): 233–48.  
The dehumanizing and isolating effects of e-mail may outweigh the benefits it brings to legal education, removing students from the interaction they need for successful law practice. After analyzing e-mail's advantages and disadvantages,

Thomas recommends that it be used to supplement, not replace, student-teacher conferences and class discussions.

10. Widdison, Robin, and Francis Pritchard, "An Experiment with Electronic Law Tutorials," *Law Technology Journal* 4, no.1 (1995), at [www.law.warwick.ac.uk/l tj/4-1b.html](http://www.law.warwick.ac.uk/l tj/4-1b.html).

E-mail tutorials replaced face-to-face tutorials in a contracts course at Durham University. Based on participation levels and reactions of participants, Widdison and Pritchard conclude that electronic tutorials are more useful as a partial replacement for, or supplement to, traditional teaching methods than as a complete substitute. Appendixes provide the fact situation used in the experiment and student responses to an evaluative questionnaire.

11. Widdison, Robin, and Richard Schulte, "Quarts into Pint Pots? Electronic Law Tutorials Revisited," *Journal of Information, Law and Technology* 1998, no. 1, at [http://elj.warwick.ac.uk/jilt/cal/98\\_1widd/default.htm](http://elj.warwick.ac.uk/jilt/cal/98_1widd/default.htm).

Based on their survey of recent scholarship on electronic conferencing, Widdison and Schulte catalogue the strengths and weakness of e-mail as an educational tool. They also describe and evaluate their experiment using e-mail to supplement small group teaching in a contracts course in 1996–97. Appendixes provide a sample diagnostic test and students' responses to the questionnaire.

#### *Information Technology*<sup>5</sup>

12. Abbey, Robert M., "Information Technology and the Legal Practice Course," *Web Journal of Current Legal Issues* 1995, no. 5, at <http://webjcli.ncl.ac.uk/articles5/abbey5.html>.

This article reviews information technology (IT) currently in use in the legal profession in England, surveys its teaching in legal practice courses, and analyzes its use in the University of Westminster's legal practice course. Abbey recommends that written standards be adopted, requiring full integration of IT in such courses to ensure that students are prepared for law practice.

13. Alldridge, Peter, and Ann Mumford, "Gazing into the Future Through a VDU: Communications, Information Technology, and Law Teaching," *Journal of Law and Society* 25 (1998): 116–33. (See entry no. 216.)

14. Boyd, William E., "Information Technology in Legal Education—What's Happening in the United States," *Law Technology Journal* 3, no. 2 (1994), at [www.law.warwick.ac.uk/l tj/3-2d.html](http://www.law.warwick.ac.uk/l tj/3-2d.html).

Boyd briefly reviews developments in the use of IT in American legal education. Topics include CALI tutorials, interactive video, electronic course materials,

---

5. The articles in this section focus on the use of information technology in legal education. As used here, information technology refers to the retrieval, management, and processing of legal and nonlegal information, using a variety of electronic resources, including online research systems, litigation databases, document assembly systems, and expert systems. *See id.* at 105–48.

e-mail, artificial intelligence, and work in progress by several American law professors.

15. Cramton, Roger C., and Peter Martin, "Information Technology and Legal Ethics: Expanding the Teaching and Understanding of Legal Ethics Through the Creation of a New Generation of Electronic Materials," *Law and Contemporary Problems* 58 (1995): 337–46.

Part three of this article discusses Cornell Law School's preparation and distribution of the Legal Information Institute's electronic materials on legal ethics. This legal ethics library is an interactive online resource available to the public and to law professors for use in academic programs.
16. Danner, Richard A., "Facing the Millennium: Law Schools, Law Librarians, and Information Technology," *Journal of Legal Education* 46 (1996): 43–58.

Danner discusses the impact of technology on the law school and examines the administrative and organizational questions it poses, as well as solutions developed at Duke University School of Law. He also considers new roles for library directors in managing and planning the increasing integration of IT into all facets of legal education.
17. Greenleaf, Graham, "Information Technology in Australian Law Teaching," *Law Technology Journal* 3, no. 2 (1994), at [www.law.warwick.ac.uk/ltj/3-2h.html](http://www.law.warwick.ac.uk/ltj/3-2h.html).

This brief essay discusses the use of IT in Australian law teaching, focusing on the University of New South Wales. Greenleaf summarizes programs in computer-assisted legal research, computer-assisted learning, and computer applications for lawyers.
18. Johnson, Andrea L., "Distance Learning and Information Technology: Working Towards an International Model," *Law/Technology* 30, no. 4 (1997): 1–29.

Johnson maintains that law schools should integrate distance learning and IT into the curriculum. She reviews the legal, cultural, and technological issues involved in efforts to develop an international model of distance learning; surveys distance learning programs in selected countries; and discusses their regulatory frameworks for IT.
19. Jones, Richard, "Computer-Managed Teaching and Learning in Law," *International Yearbook of Law Computers and Technology* 8 (1994): 173–83.

Jones explains how information technology is used to assist in the teaching of IT and the law to students in an LL.B course at the John Moores University Law School in Liverpool. After briefly discussing the need for computer-assisted instruction and the advantages and disadvantages of virtual classrooms, he describes and evaluates the development and implementation of a course on information technology and the law.
20. Mackaay, Ejan, and Daniel Poulin, "Information Technology in Canadian

Legal Education,” *Law Technology Journal* 3, no. 2 (1994), at [www.law.warwick.ac.uk/ltj/3-2c.html](http://www.law.warwick.ac.uk/ltj/3-2c.html).

Mackaay and Poulin present a brief review of three aspects of IT in Canadian legal education: law school teaching, Internet access, and research in expert systems, hypertext, and advanced retrieval techniques.

21. MacLachlan, Lawrence Duncan, “Gandy Dancers on the Web: How the Internet Has Raised the Bar on Lawyers’ Professional Responsibility to Research and Know the Law,” *Georgetown Journal of Legal Ethics* 13 (2000): 607–48.

Public access to information on the Internet has reduced the information distance between lawyers and their clients and challenged the long-held perception that lawyers are more competent researchers than their clients. MacLachlan argues that law schools should prepare students for the practice of law by incorporating Internet research skills into all aspects of the regular curriculum.

22. Martin, Peter, “IT and U.S. Legal Education: Alternative Views of the Law School: Consumer, Marketing Venue, Center of Research and Dissemination,” *Journal of Information, Law and Technology* 1999, no. 1, at <http://elj.warwick.ac.uk/jilt/99-1/martin.html>.

Martin’s paper reviews opportunities offered to law schools by developments in IT, impediments to change caused by traditional views of legal education, and consequences of failing to take advantage of opportunities.

23. Masters, Elmer R., “Five Steps Toward Improving the Use of Information Technology in the Law School,” *Journal of Law School Computing* 1, no. 1 (1999), at [www.cali.org/jlsc/masters.html](http://www.cali.org/jlsc/masters.html).

Masters describes five steps that law schools can take to improve the use of IT: (1) recognizing the importance of information to one’s law school; (2) creating an IT structure that encourages the free flow of information; (3) requiring a base level of computer literacy; (4) providing adequate training and learning opportunities; and (5) rewarding use of IT.

24. Molina, Pablo G., “Strategic Planning for Information Technology,” *Journal of Law School Computing* 1, no. 1 (1999), at [www.cali.org/jlsc/molina.html](http://www.cali.org/jlsc/molina.html).

This article emphasizes the importance of developing a strategic plan for IT in law schools. Molina discusses methodologies of an IT plan and four elements crucial to a successful plan: vision, mission, goals, and objectives.

25. Paliwala, Abdul, “Learning in Cyberspace—Revised Version,” *Journal of Information, Law and Technology* 2001, no. 1, at <http://elj.warwick.ac.uk/jilt/01-1/paliwala.html>.

In reviewing the development and use of communications and information technology (C&IT) in legal education, Paliwala examines the impact of such technologies on the challenges facing legal education, focusing on education theory, resource issues, and globalization.

26. Schwartzstein, Linda A., “Legal Education, Information Technology, and

Systems Analysis," *Rutgers Computer and Technology Law Journal* 60 (1987): 59–71.

Asserting that law schools have the obligation to teach law students how to approach legal problems involving IT, Schwartzstein proposes using systems analysis to accomplish this goal. She describes and evaluates her experience with this approach in a business planning course that required students to understand the technology underlying the client's business plan. She also suggests how law schools can integrate such instruction into the existing J.D. curriculum.

27. Simonds, Robin P., "Diogenes' Quest: IT Decision Making in the Twenty-First Century Law School," *Journal of Law School Computing* 1, no. 1 (1999), at [www.cali.org/jlsc/simonds.html](http://www.cali.org/jlsc/simonds.html).

IT decisions are crucial to the mission of legal education. Simonds discusses the changing and often conflicting needs of individual users and constituent groups within law school communities, as well as the critical role played by professional technology support staff in making and implementing technology decisions.

28. Wall, David S., "Revenge of the Cyborg Trolls, Part Two: Putting IT into the Law Curriculum," *International Yearbook of Law Computers and Technology* 8 (1994): 65–74.

Wall recounts his experiences at Leeds University in satisfying the increasing demand for IT in law teaching. After discussing pitfalls and practical concerns, he briefly describes the future of virtual legal education.

29. Young, Max, "Information Technology: A Role in Legal Education? Where Are We Now?" *International Yearbook of Law Computers and Technology* 8 (1994): 75–80.

Young examines the role of IT in the law school curriculum, discussing the demand for its inclusion, the stage at which it should be taught, and the topics that should be covered. An appendix outlines a computing module consisting of a weekly one-hour workshop on computer applications and legal IT.

### *Instructional Technology*

#### Artificial Intelligence<sup>6</sup>

30. Aikenhead, Michael, Robin Widdison, and Thomas Allen, "Exploring Law Through Computer Simulation," *International Journal of Law and Information Technology* 7 (1999): 191–217. (See entry no. 59.)
31. Ashley, Kevin D., "Designing Electronic Casebooks That Talk Back: The

---

6. Artificial intelligence is concerned with the development of computer systems that can model or simulate intelligent behavior by performing tasks and solving problems ordinarily thought to be within the exclusive province of human intelligence. *Id.* at 120. As used in this section, artificial intelligence includes expert and knowledge-based systems that guide users through complex legal issues, analyze problems and draw conclusions, formulate strategies, and assemble documents. *See id.* at 120–23.

CATO Program,” *Jurimetrics Journal* 40 (2000): 275–319. (See entry no. 44.)

32. Boyd, William E., “New Frontiers in Instructional Software,” *Law Technology Journal* 3, no. 3 (1994), at [www.law.warwick.ac.uk/l tj/3-3c.html](http://www.law.warwick.ac.uk/l tj/3-3c.html).

Despite its title, this article goes beyond instructional software and examines advances in technology relating to tutorials, electronic casebooks, electronic simulations, e-mail, electronic discussion lists, interactive video, and the application of artificial intelligence (AI) to legal reasoning and law study.

33. Egri, Peter, “Computer-Assisted Learning: Legal Expert Systems and Practical Legal Training,” *Journal of Professional Legal Education* 8 (1990): 1–20.

“Intelligent computer-assisted learning” (ICAL) uses AI to replicate an expert’s problem-solving skills and explain shortcomings in student performance. After reviewing the literature on industrial and cognitive skills and the design of computer-assisted learning (CAL) tools, Egri discusses the suitability of CAL and ICAL for legal skills instruction. He concludes that while suitable for the presentation of knowledge, CAL and ICAL are inappropriate for complex legal skills instruction.

34. Hardy, Trotter, “Creating an Expert System for Legislative History Research: Project Clear’s ‘Lexpert,’” *Law Library Journal* 85 (1993): 239–73.

Hardy describes techniques used to create *Lexpert*, an expert system for giving advice about legislative history research. The advice consists of recommendations to use a particular section or index from a specific research aid. He also discusses the advantages and implications of these techniques.

35. Hardy, Trotter, “Project Clear’s Paper Choice: A Hypertext System for Giving Advice About Legal Research,” *Law Library Journal* 82 (1990): 209–37.

*Paper Choice* is a hypertext expert system designed to teach and advise students about legal research. Hardy describes this software system and shares lessons learned while developing it.

36. Hegarty, Caitriona, and Tom Routen, “Statutor: Intelligent Tutoring System?” *Journal of Information, Law and Technology* 1996, no. 3, at <http://elj.warwick.ac.uk/jilt/BILETA/1996/3hegarty/default.htm>.

*Statutor* is an intelligent tutoring system developed to educate students in the statute law domain. Hegarty and Routen describe the system and the type of assistance available to users both during and after they construct their arguments. They also present the results of an interim evaluation of the *Statutor* system and outline future developments for it.

37. Hunter, Dan, “Teaching Artificial Intelligence to Law Students,” *Law*

*Technology Journal* 3, no. 3 (1994), at [www.law.warwick.ac.uk/l tj/3-3h.html](http://www.law.warwick.ac.uk/l tj/3-3h.html). (See entry no. 103.)

38. Jones, Richard., "Using Artificial Intelligence in Legal Computer-Assisted Instruction," *Law Technology Journal* 2, no. 1 (1992), at [www.law.warwick.ac.uk/l tj/2-1b.html](http://www.law.warwick.ac.uk/l tj/2-1b.html).  
Jones discusses the limitations of computer-assisted instruction (CAI) under the authoring systems in the 1970s and 1980s. He argues that the techniques and tools of AI can be used to enhance CAI programs by improving on the richness of feedback and the degree of individualization offered to students. Jones also describes in depth the design of an intelligent computer-assisted instruction system for legal education.
39. Lodder, Arno R., and Bart Verheij, "Computer-Mediated Legal Argument: Towards New Opportunities in Education," *Journal of Information, Law and Technology* 1999, no. 2, at <http://elj.warwick.ac.uk/jilt/99-2/lodder.html>.  
Using examples from Dutch tort law, this paper describes and evaluates two AI systems that can serve as prototypes for teaching students legal argumentation. *DiaLaw* uses a verbal approach based on a dialogical model of argumentation, and *Argue!* uses a graphical approach based on a procedural model of argumentation. Lodder and Verheij recommend that programmers develop a hybrid system in which arguments are presented both graphically and verbally.
40. Maharg, Paul, "Law, Learning, Technology: Reiving Ower the Borders," *International Review of Law Computers and Technology* 14 (2000): 155–70. (See entry no. 160).
41. Span, Georges, "LITES: An Intelligent Tutoring System Shell for Legal Education," *International Yearbook of Law Computers and Technology* 8 (1994): 103–13.  
LITES (Legal Intelligent Tutoring/Expert System) is an intelligent tutoring system shell that can be used to develop or run other systems. This article describes one use of LITES in teaching students how to solve problems in the domain of Dutch civil law.
42. Staudt, Ronald, "Legal Mindstorms: Lawyers, Computers, and Powerful Ideas," *Jurimetrics Journal* 31 (1991): 171–85.  
Staudt argues that AI capabilities may assist in the teaching of legal reasoning. Law students should be able to use computers in the same fashion that children use them to learn mathematics. He explains how hypertext may teach students to think like lawyers by providing a learning environment in which they can organize, synthesize, and link materials as they learn legal concepts.
43. Terrett, Andrew, "Using Artificial Intelligence to Teach Legal Reasoning," *Computers and Law* 5 (1994): 33–34. (See entry no. 109.)

Electronic Course Materials<sup>7</sup>

44. Ashley, Kevin D., "Designing Electronic Casebooks That Talk Back: The *CATO* Program," *Jurimetrics Journal* 40 (2000): 275–319.

The *CATO* program is a prototype for integrating computerized instruction and electronic casebooks, using AI to teach law students to make analogical legal arguments with cases. Ashley explains how electronic casebooks using *CATO* can involve students in realistic role-playing, make abstract concepts explicit and manipulable, and engage students in argumentation dialogues. After reviewing the program's strengths and weaknesses, he concludes that *CATO* teaches argumentation concepts as well as experienced human instructors do.

45. Grantham, David, "IOLISplus: Extending the Electronic Learning Environment," *Journal of Information, Law and Technology* 1991, no. 1, at <http://elj.warwick.ac.uk/jilt/99-1/grantham.html>.

*IOLISplus* is an electronic learning package that builds upon its predecessor, *IOLIS* (see entries no. 50 and 57). *IOLISplus* contains questions designed to promote deep learning, an interactive discussion forum between students and tutors, and hyperlinks to various resources. Grantham describes the experimental design processes involved, the early piloting of the project, and student reaction. The article links readers to the first Web pages used in the project.

46. Grantham, David, "IOLISplus: The Second Chapter," *Journal of Information, Law and Technology* 2000, no. 1, at <http://elj.warwick.ac.uk/jilt/00-1/grantham.html>.

Grantham describes lessons learned from the evaluation of the pilot study of *IOLISplus* (see entry no. 45). Based on that evaluation, changes were made to the package. This article examines the pedagogy and educational strategies underlying these modifications and briefly describes the use of *WebCT* with *IOLISplus*. The questionnaire completed by students is included in the appendix.

47. Martin, Peter, "What Do Law Students with Laptops and Electronic Casebooks Do? The Chicago-Kent Computer Section (1995–96)," at [www.law.cornell.edu/papers/kentrptf.htm](http://www.law.cornell.edu/papers/kentrptf.htm).

Martin evaluated the first-year section at Chicago-Kent College of Law that used electronic casebooks during the 1995–96 academic year. This paper presents his conclusions, based on class visits, interviews with faculty members, and responses to student questionnaires. Martin reports that students preferred to use print materials, used laptops in class primarily for note taking, and generally did not avail themselves of the outlining features of the electronic casebook. Students responded favorably to electronic tutorials and to faculty use of a computer to present material in class.

48. Matasar, Richard A., and Rosemary Shiels, "Electronic Law Students:

---

7. As used in this section, "electronic course materials" refers to class readings, assignments, and workbooks published in electronic format, including diskette, CD-ROM, and Web sites.

Repercussions on Legal Education, *Valparaiso University Law Review* 29 (1995): 909–33.

Matasar and Shiels discuss the use of electronic casebooks and the first-year electronic curriculum experiment at Chicago-Kent College of Law. They explain the technologies employed and offer preliminary observations about their value, concluding that law schools have the responsibility of teaching students to use emerging technologies in order to be prepared for law practice.

49. Moodie, Peter, "Law Courseware and IOLIS: Assessing the Present and Constructing the Future," *Journal of Information, Law and Technology* 1997, no. 1, at [http://elj.warwick.ac.uk/jilt/cal/97\\_1mood/default.htm](http://elj.warwick.ac.uk/jilt/cal/97_1mood/default.htm).

Moodie makes suggestions for the future direction of law courseware and contrasts *IOLIS* with the approach being taken by CALL, the Center for Computer-Assisted Legal Instruction, in the United States. He proposes increasing efforts to promote use of the *IOLIS* authoring system and to integrate courseware with other sources of information and communication technology in legal education.

50. Paliwala, Abdul, "Co-operative Development of CAL Materials: A Case Study of IOLIS," *Journal of Information, Law and Technology* 1998, no. 3, at [www.law.warwick.ac.uk/jilt/98-3/paliwala.html](http://www.law.warwick.ac.uk/jilt/98-3/paliwala.html).

Paliwala argues that successful development of C&IT requires attention to educational and management issues and that collaborative development will avoid wasting resources. He discusses *IOLIS* courseware as an example of collaborative development that has national and international implications.

51. Quintana, Lincoln B., "Making Our Way into the Coming Age of Electronic Casebooks," *Yearbook of Law Computers and Technology* 8 (1994): 131–47.

An electronic casebook was created for a course in intellectual property at the University of British Columbia law school. Quintana discusses a range of topics, including funding, locating sources of electronic materials, publishing materials in electronic format, and distributing the product to students.

52. Scott, Collin, "Law Courseware: The Next Generation," *Law Technology Journal* 3, no. 2 (1994), at [www.law.warwick.ac.uk/ltj/3-2b.html](http://www.law.warwick.ac.uk/ltj/3-2b.html).

Scott explores practical and theoretical considerations in the development of electronic course packages for use in legal education. After evaluating the first generation of materials, he discusses models of learning in law schools, research about student learning, and the problems of applying educational research to electronic courseware. He concludes by discussing the second generation of materials, covering their development, content, implementation, and future.

53. Shiels, Rosemary, "Law Students and Hypertext: One Law School's Model," *Journal of Information, Law and Technology* 1996, no. 3, at <http://elj.warwick.ac.uk/jilt/BILETA/1996/3shiels/default.htm>.

This article updates earlier reports about Chicago-Kent College of Law's experimental "notebook computer project" in which first-year students used hypertext electronic casebooks in class (see entries no. 47, 48, 54, 108). While Shiels concludes that students can successfully use this type of material without harming

their academic achievement, she also observes that additional objective evaluation is required.

54. Staudt, Ronald, "An Essay on Electronic Casebooks: My Pursuit of the Paperless Chase," *Chicago-Kent Law Review* 68 (1992): 291–313.

Staudt relates his experience in using electronic casebooks in two courses at Chicago-Kent College of Law, both as a companion to a printed casebook and as a fully electronic text. He discusses the advantages and disadvantages of each form and concludes that electronic casebooks can enhance the academic experience of law students. An appendix provides illustrations from the electronic materials.

55. Staudt, Ronald, "In Search of the Origins of the Electronic Casebook," *Journal of Law School Computing* 1, no. 1 (1999), at [www.cali.org/jlsc/staudt.html](http://www.cali.org/jlsc/staudt.html).

Staudt's essay traces the activities of the Chicago-Kent Center for Law and Computers during its first ten years. He describes the center's early experiments in clinical and legal writing programs and provides a brief history of its development of electronic casebooks.

56. Warner, Richard, "Teaching Electronically: The Chicago-Kent Experiment," *Seattle University Law Review* 20 (1997): 383–400.

Warner examines the effect of electronic casebooks on law teaching in traditional doctrinal courses. Preliminary results from the Chicago-Kent College of Law showed that although first-year students were enthusiastic about instructor use of the electronic casebook in the classroom, they did not use the casebooks as anticipated in preparing for class, taking notes, and studying for the final exam. He concludes that students need more instruction, guidance, and encouragement.

57. Widdison, Robin, "Law Courseware: Big Bang or Damp Squib?" *Web Journal of Current Legal Issues* 1995, no. 4, at <http://webjcli.ncl.ac.uk/articles4/widdis4.html>.

This article introduces the first package of *IOLIS* courseware, discusses arguments for and against its use, and addresses questions that potential users might ask. *IOLIS* courseware covers six legal subjects, each with several components: (a) workbooks containing interactive or non-interactive descriptive text and graphics; (b) a resource book containing an electronic library; and (c) a scrapbook for notes and extracts.

58. Young, Max, "'Help' with the Sale of Goods: Initial Thoughts," *Journal of Information, Law and Technology* 1996, no. 3, at <http://elj.warwick.ac.uk/jilt/BILETA/1996/3young/default.htm>.

"*Help*" with the Sale of Goods is a Windows help file containing lecture notes, statutes, and cases needed for the sale of goods course offered in the LL.B. Program at the University of Luton. The file includes menus, hypertext links, search facilities, and notes that can be edited, customized, and printed. Young discusses the use of learning theory in developing this resource, the selection and creation of materials, and the evaluation questionnaire completed by students.

Simulations and Games<sup>8</sup>

59. Aikenhead, Michael, Robin Widdison, and Thomas Allen, "Exploring Law Through Computer Simulation," *International Journal of Law and Information Technology* 7 (1999): 191–217.  
The authors argue that the development of new simulation techniques based on distributed AI holds potential for use in legal education. They review and assess several computer simulations based on distributed AI and suggest some ways in which legal simulations could be constructed.
60. Allen, Layman E., and Charles S. Saxon, "One Use of Computerized Instructional Gaming in Legal Education: To Better Understand the Rich Logical Structure of Legal Rules and Improve Legal Writing," *University of Michigan Journal of Law Reform* 18 (1985): 383–471.  
Two computer programs were designed to improve legal writing. Allen and Saxon describe *Normalizer*, which assists users in normalizing the expression of legal rules, and the *Clear Legal Language* game, which instructs students in the handling of the logical structure of legal writing.
61. Bench-Capon, T.J.M., and P.H. Leng, "Computer-Mediated Collaborative Learning of Legal Argumentation," *Information and Communications Technology Law* 9 (2000): 129–38.  
The authors expand upon their earlier work on computer dialogue games (see entry no. 62) to teach legal argument. In this article, they describe a framework for using the computer games to support collaborative development of arguments by groups of students on the Web.
62. Bench-Capon, T.J.M., P.H. Leng, and G. Staniford, "A Computer-Supported Environment for the Teaching of Legal Argument," *Journal of Information, Law and Technology* 1998, no. 3, at <http://elj.warwick.ac.uk/jilt/98-3/capon.html>.  
Computer dialogue games differ from other forms of instructional technology because they require users to construct a convincing argument rather than to search for the answer to a question. This article discusses their role in teaching students the skill of legal argument. The authors describe a prototype dialogue game and provide a sample run of the system.
63. Cavanagh, Edward D., "Pretrial Discovery in the Law School Curriculum: An Analysis and a Suggested Approach," *Journal of Legal Education* 38 (1988): 401–12.  
In part three of this article, Cavanagh discusses the advantages and disadvantages of using a computerized discovery game as a technique for teaching pretrial

---

8. Simulations are indirect, vicarious experiences that attempt to recreate live-client situations by the technique of role-playing. GERALD F. HESS & STEVEN FRIEDLAND, *TECHNIQUES FOR TEACHING LAW* 193 (1999). Although similar, games involve a competitive component and may require several students to participate. Michael A. Geist, *Where Can You Go Today? The Computerization of Legal Education from Workbooks to the Web*, 11 *HARV. J.L. & TECH.* 141, 151 (1997).

discovery. He concludes that, despite their shortcomings, such games enhance knowledge of discovery rules.

64. Degnan, Daniel A., and Charles M. Haar, "Computer Simulation in Urban Legal Studies," *Journal of Legal Education* 23 (1970): 353–65.  
*Apex* is a computerized urban simulation game in which students assume decision-making roles in a simulated city. Degnan and Haar describe and evaluate the simulation in the context of urban legal studies programs.
65. Drobak, John N., "Computer Simulation and Gaming: An Interdisciplinary Survey with a View Toward Legal Applications," *Stanford Law Review* 24 (1972): 712–29.  
This student-authored note discusses the advantages and limitations of computer simulation and gaming and examines their use in extra-legal disciplines. Drobak also reviews legal applications of computer science and proposes using simulation and gaming techniques to teach problem-solving. He suggests that these techniques have potential as research and educational tools.
66. Hazen, Margaret M., and Thomas Lee Hazen, "Simulation of Legal Analysis and Instruction on the Computer," *Indiana Law Journal* 59 (1983–84): 195–222.  
The authors explore the interrelationship between CAI and instructional design, focusing on simulation gaming and computer-assisted legal analysis, and concluding that CAI is potentially more effective when no other method exists for accomplishing the same results.
67. Hibbs, Mary, and Keith Vaughan, "Interactive Video in Legal Education," *New Law Journal* 144 (1994): 172–73.  
Hibbs and Vaughan describe an interactive video lesson in which law students use a computer and laserdisc player to practice legal skills during a simulated trial. They maintain that these lessons are cost-effective and provide valuable tools for teaching practical skills that are difficult to learn from books and conventional computer-assisted instruction.
68. Hoelscher, Karen J., "Bridging the Classroom and the Real World: A Video Implementation Study at Harvard Law School," *Journal of Computing in Higher Education* 2 (1990): 32–77.  
First-year students at Harvard Law School used *Litigation Strategies*, an interactive videodisc program, to develop a civil rights case and specify the criteria for a legal complaint. Hoelscher reports on a study evaluating the program's orienting instructions. Student attitudes were positive, but performance results were mixed. She concludes that additional study is needed to learn more about effective orienting instructions and the type of learners with whom such instruction should be used.
69. Hogan, Kevin, Tony Cooke, and Frank Sharman, "Interactive Video in Law Teaching," *Yearbook of Law Computers and Technology* 4 (1989): 104–26.  
The purpose of this article is to familiarize legal educators with the technical aspects of using interactive video in law teaching. After discussing the pedagogical reasons for its use, the authors review hardware and software require-

ments and the practical aspects of producing such programs. They also provide a preliminary report on their study evaluating an interactive video program.

70. Hollander, Patricia A., "The Simulated Law Firm and Other Contemporary Law Simulations," *Journal of Legal Education* 29 (1978): 311–51.

The first part of this article examines various simulation methods used in law schools, including computer-aided teaching programs. Hollander discusses the application of programmed learning, role-playing, legal research, indexing, and systemized legal practice tasks in the simulated law firm environment.
71. Killingley, Julian, "Building on The Paper Case," *Law Technology Journal* 2, no. 1 (1992), at [www.law.warwick.ac.uk/l tj/2-1e.html](http://www.law.warwick.ac.uk/l tj/2-1e.html).

*The Paper Case* is an interactive videodisc that simulates a solicitor's training in civil litigation in England and Wales. Killingley discusses the financial costs and educational benefits of the simulation. She also outlines plans to develop similar programs for teaching criminal litigation, using a hypertext authoring system as a low-cost alternative to interactive video.
72. Lambiris, Michael, and Graham Oberem, "Natural Language Techniques in Computer-Assisted Legal Instruction: A Comparison of Alternative Approaches," *Journal of Legal Education* 43 (1993): 60–78.

One of the chief problems of computer-assisted instruction is its limited ability to judge student answers. Lambiris and Oberem describe and assess two natural language versions of a dialogue program in which law students conduct a client interview. They report a preference for the second version, which is more complex but more linguistically accurate than the first version.
73. Munroe, Robert J., and Dennis Noah, "PLATO, EDUCOM, and Legal Education," *Journal of Legal Education* 30 (1980): 582–91.

Munroe and Noah review teaching techniques, particularly simulation and gaming, used in the PLATO and EDUCOM systems of CAI. They also analyze the role of these systems in the law school curriculum and survey actual law school use of CAI systems in the United States.
74. Sharman, Frank, Kevin Hogan, and Tony Cooke, "The Evaluation of Interactive Video in Law Teaching," *The Law Teacher* 24 (1990): 112–19.

This paper reports on the authors' evaluation of the effectiveness of interactive video in law teaching. Students were divided randomly into three groups, with each group studying the same material presented by one of three methods: (1) interactive video, (2) linear video, or (3) lecture. They discuss their research methodology, the data collected, and their findings. They found no significant differences in the learning levels of the three groups.
75. Widdison, Robin, Michael Aikenhead, and Thomas Allen, "Computer Simulation in Legal Education," *International Journal of Law and Information Technology* 5 (1997): 279–307.

This article surveys and evaluates computer and noncomputer uses of simulation in legal education. The authors observe that most computer simulations neglect substantive law, transactional settings, and abstract situations. They explore how these underdeveloped aspects might be expanded in the area of contract law.

Tutorials<sup>9</sup>

76. Allen, Thomas, and William Robinson, "The Defamation Tutor: Integrating CAL and Hypertext," *Law Technology Journal* 2, no. 1 (1992), at [www.law.warwick.ac.uk/ltj/2-1f.html](http://www.law.warwick.ac.uk/ltj/2-1f.html).  
A hypertext tutorial on the law of defamation is described and evaluated in this article. Although students found the tutorial useful for identifying weak areas, only 25% of those taking torts actually used the program. Allen and Robinson conclude that the time and effort they spent on writing the program might have been better spent on class tutorials or one-on-one tutoring.
77. Allen, Thomas, and William Robinson, "Improving Linear Computer-Assisted Learning," *International Yearbook of Law Computers and Technology* 8 (1994): 94–102.  
Tutorial programs in four subjects were designed to test and improve different techniques and features of computer-assisted learning. The research compared the programs, used by twenty student volunteers, with each other rather than with conventional forms of instruction. Allen and Robinson review the programs and the evaluation process and outline their reasons for concluding that CAL programs have direct educational value within defined limits.
78. Andersen, William R., "Computer Graphics in the Teaching of Administrative Law," *Brandeis Law Journal* 38 (2000): 229–38.  
Andersen's essay reports on an experiment in designing a CAL program, supported by graphic devices, for use in an administrative law course. He discusses the graphics employed in several CALI tutorials; identifies costs, benefits, and pedagogical concerns; and provides advice to aspiring program authors.
79. Buckingham, Donna, "CAL as Vapourware: Creating a Teaching Script," *Journal of Law and Information Science* 7 (1996): 7–21.  
While creating computer programs to teach statutory interpretation, Buckingham learned several lessons, which she shares in this article. Included are discussions about technophobia, teaching goals and strategies, software capabilities, hypertext and substantive content, and lesson design. An appendix describes the suite of programs she designed.
80. Buckingham, Donna, "CASI—Spinning the Teaching Web," *Law Technology Journal* 4, no. 2 (1995), at [www.law.warwick.ac.uk/ltj/4-2d.html](http://www.law.warwick.ac.uk/ltj/4-2d.html).  
Buckingham documents the process of developing computer-based lessons for use in a first-year law program in New Zealand. CASI (Computer Assisted Statutory Interpretation) consists of three modules that enable students to analyze

---

9. As used in this section, "tutorials" include computerized drill-and-practice exercises, programmed instruction, and multibranch lessons that emulate Socratic dialogue. See Margaret M. Hazen & Thomas Lee Hazen, *Simulation of Legal Analysis and Instruction on the Computer*, 59 *IND. L.J.* 195, 200–01 (1983–84). These programs are referred to in the literature as computer-assisted instruction or computer-assisted learning.

and apply a statute, model the process of statutory interpretation, and integrate both processes in an examination context. Appendixes describe the hypertext application used in the lessons and provide sample Web maps of the three modules used in the lessons.

81. Collins, Hugh, "The Place of Computers in Legal Education," *Law Technology Journal* 3, no. 3 (1994), at [www.law.warwick.ac.uk/ltj/3-3b.html](http://www.law.warwick.ac.uk/ltj/3-3b.html).  
Collins discusses the opportunities and dangers presented by computers in legal education, focusing on the strengths and weaknesses of interactive computer tutorials. He maintains that familiarity with the use of data retrieval and hypertext systems is an appropriate skill to be acquired in the course of legal education.
82. Henn, Harry G., and Robert C. Platt, "Computer-Assisted Law Instruction: Clinical Education's Bionic Sibling," *Journal of Legal Education* 28 (1977): 423-36.  
Like clinical education, CAI has the potential to alleviate boredom among senior law students and provide them with practical training unavailable in the traditional classroom. Henn and Platt describe an early experiment at Cornell Law School in which regular assignments in a corporations class were supplemented with CAI lessons. They report enthusiastic student response and statistically significant improvement in scores of the experimental class over the scores of non-computer users in the previous year.
83. Jones, Peter, and Rick Snell, "Trials and Tribulations of Developing Computer-Assisted Learning in a Small Law School," *Journal of Law and Information Science* 5 (1994): 57-70.  
The University of Tasmania Law School undertook a CAL project to address problems caused by burgeoning class size and overseas enrollment. Jones and Snell describe the project, focusing on four modules created for use in the areas of administrative law, personal solvency, property law, and restrictive covenants.
84. Jones, Richard, Philip Leith, and Abdul Paliwala, "Siting CAL in a Legal Environment: CMLCAL," *Law Technology Journal* 1, no. 2 (1992), at [www.law.warwick.ac.uk/ltj/1-2h.html](http://www.law.warwick.ac.uk/ltj/1-2h.html).  
Research was undertaken with law faculty in the United Kingdom to ascertain how an author's methodology affects the tutorials produced. Reporting on this research, the authors conclude that the quality of tutorials is affected by factors such as access to computing equipment, ability to use authoring systems effectively, and adequacy of resources and time. The CMLCAL acronym is never explained, though it appears to mean "constructing a methodology for legal computer-assisted learning."
85. Maggs, Peter B., and Thomas D. Morgan, "Computer-Based Legal Education at the University of Illinois: A Report of Two Years' Experience," *Journal of Legal Education* 27 (1975): 138-56. (See entry no. 159.)
86. Maharg, Paul, "Contracts: An Introduction to the Skills of Legal Writing

and Analysis,” *Journal of Information, Law and Technology* 1996, no. 2, at <http://elj.warwick.ac.uk/jilt/cal/1maharg/default.htm>.

Maharg describes *Contracts*, a hypertext computer program that focuses on legal writing and problem-solving skills. He discusses how students learn from the program and describes the educational theories upon which it is based. He reports that a pilot study showed the program to be effective and discusses future plans for further evaluation and revision of the program.

87. Nagel, Stuart S., “Using Microcomputers in Case Method of Law Teaching,” *Legal Studies Forum* 12 (1988): 349–75.

Software based on spreadsheet analysis can be used to facilitate goal-oriented reasoning in the case method of law teaching. Nagel describes this process and explains the advantages of computers in briefing and synthesizing cases and in evaluating legal policy.

88. Palacios, Victoria J., “Partnering Technology with Learning,” *Law Teacher* (Fall 1997): 6–7.

*Tortorial* is an electronic supplement written by Palacios for her torts class and described in this brief essay. She explains how *Tortorial* uses both analytic and synthetic models of cognition to appeal to auditory and visual learners.

89. Young, Max, “CAL Tuition for First-Year Law Undergraduates: Help with Problem Solving,” *Law Technology Journal* 1, no. 1 (1991), at [www.law.warwick.ac.uk/ltj/1-1i.html](http://www.law.warwick.ac.uk/ltj/1-1i.html).

This article explains the use of CAL tutorials in contract law from 1982 to 1985. Based on his findings from this period of use, Young concludes that CAL can be used effectively to supplement conventional instruction but should not replace it.

90. Young, Max, “Computer-Assisted Contract Law Tutorials,” *Yearbook of Law Computers and Technology* 2 (1986):131–34.

Young describes a set of seven computer tutorials he developed to help students understand the methodology of problem solving in contract law. Based on a questionnaire, he reports that students using the tutorials learn very quickly but show no significant difference in their performance on exams. He concludes that CAI should be combined with classroom learning.

91. Young, Max, “Constructing CAL Tutorials,” *The Law Teacher* 26 (1992): 145–150.

When designing a CAL tutorial, an author should first identify its educational objectives and then consider other cognitive and pragmatic factors set forth in this essay. Young discusses features required of a CAL exercise, including the ability to identify and remediate students who have difficulty with the tutorial, to allow students to analyze problems, and to provide feedback.

92. Young, Max, “The Cost of CAL,” *Law Technology Journal* 2, no. 2 (1993), at [www.law.warwick.ac.uk/ltj/2-2c.html](http://www.law.warwick.ac.uk/ltj/2-2c.html).

The initial high production costs of computer-assisted instruction diminish each year a tutorial is used. Young suggests that time and costs would decrease further if a full-time center, nationally or within each educational institution, were

established to develop CAL lessons. Young also recommends that legal educators be given the time to develop the CAL material.

### *Curriculum*

#### *Clinical Programs*

93. Allebach, Elizabeth, Larry Farmer, and Marc Lauritsen, "Computer-Based Practice Systems in a Law School Teaching Clinic: A Five-Year Review and Evaluation." In *9th BILETA [British and Irish Law, Education and Technology Association] Conference: Building Systems*, Liverpool, Gr. Brit., 1993, at [www.bileta.ac.uk/93papers/allebach.html](http://www.bileta.ac.uk/93papers/allebach.html).  
This conference paper reports on an evaluation of computer-assisted practice systems at Harvard Law School's Legal Aid Bureau, a poverty law teaching clinic. The authors examine how the Massachusetts Divorce Practice System was developed and maintained over a five-year period. They also assess the impact of its use on student learning, finding that the system builds confidence and provides unique opportunities for teaching professional responsibility.
94. Arnold, Douglas, "The Benefits of Computers in a Legal Clinic," *Software Law Journal* 2 (1988): 511–34.  
As computers become increasingly essential in law practice, clinical education programs face mounting pressure to teach students to use technology. This article discusses and evaluates an early experiment using computers in the University of British Columbia's Legal Clinic. After describing the computer system used, Arnold discusses its costs and benefits. He concludes that the technology improved planning, information management, quality control, and productivity.
95. Nagel, Stuart S., "Microcomputers as Decision Aids in Practice and Clinical Legal Education: The Poverty Law Perspective," *Software Law Journal* 2 (1988): 167–84.  
In describing how technology can aid clinical legal education, Nagel explains how multicriteria decision-making software was applied to the evaluative and predictive tasks in a poverty law clinic. He concludes that computers can develop not only analytical skills, such as case analysis, legal policy evaluation, and advocacy, but also the interactive skills involved in counseling, negotiation, and mediation.
96. Paliwala, Abdul, "The Technology of Clinical Legal Education," *Yearbook of Law Computers and Technology* 3 (1987): 181–94.  
Paliwala examines the role of technology in clinical legal education, both as a discrete lawyering skill that should be taught and as an instructional tool that can enhance learning. Emphasizing that technology should not disrupt the goals of a particular program, he discusses specific technologies and outlines principles for implementing them in a clinical program.
97. Sprowl, James A., and Ronald Staudt, "Computerizing Client Services in

the Law School Teaching Clinic: An Experiment in Law Office Automation,” *American Bar Foundation Research Journal* 1981, no. 3: 699–731.

In the first experimental use of computers in a law school clinic, attorneys and their assistants were trained to set up and use a computer to collect client data and to assemble legal documents for clients. Sprowl and Staudt analyze the results of the experiment and conclude that automated law practice systems will help attorneys serve clients more competently and efficiently.

98. Staudt, Ronald, and James A. Sprowl, “Automating Administrative Systems in a Law School Teaching Clinic: Designing a Computer System to Process Case and Time Data for Management and Research,” *American Bar Foundation Research Journal* 1981, no. 4: 1111–49.

Staudt and Sprowl designed a case and time management computer system to meet the information needs of a law school teaching clinic. Their article describes the system and provides suggestions for how it can be used to study the practice of law and the process of legal education. They conclude that the reports generated by the system will make clinics fully accountable to funding sources and demonstrate the strengths and weaknesses of the clinical teaching process. Appendixes include sample reports.

99. Taylor, Scott A., “Computer and Internet Applications in a Clinical Law Program at the University of New Mexico School of Law,” *Journal of Law and Information Science* 6 (1995): 35–48.

The use of technology in a clinical teaching setting enables students to increase their computer literacy while learning doctrinal law and acquiring important lawyering skills. Taylor describes the clinical tax law program he developed at the University of New Mexico in which students use computers, expert systems software, online legal research, and e-mail to prepare federal and state income tax returns for low-income people.

#### *Doctrinal Courses*

100. Andersen, William R., “Computer Graphics in the Teaching of Administrative Law,” *Brandeis Law Journal* 38 (2000): 229–38. (See entry no. 78.)
101. Calderwood, David, “An Internet Exercise in Conveyancing Practice,” *Web Journal of Current Legal Issues* 1996, no. 5, at <http://webjcli.ncl.ac.uk/1996/issue5/calder5.html>.

Law students at two universities participated in an interactive Internet exercise that involved obtaining title deeds for property, drafting, and amending contracts. Calderwood reports that while students found the exercise to be helpful, they experienced difficulties using the software and accessing the computer laboratories and complained that the exercise had been conducted too early in the year. Appendixes provide samples of documents used in the exercise.

102. Hardy, Trotter, "An Experiment with Electronic Mail and Constitutional Theory," *Journal of Legal Education* 44 (1994): 446–51. (See entry no. 4.)
103. Hunter, Dan, "Teaching Artificial Intelligence to Law Students," *Law Technology Journal* 3, no. 3 (October 1994), at [www.law.warwick.ac.uk/ltj/3-3h.html](http://www.law.warwick.ac.uk/ltj/3-3h.html).  
This article discusses the development and teaching of a course on law and artificial intelligence at the University of Melbourne Law School. After learning theoretical background and the application of AI techniques in modeling legal reasoning, students built a small legal expert system. Hunter discusses lessons learned along the way and plans to revise the course.
104. Johnson, Andrea L., "Distance Learning and Technology in Legal Education: A 21st Century Experiment," *Albany Law Journal of Science and Technology* 7 (1997): 213–68. (See entry no. 129.)
105. Leslie, Douglas L., "How Not to Teach Contracts, and Any Other Course: PowerPoint, Laptops, and the Casefile Method," *St. Louis Law Journal* 44 (2000): 1289–316.  
In part three of this article, Leslie discusses the effect of laptops and PowerPoint presentations on classroom interactions. He concludes that their use promotes lecturing and discourages student participation. He also explains how he employs case files to promote interaction in his contracts class, using the Internet to distribute teaching materials.
106. Ozcan, "The LHR Electronic Resource Page: Webbing the Pacific—Teaching an Intercontinental Legal History Course," *Law and History Review* 18 (2000): 445–56.  
Authored by several legal historians collectively named "Ozcan," this essay describes their collaborative efforts in developing and delivering an online program in comparative legal history. In 1997, students from Canada and Australia attended physical and virtual classrooms, accessed all course materials on a common Web site, and participated in threaded discussions. The authors discuss developing communication technologies and the lessons learned from this program.
107. Slomanson, William R., "Electronic Lawyering and the Academy," *Journal of Legal Education* 48 (1998): 216–28.  
Slomanson argues that legal educators have the responsibility to integrate teaching and technology in legal education. He describes his experiment in teaching California civil procedure with an electronic component. He also discusses his course Web site, e-mail discussion groups, Web site construction options, and course content.
108. Staudt, Ronald, "Computers at the Core of Legal Education: Experiments at IIT Chicago-Kent College of Law," *Journal of Legal Education* 35 (1985): 514–27.  
Staudt describes three successive phases of the early experiments integrating technology into the first-year curriculum at Chicago-Kent College of Law: a

pilot study using computers as word processors for legal writing assignments; an experimental first-year section using computers for automatic outlining and class preparation; and a project integrating computer resources into the teaching of torts, legal writing, and legal methods.

109. Terrett, Andrew, "Using Artificial Intelligence to Teach Legal Reasoning," *Computers and Law* 5 (1994): 33–34.

This essay describes Legal Reasoning and Artificial Intelligence, a third-year course offered at the University of British Columbia law school. When students developed their own expert systems, they considered matters such as legal theory and conceptual design. They also wrote the rules of the knowledge base, created a database, and documented the project. The course is used as a testing ground for further work on expert systems.

#### *Skills Courses*

110. Christ, Maria Perez, "Technology in the LRW Curriculum: High Tech, Low Tech, or No Tech," *Legal Writing: Journal of the Legal Writing Institute* 5 (1999): 93–123.

Christ examines the impact of technology on learning in legal research and writing (LRW) courses. She describes and assesses specific technologies, discusses institutional obstacles to their use, and provides tips for novices. She concludes that technology belongs in the LRW curriculum when it can be used to foster active learning and collaboration, to develop critical reading, analytical, and retrieval skills, and to enhance communication.

111. Downie, Jocelyn, Michael Deturbide, and Laura Fraser, "A Computer-Assisted Legal Research and Writing Course," *Dalhousie Law Journal* 21 (1998): 429–39.

*WebCT* is a computer program that supports the design and maintenance of courses on the Internet. Using *WebCT*, the authors developed a package that included a legal research and writing course Web site, bulletin board, e-mail, and links to other Web sites. They also used *WebCT* to create, distribute, and grade a citation assignment. They conclude that, despite some difficulties, *WebCT* can be a valuable tool for legal research and writing faculty.

112. Ehrenberg, Suzanne, "Legal Writing Unplugged: Evaluating the Role of Computer Technology in Legal Writing Pedagogy," *Legal Writing: Journal of the Legal Writing Institute* 4 (1998): 1–22.

Ehrenberg makes a convincing argument that technology has failed to enhance legal writing pedagogy and may have made teaching more complicated. In addition to familiarizing themselves with the technology their students are using, legal writing professionals must also sensitize students to the ways in which word processing affects their writing process and teach both the mechanics of online research and its limitations.

113. Rosenbaum, Judith, "CALR Training in a Networked Classroom," *Perspectives: Teaching Legal Research and Writing* 8 (2000): 79–82.

After summarizing the history of computer-assisted legal research (CALR)

training, Rosenbaum reviews a decade of teaching approaches at Northwestern University School of Law. The article discusses how pedagogical, logistical, and staffing difficulties were resolved by teaching CALR to sixty students who brought laptops to a networked classroom.

114. Silecchia, Lucia Ann, "Of Painters, Sculptors, Quill Pens, and Microchips: Teaching Legal Writing in the Electronic Age," *Nebraska Law Review* 75 (1996): 802–46.

The electronic age has transformed the way students write, edit, and revise. Silecchia discusses the benefits and detriments of this change, recommending that LRW faculty adapt their pedagogical methods to help students employ technology constructively. She also suggests techniques for ensuring that law students become effective writers.

115. Zanglein, Jane Elizabeth, and Katherine Austin Stalcup, "Te(a)chnology: Web-Based Instruction in Legal Skills Courses," *Journal of Legal Education* 49 (1999): 480–503.

Zanglein and Stalcup hypothesized that Web-based instruction in skills courses would improve student learning and satisfaction because it accommodates various learning styles. In this article, they examine selected learning theories, discuss the pedagogical attributes of various technologies, and report on their own use of learning theory and technology in legal skills courses. They conclude that the technologies used had a positive effect on teaching and learning.

#### *Distance Education*<sup>10</sup>

116. Arcabascio, Catherine, "The Use of Video-Conferencing Technology in Legal Education: A Practical Guide," *Virginia Journal of Law and Technology* 6, no. 1 (2001), at <http://www.vjolt.net/vol6/issue1/v6i1a05-Arcabascio.html>.

In 1997, Nova Southeastern University (NSU) Shepard Broad Law Center became the first law school in the United States to use videoconferencing technology in its clinical externship program. Arcabascio, director of the Criminal Justice Clinic, describes NSU's program, addresses pedagogical and planning issues, and provides a practical guide to computer-based distance legal education.

117. Boyd, William E., "But What is it Good For? Using Interactive Video in Legal Education and Law Practice," *Journal of Information, Law and Technology* 1999, no. 3, at <http://elj.warwick.ac.uk/jilt/99-3/boyd.html>.

Boyd recounts his experiences using videoconferencing in five situations: (1) teaching a course jointly at two law schools; (2) conducting a simulation in

---

10. Distance education, also known as distance learning, refers to instructional methods, including video and computer technologies, used when "the teacher and student are not physically and simultaneously present in the same classroom." Catherine Arcabascio, *The Use of Video-Conferencing Technology in Legal Education: A Practical Guide*, 6 VA. J.L. & TECH. 5 (2001), at <http://www.vjolt.net/vol6/issue1/v6i1a05Arcabascio.html>.

which students at three law schools participated; (3) teaching a course in which students used interactive video to cross-examine a forensics expert; (4) staging a virtual bankruptcy court proceeding involving on-site and remote participants; and (5) bringing virtual guest lecturers to his cyberlaw class. In each case, he explains the mechanics and benefits of this technology. This online article links readers to audio samples of the conferencing sessions.

118. Cartwright, Andy, and Paul Street, "Issues in the Development of Post-Graduate Electronic Distance Learning Materials." In *Distance Learning: The Way Forward*, Law Technology Centre Seminar, University of Warwick, 1998, at [www.law.warwick.ac.uk/seminars/98-3-ps.html](http://www.law.warwick.ac.uk/seminars/98-3-ps.html).  
In this seminar paper, Cartwright and Street discuss technological, pedagogical, and administrative issues they confronted in developing electronic distance learning (DL) materials for an LL.M. in Law and Development at the University of Warwick. They focus on the core text used in the two modules discussed, advocating a multilayered, interactive approach that blends features of lecture and seminar.
119. English, Julie, "The LL.B. (Distance Learning) Degree of Nottingham Law School: The Student Perspective," *Law Librarian* 28 (1997): 207–10.  
English, a graduate of the Distance Learning Legal Practice Program at Nottingham Law School, comments on her experiences while earning an LL.B. degree via DL. Topics covered include a description of the program, residential weekends, and learning materials.
120. Fairhurst, John, "Evaluation of an Internet-based PgDL (CPE) Course," *Journal of Information, Law and Technology* 1999, no. 3, at <http://elj.warwick.ac.uk/jilt/99-3/fairhurst.html>.  
This paper describes and evaluates a postgraduate diploma in law offered in the United Kingdom via DL. The two-year, part-time program uses the Internet as the principal mode of delivery. After comparing distance and traditional students in this program, Fairhurst reports that the DL program has a higher attrition rate and superior performance on examinations. He also discusses implementation issues, such as Web site design, e-mail discussions, and learning materials.
121. Fairhurst, John, "Huddersfield's Electronically Delivered PgDL (CPE) Course, Part Two," *Journal of Information, Law and Technology* 2000, no. 3, at <http://elj.warwick.ac.uk/jilt/00-3/fairhurst.html>.  
Fairhurst updates his earlier work (see entry no. 120) evaluating a postgraduate diploma in law offered in the United Kingdom via DL. He covers a wide range of topics, including pedagogical concerns, new technologies employed in the second year of the program, and collaborative learning. An appendix uses graphics to illustrate the Blackboard Learning Environment, which incorporates group work facilities, discussion lists, and chat rooms.
122. Goldring, John, "Coping with the Virtual Campus: Some Hints and Opportunities for Legal Education," *Legal Education Review* 6 (1995): 91–116.

Goldring contends that distance education (DE) may provide the only opportunity for many Australian students to study law. He discusses learning theory, teaching methods, and the benefits of distance legal education.

123. Goldring, John, "Distance Teaching in Law: Possibilities for Commonwealth Cooperation," *Legal Education Review* 2 (1990): 83–99.  
This article describes DE in law teaching in Australia. Goldring suggests that commonwealth countries share materials and support services to meet the demand for distance legal education.
124. Guneratne, Camena, "Teaching Law Through Distance: The Sri Lankan Experience," ERIC: ED 351931 (1992), 11p.  
Guneratne describes distance legal education at the Open University of Sri Lanka, covering the content of the four-year degree program, as well as the teaching and evaluation methods and materials used. The article concludes with a discussion of problems and perspectives, and an appendix lists the courses in each year of study.
125. Heise, Michael, "Closing One Gap But Opening Another? A Response to Dean Perritt and Comments on the Internet, Law Schools, and Legal Education," *Indiana Law Review* 33 (1999): 275–90.  
Responding to Perritt's article (see entry no. 137), Heise discusses the Internet's influence on research, scholarship, teaching, and architecture. He also examines distance learning's potential influence on legal education, concluding that pedagogical, distributional, and equity issues warrant further consideration.
126. Herberger, Maximilian, Friedrich Scheuermann, and Iris Kaufmann, "Collaborative Learning Via WWW in Legal Education," *Journal of Information, Law and Technology* 1998, no. 2, at [http://elj.warwick.ac.uk/jilt/cal/98\\_2kauf/default.htm](http://elj.warwick.ac.uk/jilt/cal/98_2kauf/default.htm).  
This article describes the structure, content, and technical aspects of an online seminar offered at a German law school. Assignments, available on the Internet, involved group collaboration by participants. Comparing this seminar to distance courses using CD-ROM materials, the authors conclude that Web-based courses are superior because the ability to communicate and exchange knowledge more closely approximates conventional classroom teaching.
127. Huxley, Phil, "The LL.B. (Distance Learning) Degree of Nottingham Law School: Origin and Development," *Law Librarian* 28 (1997): 204–06.  
Huxley, a faculty member teaching in the Distance Learning Legal Practice Program at Nottingham Law School, describes how the LL.B. program was customized for distance learners. Topics covered include the degree structure, the assessment system, staffing, student learning, success rates, and teaching and learning materials.
128. Johnson, Andrea L., "Distance Learning and Information Technology: Working Towards an International Model," *Law/Technology* 30, no. 4 (1997): 1–29. (See entry no. 18).
129. Johnson, Andrea L., "Distance Learning and Technology in Legal

Education: A 21st Century Experiment,” *Albany Law Journal of Science and Technology* 7 (1997): 213–68.

Johnson describes her Advanced Telecommunications Law course, which combined live lectures with technology and linked students from two law schools in three videoconferencing and two teleconferencing sessions. She discusses the need for technology and distance education in legal education, explains how to assess technology and its use, and reviews pedagogical and administrative concerns. Appendix one provides a course description, course outline, and sample exercises. Appendix two interprets and evaluates survey data from the author’s course.

130. Kelman, Alistair, “Distance Learning at the LSE with Virtual Tutorials,” *Journal of Information, Law and Technology* 1997, no. 1, at [http://elj.warwick.ac.uk/jilt/sw/97\\_1lse/default.htm](http://elj.warwick.ac.uk/jilt/sw/97_1lse/default.htm).

This article reports on a DL experiment at the London School of Economics in a postgraduate course in “Information Systems and the Law.” Students used a program that enabled them to participate in an off-line tutorial, connecting to the remote system when convenient. Kelman reports a favorable response from students.

131. Leskovac, Helen, “Distance Learning in Legal Education: Implications of Frame Relay Videoconferencing,” *Albany Law Journal of Science and Technology* 8 (1998): 305–35.

After reviewing the application and cost of DL in law schools, Leskovac describes the development of frame relay videoconferencing technology and its use in legal education. She concludes that this technology probably satisfies the American Bar Association’s Temporary Distance Education Guidelines because it closely replicates a traditional law school learning experience. Appendixes reproduce the guidelines, technical information published by the Adirondack Area Network, and a hypothetical law school budget.

132. Martin, Peter, “Distance Learning: The LII’s Experience and Future Plans,” December 1999, at [www.law.cornell.edu/background/distance/liidistance.htm](http://www.law.cornell.edu/background/distance/liidistance.htm).

In 1996, the Legal Information Institute at Cornell Law School offered a copyright class to students at four law schools, including three remote locations. Martin, who taught the course, discusses administrative arrangements, course objectives and content, and the use of Internet technologies to construct, schedule, and deliver the course to students. He also discusses the LII’s future distance learning plans.

133. Migdal, Stephen, “The Impact of Information Technology on Legal Education and Practice,” *Commonwealth Law Bulletin* 24, no.1/2 (1998): 612–18.

Migdal discusses the effectiveness of CD-ROM-based learning packages in distance law programs. Drawing on empirical research among Wolverhampton University law students, he concludes that CD-ROM is an improvement over print materials for DL but cannot adequately replace in-person instruction.

134. Migdal, Stephen, and Martin Cartwright, “Pure Electronic Delivery of Law

Modules: Dream or Reality?" *Journal of Information, Law and Technology* 1997, no. 2, at [http://elj.warwick.ac.uk/jilt/cal/97\\_2migd/default.htm](http://elj.warwick.ac.uk/jilt/cal/97_2migd/default.htm).

Migdal and Cartwright describe the production and piloting of CD-ROM courseware for the distance delivery of two law modules on negligence and medical law. The CD-ROMs contained text, primary and secondary authority, videotaped lectures and lecture outlines, video re-enactments of cases, and interactive study plans with direct e-mail access to tutors. They also discuss the pedagogical advantages of this courseware.

135. Oliphant, Robert E., "Will Internet Driven Concord University Law School Revolutionize Traditional Law School Teaching?" *William Mitchell Law Review* 27 (2000): 841-79.

Oliphant examines the computerized operation and pedagogy of Concord University School of Law, suggesting that several of its techniques could significantly enhance learning in a traditional law school environment. Given the significant technological changes of the last decade, he also suggests that the American Bar Association should review its standards and allow Internet law schools like Concord to apply for accreditation under revised standards.

136. Ozcan, "The LHR Electronic Resource Page: Webbing the Pacific—Teaching an Intercontinental Legal History Course," *Law and History Review* 18 (2000): 445-56. (See entry no. 106.)

137. Perritt, Henry H., Jr., "The Internet is Changing the Face of American Law Schools," *Indiana Law Review* 33 (1999): 253-74.

Perritt argues that DL technologies are critical areas for enhancing legal education. He discusses the design of virtual classrooms, accreditation issues, mobilization of faculty support, and plans for Chicago-Kent College of Law's Internet-enhanced Evening Division curriculum.

138. Reijntjes, Jan, and Martin Valke, "Implications of Electronic Developments for Distance and Face to Face Learning: Ten Statements on the Use of Electronics in Law Teaching," *The Law Teacher* 32 (1998): 245-59.

Reijntjes and Valke develop ten statements on how the electronics of C&IT can be incorporated into legal education to combine the best features of DL studies and conventional teaching methods.

139. Reijntjes, Jan, "Open and Distance Learning in a New Europe," *The Law Teacher* 27 (1993): 163-77.

After describing the development of DE, Reijntjes concludes that this mode of delivery is appropriate to law teaching. Although his proposed European program focuses exclusively on written ECC materials, he advocates using interactive video to enhance distance legal education.

140. Simpson, Moira J., "Distance Learning in Cyberspace," *International Journal of Law and Technology* 4 (1996): 185-98.

Simpson describes early efforts to offer an LL.M. degree program in IT law at the University of Strathclyde in Scotland. Electronic communications were the

sole method for course delivery and faculty-student communications in this program.

141. Taylor, Scott A., "A Critical Look at the Temporary Distance Education Guidelines of the American Bar Association and their Effect on Innovation in Legal Education." In *Distance Learning: The Way Forward*, Law Technology Centre Seminar, University of Warwick, 1998, at [www.law.warwick.ac.uk/seminars/98-3-st.html](http://www.law.warwick.ac.uk/seminars/98-3-st.html).

According to Taylor, the ABA's Temporary Distance Education Guidelines exclude students who are unable to attend on-site classes and subject distance programs to higher interactivity and technological requirements than traditional programs. The prior approval procedures restrict innovation and take time and energy away from the actual educational material and service delivery function.

142. Taylor, Scott A., "Teaching a Law Seminar Over the Internet," *Journal of Law and Information Science* 7 (1996): 41–53.

This article describes and evaluates Taylor's experimental e-mail seminar involving taxation in Indian Country. Ten local students and five Internet students, including one from a Canadian law school, participated. In discussing the strengths and weaknesses of the seminar, he observes that while students communicated extensively with him, they did not interact actively with each other.

143. Terry, Nicholas P., "Bricks Plus Bytes: How 'Click-and-Brick' Will Define Legal Education Space," *Villanova Law Review* 46 (2001) (forthcoming), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=233649](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=233649).

Terry argues that law schools must reengineer themselves as hybrid institutions that combine bricks-and-mortar with virtual education space. He examines arguments commonly raised against distance legal education and argues that the "click-and-brick" model is inevitable if law schools are to compete with Internet-only law schools.

144. Thomas, David. A., "American Legal Education: Moving from the Classroom Without Paper to Instruction Without the Classroom?" *Journal of Information, Law and Technology* 2001, no. 1, at <http://elj.warwick.ac.uk/jilt/01-1/thomas.html>.

American legal educators are ambivalent about DL. In the first part of this article, Thomas discusses this uncertainty, as reflected in the American Bar Association's Temporary Distance Education Guidelines, and reviews the advantages and disadvantages of distance legal education. In the second part, he discusses the use of technology outside the DL paradigm, focusing on his paperless, Web-based property law course.

145. Torres, Arturo Lopez, and W. Clinton Sterling, "Will Law Schools Go the Distance? An Annotated Bibliography on Distance Education in Law," *Law Library Journal* 91 (1999): 655–92.

This comprehensive annotated bibliography reviews current legal and nonlegal literature on selected issues relating to DE. The five topics covered are (1) library accreditation; (2) bibliographies; (3) copyright; (4) legal literature; and (5) library services.

146. Widdison, Robin, and Francis Pritchard, "An Experiment with Electronic Law Tutorials," *Law Technology Journal* 4, no. 1 (1995), at [www.law.warwick.ac.uk/lj/4-1b.html](http://www.law.warwick.ac.uk/lj/4-1b.html). (See entry no. 10.)

*Pedagogical Effectiveness*

147. Allen, Thomas, and William Robinson, "The Future of Computer Assisted Learning in Law," *Journal of Law and Information Science* 3 (1992): 274–86.  
Arguing that CAL has failed to address the intellectual skills required in law practice, Allen and Robinson explain the shortcomings of CAL and the directions it must take in order to assume a significant role in legal education. They also review developments in CAL that use videodisc, branching, hypertext, and AI.
148. Bintliff, Barbara, "From Creativity to Computerese: Thinking Like a Lawyer in the Computer Age," *Law Library Journal* 88 (1996): 338–51.  
Bintliff argues that computerized legal research endangers the predictability and stability of our judicial system. Because information in databases is organized by words rather than concepts or legal rules, computer users base their research strategies on facts. They neither start nor end with a statement of applicable legal rules and therefore lack a framework for the legal arguments upon which judges base their decisions. Until concept-based computer-retrieval systems are developed, Bintliff cautions legal educators to be aware of the limits of the tools they use.
149. Burris, Russell, "Critical Features of Microcomputer-Based Exercises for Effective Teaching and Learning of Law," *Yearbook of Law Computers and Technology* 3 (1987): 36–51.  
Burris describes the history and development of the Center for Computer-Assisted Legal Instruction, now known as CALI. Based on the center's experience in developing computer-based instructional materials, he identifies features that characterize effective computer-based exercises and simulations and discusses the implications of these experiences for an authoring support system.
150. Clark, Robert Charles, "A Postscript on Gary Korn's Reservations About CAI," *Journal of Legal Education* 33 (1983): 489–91.  
In response to Korn's article (see entry no. 157), Clark explains legal education's poor reception to CAI and maintains that existing technology has much to offer. One advantage, he posits, involves active participation by computer users. He also addresses fears that CAI is designed to replace human interaction, emphasizing that its goal is to diversify instructional methodology.
151. Clark, Robert Charles, "The Rationale for Computer-Aided Instruction," *Journal of Legal Education* 33 (1983): 459–88.  
The stated aim of this early article is to provide background information that will assist legal educators in evaluating the potential of CAI. Clark explores theoretical considerations behind increased use of CAI and discusses the empirical

evidence of its effectiveness. He also describes Harvard Law School's initiative in developing computer programs for teaching law. The article concludes with an extensive bibliography of pre-1983 literature on CAI.

152. Christ, Maria Perez, "Technology in the LRW Curriculum: High Tech, Low Tech, or No Tech," *Legal Writing: Journal of the Legal Writing Institute* 5 (1999): 93–123. (See entry no. 110.)
153. Donahoe, Diana R., "www.teachinglaw.com: Bridging the Digital Divide Between Law Professor and Law Student," *Virginia Journal of Law and Technology* 5 (2000): 13–90. (See entry no. 170.)
154. Ehrenberg, Suzanne, "Legal Writing Unplugged: Evaluating the Role of Computer Technology in Legal Writing Pedagogy," *Legal Writing: Journal of the Legal Writing Institute* 4 (1998): 1–22. (See entry no. 112.)
155. Jones, Richard, and John Scully, "Effective Teaching and Learning of Law on the Web," *Web Journal of Current Legal Issues* 1998, no. 2, at <http://webjcli.ncl.ac.uk/1998/issue2/jones2.html>.  
Jones and Scully argue that improved access to information, even in hypertext, does not necessarily promote deep learning. After examining various learning theories, they conclude that an effective Web teaching environment should include computer-supported collaborative learning in order to foster deep learning. They also recommend features that should be included when designing exercises for a hypertext learning environment.
156. Jones, Richard, and John Scully, "Hypertext Within Legal Education," *Journal of Information, Law and Technology* 1996, no. 2, at <http://elj.warwick.ac.uk/jilt/cal/2jones/default.htm>.  
This paper describes how educational technology that embodies hypertext facilities can encourage deep learning. Jones and Scully review the effectiveness of hypertext-based learning in achieving the pedagogical goals of legal education. They also offer some suggestions for improving hypertext systems to enable these outcomes to be attained.
157. Korn, Gary Clifford, "Computer-Assisted Legal Instruction: Some Reservations," *Journal of Legal Education* 33 (1983): 473–88.  
This is one of the few early articles expressing skepticism about the advantages of CAI. Responding to Clark's article (see entry no. 151), Korn posits that CAI is used infrequently in legal education because it has failed to live up to the claims of its proponents. He also challenges the purported benefits of CAI.
158. Lien, Molly Warner, "Technocentrism and the Soul of the Common Law Lawyer," *American University Law Review* 48 (1998): 85–134.  
Lien argues that technology encourages lawyers and law students to focus on information retrieval and management at the expense of careful analysis and critical evaluation of the rules. She suggests that these changes may impair the evolution of the common law because they value speed and rule extraction over depth and reflection. Lien discusses technology and learning style, as well as the

lack of empirical evidence of the effectiveness of computer-based instruction. She cautions that lawyers will use technology more prudently only if they are cognizant of its negative effects.

159. Maggs, Peter B., and Thomas D. Morgan, "Computer-Based Legal Education at the University of Illinois: A Report of Two Years' Experience," *Journal of Legal Education* 27 (1975): 138–56.

In this early article, Maggs and Morgan describe their experiences using the PLATO IV method of CAI to teach future interests to first-year law students at the University of Illinois College of Law. Analyzing examination performance data of four groups of law students, they conclude that CAI is superior when it is used to supplement conventional teaching.
160. Maharg, Paul, "Law, Learning, Technology: Reiving Ower the Borders," *International Review of Law Computers and Technology* 14 (2000): 155–70.

Maharg examines the application of composition and rhetorical theory to legal writing and analyzes its implementation in *Contracts*, a computer-based writing program. He claims that the theoretical constructs of other disciplines can inform legal educators about how to teach law more effectively, how students learn, and what they understand as the learning process, all of which play critical roles in computer-based learning. He also analyzes how argumentation models might be applied to AI models of legal argumentation.
161. Maume, David J., Jr., and Ronald Staudt, "Computer Use and Success in the First Year of Law School," *Journal of Legal Education* 37 (1987): 388–98.

First-year law students at Chicago-Kent College of Law participated in an experimental program combining computerized instruction with traditional teaching methods in legal methods, legal writing, and torts. Maume and Staudt found that higher rates of computer use were positively and significantly correlated with grade point average in the first year of law school. They further found that computer use was more beneficial to below-average students than to average students. Maume and Staudt therefore posit that computer use may reduce academic stratification.
162. Migdal, Stephen, and Martin Cartwright, "Electronic Delivery in Law: What Difference Does It Make to Results?" *Web Journal of Current Legal Issues* 2000, no. 4, at <http://webjcli.ncl.ac.uk/2000/issue4/migdal4.html>.

Migdal and Cartwright evaluated the effect of electronic delivery of law modules on student performance. When they compared the grades of students who had taken both traditional and electronic modules, they found little or no difference in the grades of stronger students. Weaker students scored approximately 10% higher in electronic modules than they did in the traditional modules. Appendix one explains the authors' grading system and defines terms used in the article. Appendix two explains their assessment criteria for grading.
163. Migdal, Stephen, and Martin Cartwright, "Information Technology in the Legal Curriculum: Reaction and Realities," *The Law Teacher* 32 (1998): 260–73.

After describing their use of two multimedia learning programs, Migdal and Cartwright draw three conclusions: (1) students are best taught by conventional methods; (2) electronic delivery is most effective when used to complement rather than to replace conventional teaching methods; and (3) electronic media are better suited to the acquisition of basic legal knowledge than to the acquisition of higher cognitive skills.

164. Paliwala, Abdul, "Evaluating Technology and Technological Evaluation," *The Law Teacher* 24 (1990): 102–11.

This article explores approaches to evaluating the role of technology in legal education. Paliwala discusses the objectives and techniques of evaluation methodology as well as the role of computerized record keeping, expert systems, and AI in the evaluation process.

165. Park, Roger, and Russell Burris, "Computer-Aided Instruction in Law: Theories, Techniques, and Trepidations," *American Bar Foundation Research Journal* 1978, no. 1: 1–47.

Park and Burris provide a detailed historical introduction to CAI, tracing its development over two decades and explaining how CAI might be applied to legal education. They analyze the computer's capacity for use in memory drills, tutorial sessions, and simulation exercises, concluding that simulation exercises may be the most successful use of CAI. They also review attempts to measure the effectiveness of law-related CAI. In so doing, they caution that such studies should focus not on the effectiveness of the computer as an instructional vehicle but instead on the effectiveness of a particular CAI exercise.

166. Shapiro, Stephen J., "The Use and Effectiveness of Various Learning Materials in an Evidence Class," *Journal of Legal Education* 46 (1996): 101–09.

Shapiro reports on his informal survey of student use of three forms of instructional materials in his evidence course: the assigned casebook, a hornbook, and CALI exercises. He correlated exam grades with survey responses regarding use of the materials and concluded that only the CALI exercises resulted in an improvement in performance.

167. Teich, Paul F., "How Effective Is Computer-Assisted Instruction? An Evaluation for Legal Educators," *Journal of Legal Education* 41 (1991): 489–501.

Few studies exist demonstrating the efficacy of CAI in law schools. In this article, Teich reviews the empirical research on the effectiveness of CAI at the college level and concludes that CAI might be used effectively in legal education as well.

168. Zanglein, Jane Elizabeth, and Katherine Austin Stalcup, "Te(a)chnology: Web-Based Instruction in Legal Skills Courses," *Journal of Legal Education* 49 (1999): 480–503. (See entry no. 115.)

*Law Schools**Architecture*

169. Wood, Richard J., "Capital Improvements: A Guide for the Construction of a Modern Law School," *Capital University Law Review* 27 (1999): 709–82. This article discusses the process of creating a new law school building. Section two, which explains how to identify and evaluate needs for new space, addresses three major areas affected by technology: the library, classrooms, and administrative space.

*Faculty*

170. Donahoe, Diana R., "www.teachinglaw.com: Bridging the Digital Divide Between Law Professor and Law Student," *Virginia Journal of Law and Technology* 5 (2000): 13–90. Faculty members who prefer print materials differ from students who read online in their reading methods, thought processes, and interaction with the written text. Donahoe examines how this "digital divide" affects perception, knowledge, and understanding of the material presented. She also suggests changes in traditional law school curricula, pedagogies, and course materials to prepare professors and students for the shift from printed text to online information.
171. Sheppard, Steve, "The Role of the Professor in the High-Tech Law School," *Journal of Law School Computing* 1, no. 1 (1999), at [www.cali.org/jlsc/sheppard.html](http://www.cali.org/jlsc/sheppard.html). According to Sheppard, certain functions of a legal education can never be automated without fundamental loss to the profession, the student, and the public the student will one day serve. Among the functions discussed in this article, Sheppard sees the most important as the personal relationships that teach character and virtue and that provide role models for students.

172. Staudt, Ronald, "Does the Grandmother Come With It? Teaching and Practicing Law in the 21st Century," *Case Western Reserve Law Review* 44 (1994): 499–529. Staudt argues that technology will never displace the human aspects of teaching and lawyering because computers are merely tools operated by human beings for the benefit of students and clients. He predicts that human interaction will increase as computers find their way onto the desks of every law student and lawyer, who will then communicate and collaborate in a vast electronic academy. An appendix provides information about the use of technology in law practice.

*Libraries and Librarians*

173. Berring, Robert C., "The Electronic Law Library: The Electronic Future of Law Libraries," *Law Librarian* 24 (1993): 168–73. According to Berring, librarianship is a profession at risk because librarians have failed to adapt to the paradigm shift caused by the transition from print to

digital information. He discusses how many of the traditional roles of librarians have been obviated by the digital revolution. Concluding that the distribution of electronic information offers law librarians their best opportunities for development, Berring proposes that they provide their expertise to Westlaw and LEXIS vendors as a means of preserving professional presence and ideals.

174. Daly, Gail M., "Law Library Evaluation Standards: How Will We Evaluate the Virtual Library?" *Journal of Legal Education* 45 (1995): 61–78.  
Daly examines issues relating to how the virtual law library is evaluated, including technological considerations, budgetary constraints, and accreditation concerns. She proposes that more flexible quantitative measures be adopted, with evaluation focusing on information service and access to remote databases.
175. Danner, Richard A., "The Effects of Information Technology on Law Librarianship: An American Perspective," *Law Librarian* 27 (1996): 204–7.  
Danner considers the impact of IT on law school libraries and librarians, focusing on evolving relationships between librarians and information technologists and the changing role of the library director. He also discusses the conclusions of a report issued by the American Association of Law Libraries on the future role of law librarians.
176. Danner, Richard A., "Facing the Millennium: Law Schools, Law Librarians, and Information Technology," *Journal of Legal Education* 46 (1996): 43–58. (See entry no. 16.)
177. Katsh, Ethan, "The Law Librarian as Paratrooper," *Law Library Journal* 83 (1991): 627–41.  
As technology changes their roles and the operations of the libraries within which they work, law librarians should create new relationships within the law school. Katsh discusses trends affecting law librarians and approaches to creating these new relationships.
178. Kauffman, S. Blair, "Technology and Law Library Design," *St. John's Law Review* 70 (1996): 163–79.  
Addressing the question of how to plan law libraries in a high-technology age, Kauffman advocates a flexible design that accommodates continued moderate book growth while allowing for integrated access to information in multiple formats. After reviewing efforts at Harvard, Columbia, and Yale to accommodate book growth, Kauffman discusses five options that should be considered when designing a flexible law library: (1) converting open stack areas to compact shelving; (2) incorporating conduits for wiring so that new wiring can be pulled later when standards change or more electronic access is needed; (3) planning adjacencies for computer labs, classrooms, and microforms so that expansion of one function can offset the decreased use of another; (4) allowing space for study and research; and (5) designing staff space to accommodate the changing demands placed on library services by increased computer use.
179. Martin, Peter, "The Future of Law Librarians in Changing Institutions, or the Hazards and Opportunities of New Information Technology," *Law Library Journal* 83 (1991): 419–28.

Martin discusses how IT not only displaces law librarians but also creates new opportunities for them. He explores their new roles in evaluating electronic services, organizing the electronic library, setting new citation standards, building and maintaining in-house collections, integrating delivery of print-based materials, assembling and distributing nontraditional legal information, and replacing print law reviews.

180. Pettit, Sue, "Remember the Librarians," *Journal of Information, Law and Technology* 1996, no. 3, at <http://elj.warwick.ac.uk/jilt/BILETA/1996/3pettit/default.htm>.

As the electronic library changes the way information is stored and obtained, the role of law librarians will be transformed into that of information managers and legal research skills trainers. Pettit considers these changes in the context of academic libraries in general and law libraries in particular.

181. Price, M. Kathleen, "Technology and Law Library Administration," *St. John's Law Review* 70 (1996): 145–61.

Price addresses the challenges facing law library administrators in the face of rapidly advancing technology. She discusses increased demands placed upon administrators by the internationalization of electronic legal information, cooperative alliances with computer professionals, external demands, and the emerging electronic library. Price urges law library administrators to involve themselves in the design and maintenance of technology, to explore electronic collection sharing, to address technical and accreditation standards, and to make themselves central to law school academic programs.

182. Snyder, Fritz, "The Impact of New Technologies on Law Library Acquisitions," *Legal Reference Services Quarterly* 6 (1986): 159–68.

Snyder reviews materials in LEXIS and Westlaw and the findings of a survey on the impact of technology on information publication, discussing the possibility of using online databases as substitutes for the acquisition of new law library materials.

183. Wood, Richard J., "Capital Improvements: A Guide for the Construction of a Modern Law School," *Capital University Law Review* 27 (1999): 709–82. (See entry no. 169.)

#### Law Reviews

184. Bruce, Thomas R., "Swift, Modest Proposals, Babies, and Bathwater: Are Hibbitts's Writes Right?" *Akron Law Review* 30 (1996): 243–48.

This article examines Hibbitts's proposal (see entry no. 193) that legal scholars self-publish on the World Wide Web. Although Bruce agrees that electronic self-publication would provide a better system for communicating legal scholarship than is currently provided by law reviews, he expresses concern about other critical functions of law reviews. In particular, Bruce discusses institutional reputation, writing experience for students, and credentialing systems for both faculty and students.

185. Danner, Richard A., "Electronic Publication of Scholarly Information in Law: A View from the United States," *International Journal of Legal Information* 28 (2000): 465–82.  
Danner discusses the potential effects of the electronic research environment on legal scholarship. He examines communications patterns in law and other disciplines, including electronic archives, traditional and electronic law reviews, and Web publication of working papers. He also reviews collaborative efforts such as the Legal Scholarship Network, the Open Archive Initiative, and the Legal Electronic Document Archive. Danner concludes that these collaborative endeavors will provide a viable alternative to print journals without sacrificing the institutional benefits of school-based legal scholarship.
186. Delgado, Richard, "Eliminate the 'Middle Man'?" *Akron Law Review* 30 (1996): 233–35.  
Delgado refutes the suggestion of Hibbitts (see entry no. 193) that publication of legal scholarship on the Web does not require the intervention of law review editors. He concludes that both print and Web publishing can co-exist and even compete, with the free market demonstrating which vehicle offers the greater advantages and which vehicle is best suited to a particular discourse.
187. Denemark, Howard A., "The Death of Law Reviews Has Been Predicted: What Might Be Lost When the Last Law Review Shuts Down?" *Seton Hall Law Review* 27 (1996): 1–32.  
Denemark examines the implications of Hibbitts's proposal (see entry no. 193) that legal scholars self-publish on the Web, focusing on the role of law review editors and dangers of the impermanence of electronically disseminated scholarship.
188. Denemark, Howard A., "How Valid Is the Often-Repeated Accusation That There Are Too Many Legal Articles and Too Many Law Reviews?" *Akron Law Review* 30 (1996): 215–32.  
Denemark refutes the suggestion by Hibbitts (see entry no. 193) that self-publication on the Web is desirable because too many articles, marred by flawed student editing, are published by too many law reviews. He observes that the loss of preemptive editorial controls would actually increase the number of articles published, resulting in unnecessarily repetitive scholarship. He also discusses the value of law reviews to students and to readers concerned with prominent local issues.
189. Grant, Bruce, "Economics of Electronic Law Journals," *Journal of Information, Law and Technology* 1996, no. 3, at <http://elj.warwick.ac.uk/jilt/BILETA/1996/3grant/default.htm>.  
This brief article examines the economics of electronic publication and considers possible funding models, including "pay per view," subscription schemes, page charges, and sponsorship. Grant maintains that the future of electronic law journals will depend in large measure on their ability to offer scope for innovative legal scholarship while achieving the high standards of print journals.
190. Hardy, Trotter, "Review of Hibbitts's Last Writes?" *Akron Law Review* 30 (1996): 249–54.

Hardy examines several of Hibbitts's justifications (see entry no. 193) for moving to faculty self-publication on the Web. Hardy points out that Hibbitts's proposal will entail greater expenditures of time on hypertext linking and multimedia, increased concern about the formatting of Web references and their stability, and significant effort updating materials while enabling readers to track article versions that metamorphose over time.

191. Hardy, Trotter, "Starting an Electronic Journal in Law," *Journal of Information, Law and Technology* 1996, no. 3, at <http://elj.warwick.ac.uk/jilt/BILETA/1996/3hardy/default.htm>.

Hardy discusses his experience in starting the *Journal of Online Law*, an electronic journal dealing with the legal issues of cyberspace. He addresses issues such as subscription prices, design, content, editing, publicity, copyright, production, and distribution.

192. Hibbitts, Bernard J., "E-Journals, Archives, and Knowledge Networks: A Commentary on Archie Zariski's Defense of Electronic Law Journals," *First Monday: Peer Reviewed Journal on the Internet* 2, no. 7 (1997), at [www.firstmonday.dk/issues/issue2\\_7/hibbitts/](http://www.firstmonday.dk/issues/issue2_7/hibbitts/).

Hibbitts argues that the potential of the Internet to enhance and energize legal learning surpasses that of the electronic law journal. Responding to Zariski (see entry no. 204), he discusses the advantages of establishing an electronic archive of self-published scholarship on the Internet and explains how electronic journals could never support the kind of knowledge network that the archive format supports.

193. Hibbitts, Bernard J., "Last Writes? Reassessing the Law Review in the Age of Cyberspace," *New York University Law Review* 71 (1996): 615–88.

In this controversial article, Hibbitts analyzes the history and future of the law review and predicts its demise. He proposes that legal writers self-publish on the World Wide Web in order to overcome the editorial and material limitations of the law review format and take advantage of the range of intellectual and professional opportunities presented by electronic self-publication.

194. Hibbitts, Bernard J., "Yesterday Once More: Skeptics, Scribes and the Demise of Law Reviews," *Akron Law Review* 30 (1996): 267–319.

Hibbitts responds to his critics, pointing out that many of their criticisms were leveled at proponents of commercial printing by late medieval scribes and scholars. He divides their objections into five rhetorical categories borrowed from Princeton social scientist Albert Hirschman and rebuts each at great length.

195. Hoover, James L., "Legal Scholarship and the Electronic Revolution," *Law Library Journal* 83 (1991): 643–51.

Hoover discusses the impact on legal scholarship of increased reliance on IT. He predicts a future in which scholarship is affected by unlimited electronic access to all legal and nonlegal information, access to the literature of other disciplines, new ways of examining legal information, and even AI.

196. Katsh, Ethan, "Law Reviews and the Migration to Cyberspace," *Akron Law Review* 29 (1996): 115–21.

Using the *Akron Law Review's* inaugural publication on the Web as a reference point, Katsh addresses the cultural forces at work in print and digital media. He argues that electronic technologies will not only provide new opportunities for working with information, but also contribute to changes in how the academic community thinks about and uses information.

197. Maggs, Gregory E., "Self-Publication on the Internet and the Future of Law Reviews," *Akron Law Review* 29 (1996): 237–42.

Responding to Hibbitts (see entry no. 193), Maggs explains why law reviews might continue to exist even after self-publication on the Web becomes the norm. Even after law reviews cease publication, students could continue to edit articles, evaluate manuscripts, organize symposia, and help peers write notes and case comments. He also argues that developments on the Web will make the law review experience even more valuable.

198. Martin, Peter, "How New Information Technologies Will Change the Way Law Professors Do and Distribute Scholarship," *Law Library Journal* 83 (1991): 633–41.

Martin explores the effect of IT on the work of four types of legal scholars: lawyer, humanist, social scientist, and internationalist. Suggesting that increased reliance on electronic media in legal scholarship will profoundly affect the institutional structures of law schools, he questions whether traditional academic law libraries will be needed in the future.

199. Paliwala, Abdul, "From Academic Tombstones to Living Bazaars: The Changing Shape of Law Reviews," *Journal of Information, Law and Technology* 1996, no. 1, at <http://elj.warwick.ac.uk/jilt/issue1/1abdul/default.htm>.

Paliwala reviews the development of electronic law journals, discussing advantages such as the speed of publication, lower costs, currency of information, and the ability to use hypertext and multimedia. He argues that academic legal culture must change to make writing and reading electronic journals acceptable activities.

200. Pearson, Shawn G., "Hype or Hypertext? A Plan for the Law Review to Move into the Twenty-First Century," *Utah Law Review* 1997, no. 3: 765–805.

In this student comment, Pearson argues that law reviews should disseminate their articles through the World Wide Web. He discusses the electronic self-publication movement and the unique aspects of law reviews that can promote or impede electronic publication—or do both—and makes specific recommendations for law reviews considering electronic publication.

201. Perritt, Henry H., Jr., "Reassessing Professor Hibbitts's Requiem for Law Reviews," *Akron Law Review* 30 (1996): 255–58.

Perritt criticizes Hibbitts's proposal (see entry no. 193) that law professors self-publish on the Web. He argues that electronic self-publication will reduce the average quality of legal scholarship and exacerbate the poor quality of student-edited law reviews.

202. Rier, David A., "The Future of Legal Scholarship and Scholarly Communication: Publication in the Age of Cyberspace," *Akron Law Review* 30 (1996): 183–213.  
After reviewing Hibbitts's argument (see entry no. 193) that electronic self-publication will supplant printed law reviews, Rier explores selected characteristics of the audience for and functions of legal scholarship. He then explains why self-publication is ill-suited to legal scholarship, offering counterproposals for improving legal scholarship and its distribution in light of new technologies.
203. Zariski, Archie, "'Knowledge Networks' or Discourse Communities?" *First Monday: Peer Reviewed Journal on the Internet* 2, no. 8 (1997), at [www.firstmonday.dk/issues/issue2\\_8/zariski/](http://www.firstmonday.dk/issues/issue2_8/zariski/).  
Zariski responds to Hibbitts's suggestion (see entry no. 192) that "knowledge networks" are more efficient and effective modes of scholarly communication than electronic law journals. He argues that electronic self-publication promotes the collection and distribution of data rather than knowledge. The survival of scholarly discourse on the Web, he maintains, requires electronic law journals, not search engines.
204. Zariski, Archie, "Never Ending, Still Beginning: A Defense of Electronic Law Journals from the Perspective of the E-Law Experience," *First Monday: Peer Reviewed Journal on the Internet* 2, no. 6 (1997), at [www.firstmonday.dk/issues/issue2\\_6/zariski/](http://www.firstmonday.dk/issues/issue2_6/zariski/).  
Zariski considers the future of electronic law journals, using *E-Law: Murdoch University Electronic Journal of Law* as an example. He takes issue with Hibbitts's call for electronic self-publication (see entry no. 193), arguing that self-publication is a poor substitute for the peer review and active distribution provided by electronic journals. An appendix provides the history of the *E-Law Journal*.

### *The Future of Technology in Legal Education*

205. Colbran, Stephen, "Multimedia Applications and the Law: Perspective and Future Applications in Law Schools," *Journal of Law and Information Science* 6 (1995): 164–73.  
Colbran predicts the demise of the traditional law school as the Internet and multimedia computer programs redefine legal education. He discusses the advantages and disadvantages of DE, concluding that virtual law schools will eventually replace traditional law schools.
206. Harbaugh, Joseph D., "Legal Education in 2010," *Florida Bar Journal* 71 (May 1997): 57–63.  
Harbaugh presents a vision of a future high-technology law school classroom. He explains how many of these technologies already have been implemented at Nova Southeastern University Shepard Broad Law Center and predicts that DE, offered via compressed video and real-time computer transmissions, will supplement traditional legal education.

207. Hoover, James L., "A Vision of Law Schools of the Future," *Journal of Law School Computing* 1, no. 1 (1999), at [www.cali.org/jlsc/hoover.html](http://www.cali.org/jlsc/hoover.html).  
Hoover addresses the opportunities and challenges that technology will offer legal education in areas such as legal research, scholarship, faculty appointments, administration, and law libraries. He emphasizes that technology will fail unless law schools articulate their goals and relate the use of technology to those goals.
208. Johnson, Stephen M., "WWW.Lawschool.Edu: Legal Education in the Digital Age," *Wisconsin Law Review* 85 (2000): 85–126.  
Johnson examines historical and modern uses of technology to improve or replace conventional law school teaching methods. He predicts that law schools will use new technologies when they enhance the learning experience, but that legal education will not be dramatically restructured in the near future as long as skills and values instruction remains central to the mission of law schools.
209. Kelso, Charles D., and J. Clark Kelso, "How Computers Will Invade Law School Classrooms," *Journal of Legal Education* 35 (1985): 507–13.  
In this early essay, the authors discuss the use of computers as aids for lectures and Socratic dialogues, focusing on class preparation by students and faculty and computer use in the classroom. From their 1985 perspective, they also explore the potential effects of computers on exam writing, law review publication, legal clinics and other nonclassroom situations.
210. Mayer, John, "Alternate Futures: The Future of Legal Education," *Journal of Law School Computing* 1, no. 1 (1999), at [www.cali.org/jlsc/mayer.html](http://www.cali.org/jlsc/mayer.html).  
Mayer presents four alternate visions of the future of legal education, concluding that actions taken today will determine which vision becomes reality. He predicts that law schools might: (1) consolidate into a monolithic law school to deliver global online legal education; (2) form mini-consortia to strengthen specialties for distance delivery of legal education; (3) expand their marketplace online to a broader class of consumer; or (4) operate virtually under the direction of large corporate entities, including legal publishers.
211. Paliwala, Abdul, "Leila's Working Day: One of the Futures for Legal Education," *The Law Teacher* 34 (2000): 1–16.  
Using the medium of science fiction, Paliwala paints a picture of what life might be like for a typical law student in 2010. The most significant change he predicts is that learning technologies will bring about a pedagogical shift to student-centered learning, in which students can choose from a variety of multimedia resources that promote active, reflective, and situated learning.
212. Wall, David S., "Revenge of the Cyborg Trolls, Part Two: Putting IT into the Law Curriculum," *International Yearbook of Law Computers and Technology* 8 (1994): 65–74. (See entry no. 28.)
213. Widdison, Robin, "Computerising Legal Education: What's in Store?" *Journal of Information, Law and Technology* 1999, no. 3, at <http://elj.warwick.ac.uk/jilt/99-3/widdison.html>.

Widdison explores trends in learning and communication technologies and examines their long-term impact on legal education. He predicts a “learning-on-demand” culture in which law students study online at several law schools while progressing through individualized programs at their own pace, law professors hire themselves out simultaneously to several employers for specific educational tasks, and specialized law schools form partnerships with other law schools in different parts of the world.

214. Widdison, Robin, “Learning Law in the Twenty-First Century,” *International Journal of Law and Information Technology* 8 (2000):166–92. After exploring developments in information resources, communications systems, and interactive tutors, Widdison considers their impact on legal education. He concludes that future development and use of these learning technologies will foster active learning, creativity, self-reliance, and personalized legal education.
215. Widdison, Robin, “Virtual Law School,” *International Yearbook of Law Computers and Technology* 8 (1994): 185–92. Written as a piece of science fiction, this article describes what legal education might look like in the year 2021. The narrative concentrates on the pivotal role that IT will play in law schools of the future, emphasizing the importance of the Internet and courseware in the computerization of legal education.

#### *Miscellaneous*

216. Alldridge, Peter, and Ann Mumford, “Gazing into the Future Through a VDU: Communications, Information Technology, and Law Teaching,” *Journal of Law and Society* 25 (1998): 116–33. After examining the contributions of C&IT to legal education, Alldridge and Mumford consider a range of issues, including conflicting jurisprudential paradigms underlying C&IT, the economics of the C&IT revolution, the power dynamics of technophobia among law professors, and the interaction of computers and gender.
217. Geist, Michael A., “Where Can You Go Today? The Computerization of Legal Education from Workbooks to the Web,” *Harvard Journal of Law and Technology* 11 (1997): 141–83. After tracing the role of computers in legal education, Geist examines recent responses of law schools to new technologies. He explains how the Internet provides users with the capabilities of CALR, CAI, and electronic casebooks, all within a single system. He also describes how legal educators can integrate the Web into their teaching.
218. Paliwala, Abdul, “Creating an Academic Environment: The Development of Technology in Legal Education in the United Kingdom,” *Yearbook of Law Computers and Technology* 5 (1991):136–57. Paliwala analyzes trends in the use of technology in legal education within the context of pedagogy, resources, and coordination, arguing that a proper strategy

for integrating technology requires a clear definition of the purposes and techniques of legal education that encompasses aspects of the realist and critical traditions.

219. Rio, Linda, "Computer-Assisted Legal Instruction," *Legal Studies Forum* 12 (1988): 323–47.

A detailed history of the development and history of CAI is followed by an explanation of its benefits and detriments. Rio also analyzes the integration of computers into legal education and discusses the future of CAI.

220. Saxer, Shelley Ross, "One Professor's Approach to Increasing Technology Use in Legal Education," *Richmond Journal of Law and Technology* 6, no. 4 (1999–2000): 21, at [www.richmond.edu/jolt/v6i4/article4.html](http://www.richmond.edu/jolt/v6i4/article4.html).

The stated goal of this article is to encourage use of project management principles to employ technology in legal education. The greater part of the piece, however, synthesizes existing scholarship on the advantages and disadvantages of using technology in legal education.

221. Warner, Richard, Stephen D. Sowle, and Will Sadler, "Teaching Law with Computers," *Rutgers Computer and Technology Law Journal* 24 (1998): 107–85.

The authors present a practical guide to computerized instruction in legal education, examining myriad ways to integrate technology into the curriculum. After discussing the advantages and disadvantages of various technologies, they conclude that computers provide an effective tool for achieving three basic pedagogical goals: imparting a basic knowledge of black-letter rules, developing an understanding of the rationales underlying the rules, and developing the ability to analyze legal issues independently. An appendix lists all electronic casebooks available at the time the article was written.

### Author Index

Author	Entry Number	Author	Entry Number
Abbey, Robert M. . . . .	12	Boyd, William E. . . . .	14, 32, 117
Aikenhead, Michael . . . . .	30, 59, 75	Buckingham, Donna . . . . .	79, 80
Alldridge, Peter. . . . .	13, 216	Bruce, Thomas R. . . . .	184
Allebach, Elizabeth. . . . .	93	Burris, Russell. . . . .	149, 165
Allen, Layman E. . . . .	60	Calderwood, David . . . . .	101
Allen, Thomas . . . . .	30, 59, 75, 76, 77, 147	Cartwright, Andy . . . . .	118
Andersen, William R. . . . .	78, 100	Cartwright, Martin. . . . .	134, 162, 163
Arcabascio, Catherine. . . . .	116	Cavanagh, Edward D. . . . .	63
Arnold, Douglas . . . . .	94	Christ, Maria Perez . . . . .	110, 152
Ashley, Kevin D. . . . .	31, 44	Clark, Andrew . . . . .	1
BenchCapon, T.J.M. . . . .	61, 62	Clark, Robert Charles . . . . .	150, 151
Berring, Robert C. . . . .	173	Colbran, Stephen. . . . .	205
Bintliff, Barbara . . . . .	148	Collins, Hugh . . . . .	81

Cooke, Tony . . . . .	69, 74	Huxley, Phil . . . . .	127
Cramton, Roger C. . . . .	15	Johnson, Andrea L. . . . .	18, 104, 128, 129
Dale, John . . . . .	1	Johnson, Stephen M. . . . .	208
Daly, Gail M. . . . .	174	Jones, Peter. . . . .	83
Danner, Richard A. . . . .	16, 175, 176, 185	Jones, Richard . . . . .	19, 38, 84, 155, 156
Degnan, Daniel A. . . . .	64	Katsh, Ethan . . . . .	177, 196
Delgado, Richard . . . . .	186	Kaufmann, Iris . . . . .	126
Denemark, Howard . . . . .	187, 188	Kauffman, S. Blair . . . . .	178
Deturbide, Michael . . . . .	111	Kelman, Alistair . . . . .	130
Donahoe, Diana R. . . . .	153, 170	Kelso, Charles D. . . . .	209
Downie, Jocelyn . . . . .	111	Kelso, J. Clark . . . . .	209
Drobak, John . . . . .	65	Killingley, Julian. . . . .	71
Egri, Peter. . . . .	33	Korn, Gary Clifford. . . . .	157
Ehrenberg, Suzanne. . . . .	112, 154	Lambris, Michael . . . . .	72
English, Julie . . . . .	119	Lauritsen, Marc. . . . .	93
Fairhurst, John . . . . .	120, 121	Leith, Philip . . . . .	84
Farmer, Larry . . . . .	93	Leng, P.H. . . . .	61, 62
Fraser, Laura. . . . .	111	Leskovac, Helen . . . . .	131
Friedman, Peter B. . . . .	2	Leslie, Douglas . . . . .	105
Geist, Michael A. . . . .	217	Lien, Molly Warner. . . . .	158
Goldring, John . . . . .	122, 123	Lodder, Arno R. . . . .	39
Grant, Bruce . . . . .	189	Mackaay, Ejan . . . . .	20
Grantham, David. . . . .	45, 46	MacLachlan, Lawrence Duncan . . . . .	21
Greenleaf, Graham . . . . .	17	Maggs, Gregory E. . . . .	197
Guneratne, Camena. . . . .	124	Maggs, Peter B. . . . .	85, 159
Haar, Charles M. . . . .	64	Maharg, Paul. . . . .	40, 86, 160
Harbaugh, Joseph D. . . . .	206	Martin, Peter . . . . .	15, 22, 47, 132, 179, 198
Hardy, Trotter. . . . .	3, 4, 34, 35, 102, 190, 191	Masters, Elmer R. . . . .	23
Hazen, Margaret . . . . .	66	Matasar, Richard A. . . . .	48
Hazen, Thomas Lee . . . . .	66	Maume, David J. . . . .	161
Hegarty, Caitriona. . . . .	36	Mayer, John . . . . .	210
Heise, Michael . . . . .	125	Migdal, Stephen. . . . .	133, 134, 162, 163
Henn, Harry G. . . . .	82	Molina, Pablo G. . . . .	24
Herberger, Maximilian . . . . .	126	Moodie, Peter . . . . .	49
Hibbitts, Bernard J. . . . .	192, 193, 194	Morgan, Thomas D. . . . .	85, 159
Hibbs, Mary . . . . .	67	Mumford, Ann . . . . .	13, 216
Hoelscher, Karen J. . . . .	68	Munroe, Robert J. . . . .	73
Hollander, Patricia A. . . . .	70	Nagel, Stuart S. . . . .	87, 95
Hogan, Kevin . . . . .	69, 74	Noah, Dennis . . . . .	73
Hoover, James L. . . . .	195, 207	Oberem, Graham . . . . .	72
Hunter, Dan . . . . .	37, 103	Oliphant, Robert E. . . . .	135

Ozcan . . . . .	106, 136	Simonds, Robin P. . . . .	27
Palacios, Victoria J. . . . .	88	Simpson, Moira J. . . . .	140
Paliwala, Abdul . . . . .	1, 5, 25, 50, 84, . . . . . 96, 164, 199, 211, 218	Slomanson, William R. . . . .	107
Park, Roger. . . . .	165	Snell, Rick . . . . .	83
Pearson, Shawn G. . . . .	200	Snyder, Fritz . . . . .	82
Perritt, Henry H., Jr. . . . .	137, 201	Sowle, Stephen D. . . . .	7, 221
Pettit, Sue . . . . .	180	Span, Georges. . . . .	41
Platt, Robert C. . . . .	82	Sprowl, James A. . . . .	97, 98
Poulin, Daniel. . . . .	20	Stalcup, Katherine Austin . . . . .	115, 168
Price, M. Kathleen . . . . .	181	Staniford, G. . . . .	62
Pritchard, Francois . . . . .	10, 146	Staudt, Ronald . . . . .	42, 54, 55, 97, 98, . . . . . 108, 161, 172
Quintana, Lincoln B. . . . .	51	Sterling, W. Clinton . . . . .	145
Rier, David A. . . . .	202	Street, Paul . . . . .	118
Reijntjes, Jan. . . . .	138, 139	Taylor, Scott A. . . . .	8, 99, 141, 142
Rio, Linda. . . . .	219	Teich, Paul F. . . . .	167
Robinson, William. . . . .	76, 77, 147	Terrett, Andrew . . . . .	43, 109
Rosenbaum, Judith . . . . .	113	Terry, Nicholas P. . . . .	143
Routen, Tom. . . . .	36	Thomas, David A. . . . .	144
Sadler, Will. . . . .	221	Thomas, Robert H. . . . .	9
Saxer, Shelley Ross. . . . .	220	Torres, Arturo Lopez. . . . .	145
Saxon, Charles S. . . . .	60	Valke, Martin . . . . .	138
Scheuermann, Friedrich . . . . .	126	Vaughan, Keith . . . . .	67
Schulte, Richard . . . . .	11	Verheij, Bart . . . . .	39
Schwartzstein, Linda A. . . . .	26	Wall, David S. . . . .	28, 212
Scott, Collin . . . . .	52	Warner, Richard . . . . .	7, 56, 221
Scully, John. . . . .	155, 156	Widdison, Robin. . . . .	10, 11, 30, 57, 59, . . . . . 75, 146, 213, 214, 215
Shapiro, Stephen J. . . . .	166	Wood, Richard J. . . . .	169, 183
Sharman, Frank. . . . .	69, 74	Young, Max . . . . .	29, 58, 89, 90, 91, 92
Sheppard, Steve . . . . .	171	Zanglein, Jane Elizabeth . . . . .	115, 168
Shiels, Rosemary. . . . .	6, 48, 53	Zariski, Archie . . . . .	203, 204
Silecchia, Lucia Ann . . . . .	114		