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Beyond Training: Law Librarianship's Quest for The Pedagogy of Legal Research Education.

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Beyond Training: Law Librarianship’s Quest for the Pedagogy of Legal Research Education*

Paul Douglas Callister**

After examining an earlier debate about “process” versus “bibliographic” approaches for teaching legal research skills, Mr. Callister explores the creation of a flexible pedagogy that emphasizes frameworks to facilitate the learning process.

The pilot and copilot did exactly what they were trained to do, but the plane crashed anyway because they failed to think. . . .

—Tom Woodall, Engineering Fellow at Raytheon,
commenting on the crash of a passenger jet¹

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¶1 Few problems have been more universally deliberated than the proper role and methods of law librarians in teaching legal research to law students. The debate has been hijacked historically by advocates with semantically entrenched allegiances (e.g., the “process-oriented” approach versus the “bibliographic” approach), and more recently has been obscured by the advent of computer-assisted legal research (CALR). Meanwhile, the debate has failed to focus on the real issue of creating a suitable, yet flexible, pedagogical model for the acquisition of legal research skills. By neglecting to develop a comprehensive pedagogy, our profession provides training but often does not educate law students to think about and solve legal research problems. That distinction—between training and education—has become the decisive factor for survival in an increasingly diverse and complex research environment.

¶2 Etymologically, “train” and “educate” have similar root meanings. However, the distinction I wish to maintain is between “training” whereby one is conditioned to apply, in a specified manner, certain tools and methods to a particular type of problem, and “education” where one is taught to thoughtfully analyze the characteristics and nature of the problem at hand in order to develop the most appropriate technique for solving the problem, given one’s understanding of the strengths and weaknesses of the various tools and resources at hand. For instance, the pilots mentioned in the introductory quote followed procedures they had learned by rote for dealing with a very specific range of problems. However, their failure to think through the problem and consider the appropriate plausible solutions may have led to the loss of their aircraft and the lives of those onboard.

¶3 In the first section of this article I outline the nature and extent of the dissatisfaction with legal research instruction and demonstrate that the problem predates CALR, although exacerbated and obscured by it. In the next section I present the history of the debate, focusing on a heated exchange between advocates of a “process-oriented” approach and proponents of the traditional, “bibliographic” methods. In the third section I present the requisite elements of a satisfactory pedagogical model.

¶4 In discussing a satisfactory pedagogical model, I propose that a complete model requires (1) an identifiable and fully understood objective in teaching legal research (which objective must distinguish between the kinds of research done by attorneys, scholars, and librarians); (2) a theory and understanding of the nature of

legal source materials (which contemplates changes in volume, accessibility, “gestalt,” etc.); (3) a theory of mathematics, or the nature of students and how they learn (with emphasis upon the provision of conceptual models for internalizing research techniques); and (4) a methodology consistent with the previous elements. Besides proposing the elements of the pedagogical model, I explore the subtle issues surrounding each element (including examples of frameworks), concluding that a pedagogical model will be appropriate for a law school only if its design is based on the particular circumstances and needs of that school.

The Nature and Extent of the Problem

¶5 Criticism about the alleged decline in legal research skills of law students comes from both practicing attorneys and formal studies evaluating such skills. Recently, this concern has manifested itself in criticism of law students and recent graduates who rely too heavily on CALR. A partner and member of the hiring committee at a Chicago law firm expressed his frustration: “In my brief decade and a half of practice, I have noticed the development of a disturbing trend in legal research: the primary reliance on CALR to the exclusion of other legal resources.”²

¶6 While current complaints focus on the detrimental effects of CALR, the state and decline of law student research skills have been an unvarying constant of legal education for decades. Even before Westlaw and LexisNexis made “free” passwords (at least from the student’s point of view) and unlimited online access available to virtually all law students,³ complaints about attorney and student research skills as well as legal research instruction were common themes in the literature:

- From 1902: “I have been amazed at the helplessness of law students, and even of lawyers when they go into a library to search for authorities. . . . Law schools should teach their students how to do these things.”⁴
- From 1918: “Lawyers in active practice, even long standing, either admit that they do not know easily how to extract information from their books. . . . Indeed, the [law] schools as such cannot lay claim to the credit of having recognized the need and acting promptly.”⁵
- From 1949: “I speak from an experience of 25 years on the bench, an experience sometimes painful . . . , when I say to you that one of the big mistakes in legal education today is relative neglect of this important subject of legal research in law school.”⁶

2. Bret A. Rappaport, *Lawyer’s Etcetera: Time for the Wooden Shoe: Legal Research in the Computer Age*, 13 CBA REC., Oct. 1999, at 50, 50.

3. Marilyn R. Walter, *Retaking Control over Teaching Research*, 43 J. LEGAL EDUC. 569, 581 (1993).

4. Horace E. Deemer, 1 AM. L. SCH. REV. 404 (1902). Deemer was a justice of the Iowa Supreme Court.

5. Frederick C. Hicks, *The Teaching of Legal Bibliography*, 11 LAW LIBR. J. 1, 2 (1918).

6. *Proceedings of the Forty-First Annual Meeting of the American Association of Law Libraries Held at Pennsylvania Hotel, New York City on June 21 to 24, 1948*, 41 LAW LIBR. J. 161, 170 (1948) (remarks of Hon. Bernard L. Shientag).

- From 1959: “I have been concerned with the teaching of legal bibliography for nearly thirty years. . . . I am certainly not satisfied with what we are doing or with what anybody else is doing.”⁷
- From 1968: “The teaching of legal research is one of those areas that we all talk about—and do least about. . . . Those who do it well . . . readily move on to more ‘worthwhile’ things—such as teaching Torts.”⁸
- From 1977: “Why do recent law school graduates have difficulty using a law library? This question is a never ending source of puzzlement to private law librarians and others who come in contact with new lawyers.”⁹
- From 1981: “There has been a great deal of dissatisfaction with [legal bibliography] courses among both students and faculty. . . . There is also some concern about whether these courses really convey the techniques of research.”¹⁰
- From 1985: “Frequently, lectures, library exercises, readings, and written examinations seem to have little long-term effect on the law student’s ability to perform even simple research. All too commonly, first-year students obtain a clerkship, then discover they forgot or never learned very much in legal research class.”¹¹
- From a 1988–89 survey of legal research skills: “In [my] eighteen years as a law firm librarian, I find legal research skills totally lacking among summer associates”¹²
- From 1989: “Although the literature is replete with ‘new’ methodologies for [legal] research instruction, none of it has demonstrated that even the best taught and most innovative of legal research courses can compare with the excitement and intellectual interest that often can be found in the ‘substantive’ first-year courses.”¹³

¶7 The crowning indictment is found in a 1990 article by Joan S. Howland and Nancy J. Lewis reporting the results of a study conducted in 1987 and 1988 that surveyed law firm librarians from eight metropolitan cities as to their views on the

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7. *The Teaching of Legal Writing and Research—A Panel*, 52 LAW LIBR. J. 350, 367 (1959) (remarks of William R. Roalfe).
 8. Charles D. Kelso, *Curricular Reform for Law School Needs of the Future*, 20 J. LEGAL EDUC. 407, 412 (1968).
 9. Robin K. Mills, *Legal Research Instruction in Law Schools, the State of the Art or, Why Law School Graduates Do Not Know How to Find the Law*, 70 LAW LIBR. J. 343, 343 (1977).
 10. Rhonda Carlson et al., *Innovations in Legal Bibliography Instruction*, 74 LAW LIBR. J. 615, 615 (1981).
 11. Paul Richert, *Oral Competence Testing in Legal Research Techniques*, 77 LAW LIBR. J. 731, 731 (1984–85).
 12. Joan S. Howland & Nancy J. Lewis, *The Effectiveness of Law School Legal Research Training Programs*, 40 J. LEGAL EDUC. 381, 385 (1990) (quoting a librarian participating in a study conducted in 1988–89).
 13. Thomas A. Woxland, *Why Can’t Johnny Research? or It All Started with Christopher Columbus Langdell*, 81 LAW LIBR. J. 451, 458–59 (1989). Woxland complains in his opening sentence, “Many law graduates are incompetent to perform adequately one of the most vital of lawyerly functions—legal research.” *Id.* at 451.

adequacy of the legal research skills of summer and first-year associates.¹⁴ “Sixty-four percent of the summer clerks and forty-eight percent of the first-year associates were judged by the respondents to have less than satisfactory abilities in determining appropriate research sources for a specific subject matter.”¹⁵ They concluded:

There is a growing awareness among law librarians and practicing attorneys that the research skills of law students and recent law school graduates are painfully inadequate and are perhaps becoming increasingly so. The survey confirms the perception that most summer clerks and first-year associates are unable effectively and efficiently to research issues that appear routinely in cases handled by middle-sized and large law firms.¹⁶

The significance of the dates of the study and the complaints noted earlier is that they occurred prior to the implementation of universal access to CALR services for law students, and indeed many of the criticisms were made before the birth of LexisNexis in 1973 and Westlaw in 1975.¹⁷ Thus the decline in legal research skills and dissatisfaction with legal research courses is not just a CALR issue, although the tendency to rely exclusively upon CALR has contributed to the problem.

History of the Debate and Its Aftermath

¶8 This section discusses the furor created by a single article which blamed the inadequacy of legal research skills among attorneys and law students on the research instruction they received in law school, and specifically on its traditional, bibliographic emphasis. The resulting fire was also fueled by the perception that the criticism had come from outside the profession. Well-respected librarians from Berkeley vigorously responded to the perceived attack. Additional criticisms have surfaced since the end of the exchange, and the issues raised have been overshadowed by concern over commercial CALR training at law schools. Finally, the impact of CALR has coincided with a perception that traditional legal tools are inadequate to deal with the magnitude of legal source material.

Round I

The Wren Indictment

¶9 The veritable “shot across the bow” was fired in a *Law Library Journal* article by Christopher G. Wren and Jill Robinson Wren,¹⁸ father and daughter, who had

14. Howland & Lewis, *supra* note 12.

15. *Id.* at 383.

16. *Id.* at 389. Apparently, as of 1997, a follow-up study (although promised) had never been undertaken. Michael J. Lynch, *An Impossible Task But Everybody Has to Do It—Teaching Legal Research in Law Schools*, 89 *LAW LIBR. J.* 415, 428 (1997). I am unaware of any follow-up study.

17. Donald J. Dunn, *Why Legal Research Skills Declined, Or When Two Rights Make a Wrong*, 85 *LAW LIBR. J.* 49, 59 n.44 (1993).

18. Christopher G. Wren & Jill Robinson Wren, *The Teaching of Legal Research*, 80 *LAW LIBR. J.* 7 (1988).

earlier authored the well-received and popular *The Legal Research Manual: A Game Plan for Legal Research*.¹⁹ Neither was a librarian. Christopher Wren was the Assistant Attorney General for the Criminal Appeals Unit of the Wisconsin Department of Justice and a graduate of Harvard Law School. His daughter, Jill Wren, was the legal affairs editor for Adams & Ambrose Publishing in Wisconsin and a graduate of Boston University School of Law. In a 55 page article with 177 footnotes, the Wrens attacked traditional methods of teaching legal research, which they described as “bibliographically oriented,” containing too much unnecessary information about law books without grounding students in the proper context of the legal research process.²⁰ In making their arguments, the Wrens traced the origin of the bibliographic model to Professor Frederick C. Hicks, a law librarian at Columbia and later Yale, whom they credited with winning academic acceptance for legal bibliography as a course.²¹ The Wrens, however, found fault with this approach:

Hicks’s success, however, camouflaged two deeply flawed assumptions underlying his campaign: first, that law students *need* in-depth descriptions or histories of law books to understand how to do legal research and, second, that artificially isolating instruction about what lawyers do with them is a desirable or effective way to show students how to use law books to solve legal problems.²²

In the Wrens’ eyes, while Hicks contributed to the teaching of legal research, some of his ideas were based upon faulty assumptions. For the Wrens, current problems were directly traceable to the seventy-year hold that Hicks’s methods had had on legal research courses.²³

The Wrens’ Model

¶10 The Wrens’ own model for teaching legal research called for the use of “frame-

19. CHRISTOPHER G. WREN & JILL ROBINSON WREN, *THE LEGAL RESEARCH MANUAL: A GAME PLAN FOR LEGAL RESEARCH* (2d ed. 1986) [hereinafter *LEGAL RESEARCH MANUAL*]. That the manual was both popular and well thought of is evidenced by the following review: “If you didn’t get the first edition, buy the second edition. If you have the first edition, the second edition is even better As predicted by LOEM three years ago, many law schools have adopted the book as required reading matter for law students.” Book Review, *The Legal Research Manual: A Game Plan for Legal Research and Analysis*, 28 *LAW OFF. ECON. & MGMT.* 126, 126 (1987).

20. Wren & Wren, *supra* note 18. The Wrens went on to distinguish process-oriented instruction from the traditional approach:

Process-oriented instruction, by presenting information about law books as part of a comprehensive explanation of the research process, not only gives students as much bibliographic information as they need, but inherently emphasizes that law books are simply tools to use in solving legal problems. *Id.* at 9.

21. *Id.* at 26–33. Commenting favorably on Professor Hicks’s contribution, the Wrens wrote: “For the legal academic community, . . . Hicks implicitly offered reassurance that including instruction about legal bibliography would not dilute the intellectual rigor of the rest of the curriculum or undermine the emerging movement to standardize legal training and bring scientific methods to bear on legal education.” *Id.* at 32–33.

22. Wren & Wren, *supra* note 18, at 32.

23. *See id.* at 33.

works,” which in their analysis was the same method used by “substantive” law courses.

The fundamental goal of a substantive law course is to teach students ways of thinking about and solving problems in a given area of the law. . . . To accomplish this objective, professors in substantive courses . . . select a course context for information that will help students develop appropriate ways of thinking about the material presented in the course.

This context consists of a series of *related frameworks for solving problems in the area of law being studied. These frameworks guide students toward categorizing legal principles in order to apply the principles effectively.* By the end of a substantive course, students have learned not only individual principles of law, but how to draw creatively and comprehensively on those principles to solve legal problems.²⁴

In contrast, the Wrens argued that a bibliographically oriented research course “undercuts student comprehension because the course’s content and context fail collectively (in addition to failing individually) to advance the student’s understanding of the research process. In other words, the course content, on its own terms, confuses students because the instruction purports to explain how to do legal research but instead surveys law books.”²⁵ The context and content of substantive courses, on the other hand, “work symbiotically to illuminate the process and to equip students to engage in it.”²⁶

¶11 In the tradition of substantive courses, the Wrens proposed the utilization of three interrelated frameworks to help engage students and “organize legal research as a readily understandable process and get students as quickly as possible from studying about legal research to actually doing it.”²⁷ The three frameworks stressed (i) the relationship between “law-creating”²⁸ institutions and law books, (ii) analysis of the problem before using the library (and presumably, online) materials, and (iii) methods to employ once the “library phase” of research had begun.²⁹

¶12 To illustrate the Wrens’ concept of frameworks, consider the first framework which was designed to bridge the gap between high school civics’ instruction in the three branches of government, the type of law each branch generates, and the corresponding source books for each type of law.³⁰ The relationship between kinds of law (as well as the two fundamental types of their arrangement—

24. *Id.* at 20 (emphasis added).

25. *Id.*

26. *Id.*

27. *Id.* at 33.

28. I have chosen to use the term “law-creating” rather than “lawmaking” to emphasize the function that institutions other than the legislature have in creating law. Generally, “lawmaking” has been associated with the legislative branch of government. *See, e.g.*, BLACK’S LAW DICTIONARY 893 (7th ed. 1999) (referring to “LEGISLATION” under the definition of “lawmaking”).

29. Wren & Wren, *supra* note 18, at 33.

30. *Id.* at 34. The legal framework for the law-creating institutions is nicely set forth in the Wrens’ *Legal Research Manual*. LEGAL RESEARCH MANUAL, *supra* note 19, at 2 fig. A, 4 fig. B. The courts’ unique structure is also illustrated in the *Manual*. *Id.* at 8 fig. D, 9 fig. E, 10 fig. F.

chronological and topical) is illustrated by table 1, a reproduction of the “matrix” provided by the Wrens in their article.³¹ The representations of tables or figures should not be confused with the “framework” itself; they are merely a pedagogical aid in expressing the framework. To understand the whole of the framework requires greater study. For instance, the entirety of the framework for the relationship between law-creating institutions and law books is set forth in the first chapter of the Wrens’ *Legal Research Manual* and includes several figures and tables, not just table 1.³²

Table 1

Legal Authorities and Publication Forms

Kind of Law	Where the Law Is Published	
	Chronological Arrangement	Topical Arrangement
Statutory law	Session laws	Statutory codes
Common law	Case reports	Case digests (summaries of primary authority)
Administrative law	Administrative registers (for rules)	Administrative codes (for rules)

¶13 For the Wrens, frameworks (with their constituent tables, figures, and matrices) represented the means of “mastering access” to what would otherwise be an “undifferentiated mass of law books.”³³ The Wrens expounded the virtues of their frameworks at length:

By providing generic categories for conceptualizing legal authorities, the framework enables students to see patterns in the way the law and law books are organized, *i.e.*, that different authorities are published in similar kinds of arrangements (chronological and topical) and that these arrangements remain constant across different jurisdictions. . . .

. . . [S]tudents can better absorb and retain bibliographic details about primary authorities: the framework enables students to systematically pigeonhole bibliographic information in essentially the same way the frameworks in their substantive law courses make it possible to pigeonhole legal principles.

. . . The framework thus lets students fit new data into a larger picture that remains constant and familiar.³⁴

¶14 The use of frameworks is a reaction to the published criticisms of several legal scholars and instructors:

31. See Wren & Wren, *supra* note 18, at 35 matrix A. More elaborate tables, stressing the institutional sources as well as various reporters, are presented in the *Legal Research Manual*. LEGAL RESEARCH MANUAL, *supra* note 19, at 12 fig. G, 16–19 figs. J–M.

32. LEGAL RESEARCH MANUAL, *supra* note 19, at 1–19.

33. Wren & Wren, *supra* note 18, at 35.

34. *Id.* at 35–36.

- In 1986, Jill Ramsfield from Georgetown University commented: “The bibliographic approach fails to explain the organization of legal resources, which is a complex system intended to both deliver new information quickly and catalog the information in several places. This system can overwhelm entering law students. New legal researchers need strategies to put legal sources into context.”³⁵
- Robert Redmount, with a doctorate in education as well as a law degree, argued in 1972 that “[l]earnability’ requires that subject matter material conform to properties of logic and intellect. This means that form, sequence and organization are important in each of the complexes of material to be observed.”³⁶ Redmount elaborated:

[A law student] needs “learning handles” to aid him in the exercise of his motivational dispositions and logical capacities, and thereby produce a meaningful and effective learning result. He more readily and skillfully perceives relationships, analyzes connections, orders results and transfers elements of learning if he can see or already appreciates substance and importance in the materials he is dealing with. Without these conditions and this experience, learning may not take place or it may prove to be short-lived or decorative.³⁷

¶15 The efforts of the Wrens to develop suitable frameworks is a reaction to such criticisms, as well as an effort to bring legal research courses within the “mainstream” of legal courses.

By eliminating the intrinsic pedagogical anomalies of the bibliographic approach, process-oriented instruction creates the conditions for the legal research course to enter the academic mainstream: the process-oriented frameworks bring a functional, conceptual coherence to legal research as an academic discipline and result in the legal research course, like other law school courses, teaching a lawyering skill.³⁸

Whether bringing legal research courses into the mainstream with “substantive” courses will sufficiently address the unique complexities of legal research as a subject matter is a question for another day. In any event, the Wrens’ reaction to pedagogical criticisms of legal research instruction and their desire to improve teaching methods (through what seems to work in “substantive” courses) is behind their emphasis on frameworks.

35. Jill Ramsfield, Book Review, *SEC. LEGAL WRITING, REASONING & RES. NEWSL.*, Oct. 1986, at 15, *cited in* Wren & Wren, *supra* note 18, at 17 n.32. A thorough reading of the passage suggests that Jill Ramsfield’s statement is probably more accurately applied to the second and third frameworks of the Wrens’ model, which deal with the process of research itself; however, the statement about the need for context and the lack thereof is applicable to all three frameworks.

36. Robert S. Redmount, *A Conceptual View of the Legal Education Process*, 24 *J. LEGAL EDUC.* 129, 140 (1972), *cited in* Wren & Wren, *supra* note 18, at 18 n.34.

37. *Id.* at 140, *cited in* Wren & Wren, *supra* note 18, at 51 n.143.

38. Wren & Wren, *supra* note 18, at 60. The Wrens apparently hold the view that all law courses teach skills, rejecting the distinction between “substantive” and “skills” courses. *See also infra* ¶ 37.

Round II

Countercharge from Traditional Law Librarians

¶16 Not surprisingly, the Wrens' article drew significant attention and an immediate, vehement response. Professors Robert C. Berring (director of Berkeley's law library, a former dean of the School of Information Studies at Berkeley, a graduate of Boalt Hall, Berkeley's law school, a coauthor of a major legal research treatise,³⁹ and founding editor of *Legal Reference Services Quarterly*) and Kathleen Vanden Heuvel (the deputy director of the law library at Berkeley, former managing editor of *Legal Reference Services Quarterly*, and also a graduate of Boalt Hall) responded with their own scholarly analysis.⁴⁰ Although acknowledging the significance of the Wrens' article,⁴¹ Berring and Vanden Heuvel alleged that the Wrens had given short shrift (or a "strawman" argument) to the traditional bibliographic approach and its author, Frederick Hicks,⁴² and refuted the superiority of the Wrens' model as "dangerous and misguided" and as a "variation on the *laissez-faire* approach currently used by most law schools."⁴³

¶17 With respect to the Wrens' characterization of the bibliographic method as developed by Hicks, Berring and Vanden Heuvel describe it as an oversimplification that confused the study of the context of a book and its origins with the bibliographic emphasis on its internal components:

The Wrens characterize the bibliographic method as a mechanical enterprise in which students only learn the internal components of individual books. This is certainly not what Hicks meant when he talked about a bibliographic method of instruction. . . . Hicks is saying that to understand law books you must view them in context, in the information stream of time and place in which they are published.⁴⁴

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39. MORRIS L. COHEN, ROBERT C. BERRING, & KENT C. OLSON, *HOW TO FIND THE LAW* (9th ed. 1989). Berring has also authored a more concise text which originally was an abridgement of *How to Find the Law* but evolved into a distinct textbook. ROBERT C. BERRING & ELIZABETH A. EDINGER, *FINDING THE LAW* (11th ed. 1999).
40. Robert C. Berring & Kathleen Vanden Heuvel, *Legal Research: Should Students Learn It or Wing It?* 81 *LAW LIBR. J.* 431 (1989).
41. *Id.* at 431 ("The Wrens take the problem of legal research instruction seriously. Their article, which contains 177 footnotes in 55 pages of text, presents a detailed examination of the substantial body of literature on the teaching of legal research. . . .").
42. The depiction of bibliographic methods as developed by Hicks offended Berring and Vanden Heuvel. We also take strong exception to the Wrens' characterization of the "bibliographic" method of teaching legal research. They identify the most dismal approach to research training as the norm and then associate the worst elements of this approach with law librarians. Most law librarians will find Wrens' analysis quaint if not downright offensive. Even more egregiously, they interpret the work of Frederick Hicks so perversely that they accomplish metamorphosis turning a brilliant scholar who possessed a grand and complex vision of legal research training into the father of the most incompetent, mundane approach to legal research imaginable. *Id.* at 432.
43. *Id.* at 431-32 ("Their theories, as expressed in their article and book, are dangerous and misguided, and play into the hands of those who think legal training is a minimalist's enterprise best handled in a cheap and easy manner.").
44. *Id.* at 433-34 (citing Hicks, *supra* note 5, at 6).

¶18 After addressing the Wrens' criticisms of Hicks and the bibliographic method, Berring and Vanden Heuvel proceeded to attack the Wrens' "learning by doing" model, comparing it to the legal process courses being taught at the time which inadequately introduced research tools and only provided limited problem-solving skills.

Students learn to do only "A to B" research, in which they solve a research problem using tool "A" to find answer "B." Because they never learn how the tools work together or why certain types of information are found in certain types of research tools, students come to assume that tool "A" can only be used in one particular way, for one particular purpose: to reach point "B." A process-oriented research program gives students tunnel vision.⁴⁵

Elsewhere the Wrens' model was equated with "research on the fly" and, ironically, "treasure hunts," something the Wrens vociferously deplored.⁴⁶ Further emphasizing the insufficiency of the Wrens' methods, Berring and Vanden Heuvel criticized the Wrens' *Legal Research Manual* as a book that was "adopted and used in many programs that employ . . . the 'minimalist's approach' to legal research. . . . A book like the Wrens', which is an excellent outline of legal research can be exploited by law schools that refuse to devote time and resources to the actual study and understanding of research."⁴⁷

¶19 Interestingly, in spite of Berring and Vanden Heuvel's distaste for the Wrens' treatment of Professor Hicks and the bibliographic method, and their distrust of what they characterized as a minimalist and "hands-off" approach to research instruction, they never directly attacked the Wrens' insistence upon frameworks as either unsound or lacking originality.

Proposal of Berring and Vanden Heuvel

¶20 In contrast to the Wrens' emphasis on frameworks, Berring and Vanden Heuvel facilitated the learning process in their advanced legal research course (rather than during the first-year) by posing probing questions to identify the distinctions of bibliographic materials:

Why were looseleaf services created, and how well do they fulfill their purposes? What are the functions of citators, and how does their original purpose affect the way they work today? Why did Frank Shepard choose to cite comprehensively to all cases in his citators, how did the citators evolve, and how do the new Shepard's citators fit into the whole scheme? Do Auto-Cite and Insta-Cite have a different function from Shepard's citators? How can they be used in the research process? To what extent are these tools reliable? Is there anything essentially different about cases reported online and those reported in paper format? How do indexing theories and strategies affect the ways researchers gain access to cases and statutes?⁴⁸

45. *Id.* at 439.

46. *Id.* at 440.

47. *Id.* at 439.

48. *Id.* at 444.

Through this method, Berring and Vanden Heuvel sought to build a historical and conceptual foundation for bibliographic tools.⁴⁹

¶21 By changing the timing of concentrated instruction in legal research (to an advanced course during the second or third year) and drawing attention to the distinctions of various research tools, Berring and Vanden Heuvel presented what they believed was a realistic response to the deficiencies of legal research instruction.

The Wrens' Response

¶22 In characteristically scholarly fashion, the Wrens responded with another lengthy article, although this time only thirty pages in length with 128 footnotes.⁵⁰ Mirroring the complaint of Berring and Vanden Heuvel, the Wrens alleged that their work, including its discussion of Hicks and the bibliographic process methods, had been mischaracterized (even given “short-shrift” treatment).⁵¹

¶23 With respect to Hicks and the bibliographic method, the Wrens made clear that their criticisms concerned the application of Hicks’s methods in modern times. “We’re not sure why Berring and Vanden Heuvel want to entrench legal research training in a 1918 conception that even its originator characterized as an ‘experiment.’”⁵² The Wrens noted that the responsibility for teaching legal research had shifted from the practicing bar (under an apprenticeship model) to law schools. In addition, the wealth (or glut) of legal resources made Hicks’s model outdated.⁵³

Moreover, the explosive increase in the quantity and variety of legal publications that has occurred since 1918 makes a bibliographic orientation to legal research instruction self-defeating today. . . . Today, more than ever, teachers need a standard for critically evaluating course material so they can excise material that might otherwise seem necessary but, in reality, does not advance students toward greater competence in doing legal research. . . .⁵⁴

Legal research, in its modern context, must cover so many sources and kinds of materials that selectivity necessitates the imposition of more rigorous standards for defining course content.⁵⁵

¶24 With respect to Berring and Vanden Heuvel’s criticism of the Wrens’ process-oriented method as leaving students on their own with an “on the fly” approach, they responded: “Many of Berring and Vanden Heuvel’s objections seem to derive from a notion that process-oriented teaching eliminates all instruction about law books in favor of simply having students use them. We did not write that, however, and we do not believe that.”⁵⁶ In addition, claiming that Berring and

49. *See id.*

50. Christopher G. Wren & Jill Robinson Wren, *Reviving Legal Research: A Reply to Berring and Vanden Heuvel*, 82 LAW LIBR. J. 463 (1990).

51. *Id.* at 464.

52. *Id.* at 468.

53. *See id.* at 469–70.

54. *Id.* at 470–71.

55. *See infra* ¶¶ 33, 39–43 for a discussion of how legal materials and research have changed.

56. *Id.* at 472.

Vanden Heuvel misrepresented the Wrens' position with respect to instructor oversight, the Wrens pointed out that they did not advocate the elimination of "all instruction that deals with descriptions of law books,"⁵⁷ but rather a "reorientation away from the Hicks-inspired emphasis on books and toward an approach that emphasizes the process in which researchers use law books."⁵⁸

¶25 Finally, the Wrens criticized the Berring and Vanden Heuvel emphasis on an advanced legal research course taught to upper-class students, arguing that legal research contributed to the "imprinting" of new law students and that a mature comprehension of legal terminology was not necessary to learn legal subjects as demonstrated by other programs and law courses.⁵⁹ The Wrens contended that their proposed three frameworks provided useful assistance. The first helped students understand the institutions that create law. In many law schools, this may be the only opportunity to become acquainted with these concepts.⁶⁰ The Wrens' second framework, which prepared students for visiting the library by emphasizing fact gathering and framing legal issues, helped students see what they missed from reading their case books—that the cases originated in facts.⁶¹ Finally, the third framework, the "library phase," taught students how to read legal authorities, and it counterbalanced the case book approach of the students' substantive courses.⁶² According to the Wrens, teaching an advanced legal research course of the sort advocated by Berring and Vanden Heuvel merely moved what should have been taught in the first year to later years, which by definition was not "advanced," but remedial.⁶³

Conclusion of the Wren Debate and Its Aftermath *End of the Debate*

¶26 Berring and Vanden Heuvel called for the end to the debate in a page-and-a-half rejoinder reaffirming the necessity of the bibliographic method as part of the "picture of the entire 'juridical life' of society."⁶⁴ They also refuted the Wrens' criticism of their advanced legal research course by asserting that the course was a realistic response to the present conditions in law schools which did not permit sufficient time in the first year to fully teach legal research.⁶⁵

Impact on Law Librarians as a Profession

¶27 The debates between the Wrens and Berring and Vanden Heuvel became a Rorschach test for librarians and legal research instructors, who tended to find that

57. *Id.* at 474.

58. *Id.* at 468.

59. *Id.* at 482. For a discussion of other programs, see *id.* at n.80.

60. *Id.* at 483.

61. *Id.* at 483–84.

62. *Id.* at 484. For a discussion of being "case-book bound," see *id.* at n.89.

63. See *id.* at 481, 490.

64. Robert C. Berring & Kathleen Vanden Heuvel, *Legal Research: A Final Response*, 82 LAW LIBR. J. 495, 495 (1990).

65. *Id.*

their own previous views (on either side of the issue) were substantiated. For example, Joyce Janto and Lucinda Harrison-Cox, both librarians at University of Richmond Law School, sided with the Wrens: “We intentionally omit as much bibliographic detail as possible. Because we are teaching law, not library science, students, our students receive only the information necessary for them to use the information correctly.”⁶⁶ Janto and Harrison-Cox then explicitly linked their views with those of the Wrens and indicated their perception of the popularity of their position: “We were pleased to see that this attitude is gaining widespread acceptance. While we do not agree with the Wren approach in entirety, we feel they are moving in the right direction.”⁶⁷

¶28 Others, in stark contrast, viewed the Wrens’ “research process” as convincingly discredited by Berring and Vanden Heuvel, and in particular, by the results of transferring research instruction to combined research and writing classes staffed by writing instructors.⁶⁸ For example, Michael Lynch at John Marshall Law School concludes:

This view has been widely discredited. According to Berring and Vanden Heuvel, self-instruction and instruction using the process-oriented approach both produce “[t]he most dangerous kind of learning, because they constrict the student’s research universe. . . . They learn only the narrowest, and often most ineffective, paths to solving their research because they have no idea what the larger picture of legal research looks like.”⁶⁹

¶29 Lynch directed yet an additional criticism at the Wrens’ work, accusing them of equating the reading of cases with understanding them,⁷⁰ and unwisely placing “fact-related steps” before the general identification of legal issues and background readings.⁷¹

¶30 As a whole, the additional criticisms tended to touch upon the tangents of the earlier debate. The episode remains an inkblot test for those who follow—they see what they are predisposed to see. The fundamental issues have yet to be resolved.

CALR Overshadows the Debate

¶31 In the end, the furor surrounding the debate initiated by the Wrens fizzled, not because the issue had been conclusively decided, but as a result of the impact of commercial CALR (LexisNexis and Westlaw) upon legal research instruction.

The Academic Special Interest Section of the American Association of Law Librarians has set up an Ad Hoc Committee on LEXIS/WESTLAW Policies, chaired by Cam Riley,

66. Joyce Manna Janto & Lucinda D. Harrison-Cox, *Teaching Legal Research: Past and Present*, 84 LAW LIBR. J. 281, 290 (1992).

67. *Id.* at 290 n.65 (citing Wren & Wren, *supra* note 18, at 10).

68. *See* Dunn, *supra* note 17, at 56–58.

69. *Id.* at 57–58 n.40 (citing Berring & Vanden Heuvel, *supra* note 40, at 439).

70. *See* Lynch, *supra* note 16, at 418 n.4.

71. *See id.* at 423 n.11.

Librarian and Associate Professor at West Virginia University College of Law. Riley reports receiving letters from law librarians all over the country who are concerned about the libraries' [sic] becoming the marketplace for LEXIS and WESTLAW, about the conflict between the educational program and the selling of a product, and about the increasing influence and demands of the computer companies in light of the difficulty many schools would have in using their own resources for CALR instruction.⁷²

Of particular concern were the perceived overreliance of law students upon CALR to the exclusion of other legitimate means of research, and the students' failure to consider the cost of online searching in a law practice.⁷³ Concern also was expressed about *who* was providing training to CALR students. Lack of faculty control had led to some undesirable consequences.⁷⁴ "Students are now liberated from the supervision and help of teachers and librarians and from interaction with their fellow students. They go their merry ways at home—floundering around, printing instead of reading, and enjoying the fun of free computer time."⁷⁵

¶32 Indeed, the extent of LexisNexis and Westlaw's influence over the nation's law students was quite staggering:

West Publishing Company, for example, has some involvement in teaching first-year students in about 80 percent of law schools across the country. If pre-summer-job training is included, the figure is closer to 95 percent. . . . Mead Data Central provides 100 percent of the Lexis training at 55 percent of the country's law schools, and 50 to 95 percent of the training at 31 percent of the law schools.⁷⁶

The enormous investment by LexisNexis and Westlaw in legal research training (although beneficial) had not gone unnoticed. The response to it had, however, overshadowed the more fundamental issue of the proper mode of teaching legal research, as raised by the Wrens and subsequent debate.

The Concurrent Shift in the Nature of Legal Research

¶33 Not only had concern been voiced about the influence of LexisNexis and Westlaw, but librarians, including Berring at Berkeley, had been forced to come to grips with the effectiveness of traditional research tools in the face of an accumulation of legal source material that was mind-numbing in its dimensions (an estimated 54,059 cases were published in 2001, with another 385,343 appearing in electronic format).⁷⁷ Furthermore, the superabundance of published cases, when

72. Walter, *supra* note 3, at 581 n.79 (citing a telephone conversation with Cam Riley, Librarian and Associate Professor, West Virginia University College of Law (Feb. 22, 1993)).

73. *See id.* at 580–81 (citing Howland & Lewis, *supra* note 12, at 388).

74. *Id.* at 581.

75. *Id.*

76. *Id.* at 581 n.80 (citing telephone conversations with William Lindberg, Manager, Educational Services, West Academic Program (Feb. 23, 1993) and Marsha Diamond, Legal Education Manager, Mead Data Central (June 7, 1993)).

77. E-mail from Donna Weinberg, Academic Account Manager, West Group, to Paul D. Callister (Sept. 6, 2002) (on file with author). *See also* Robert C. Berring, *Collapse of the Structure of the Legal Research Universe: The Imperative of Digital Information*, 69 WASH. L. REV. 9, 27 (1994); *infra* ¶¶ 39–40.

combined with increased access to legislative and administrative materials, had shifted the traditional emphasis from judicial opinions to the other aforementioned sources of law.⁷⁸ Confrontation with such phenomenal growth when coupled with online information systems like LexisNexis and Westlaw had forced librarians to reconsider the effectiveness of traditional research methods and tools (with related consequences for the teaching of legal research).

The nature of legal research has changed. Under the old system, sloppy research instruction was not fatal. The student could blunder along, safe in the controlled environment. Research was an intricate part of analysis. This explains the grouping of research, writing, and analysis into one course at many law schools. The purely mechanical aspects of research, of finding the right book, were minimal. But this is no longer the case. Now the research environment is rich, and getting richer. . . . What is clear is that intuitive, on-the-fly searching, supported by the familiar law of the digest system and West's world view is impossible. We now need research training that is devoted to research skills, that sees those skills as useful and vital. Finding information, information of all sorts, not just cases will be a vital function of the twenty-first century lawyer.⁷⁹

The pedagogical implications of the exponential growth of legal publications and electronic resources are reviewed later in this article.⁸⁰

Summary of Developments and Aftermath

¶34 Since Berring and Vanden Heuvel concluded their debate with the Wrens, scholars have generally seen vindication on both sides of the issue. More notably, the debate has been overshadowed by growing concern over the impact of commercial CALR systems, and the overdependence of law students and new attorneys on such tools. In addition, the online search capabilities seem to have brought clearly into focus the present magnitude of legal source material, its exponential growth, and the need for more finely tuned research skills. In spite of new issues interjected into the debate, however, the fundamental disagreement between the Wrens and Berring and Vanden Heuvel has not been resolved and the negative perception of law student research skills has not changed. In essence, the fundamental difference of approach (between process and bibliographic methods) remains the same, but the complexity of the problem has increased.

¶35 It is now appropriate to take up the issue again, but this time to keep in mind all of the various aspects of the problem—historical weakness of legal research instruction, commercially subsidized CALR training, the magnitude of current legal sources, and the need for more precisely honed research skills. The question remains: how is legal research best taught?

78. *Id.* at 29.

79. *Id.* at 33.

80. *See infra* ¶¶ 39–43.

Requisite Elements of a Pedagogical Model for Legal Research Instruction

¶36 Any pedagogical theory for teaching legal research must consist of the following elements: (1) identification of the objective of such instruction, (2) a theory and understanding as to the nature of legal sources, (3) a mathetic theory as to the nature of students and the conditions of learning, and (4) a methodology that is consistent with the other three elements. Although the Wrens took positions with respect to each of these elements, it is their thoughts about the third element—mathetics—that are the most valuable. The real contribution of the Wrens is not their advocacy of a pragmatic “process-oriented” approach (as opposed to the traditional bibliographic orientation), but their insistence upon the search for and implementation of frameworks that could facilitate the learning process. In this section, I explore each of these elements, as well as the Wrens’ contributions, opposing views, and possible alternatives. In an effort to adequately address mathetics, I present a possible system of interrelated frameworks.

Objective of Teaching Legal Research

¶37 What is the objective of teaching legal research? This question is not as easy to answer as it might appear. The centerpiece of “substantive” legal education has been teaching law students to “think like a lawyer.”⁸¹ “The fundamental goal of a ‘substantive law course’ is to teach students ways of thinking about and solving problems in a given area of law, whether those problems arise as hypotheticals posed by the professor during the course or as real disputes, involving novel facts, that the students will confront after graduation.”⁸² Like substantive courses,⁸³ legal research courses should teach students to solve problems in ways that will transcend the classroom and graduation into their careers. But what kinds of problems? Obviously the problems are research problems, but will the research be scholarly in nature? Will it be for a paying client? If so, is this different from a scholarly problem? Are the problems that law librarians research different from those of attorneys? There are different kinds of research:

81. Berring & Vanden Heuvel, *supra* note 40, at 13.

82. Wren & Wren, *supra* note 18, at 20.

83. The Wrens disapprove of the distinction between “substantive” and “skills” courses in law school. This debate [whether law school education should orient itself to the profession or to academics] has created and perpetuated seemingly intractable, mutually exclusive, but ultimately irrelevant classifications of law school courses as “substantive” or “skills.” The presumed dichotomy camouflages the reality that all soundly structured law courses, whether labeled as “substantive” or “skills,” are fundamentally alike in their goal of seeking to train students to solve problems like lawyers do, in their process-based subject matter, and in their need for teaching approaches that reflect their process-based subject matter. *Id.* at 25.

For a discussion about the debate between an academic and a profession-oriented approach to legal education, see *id.* at 24.

Scholarly legal research is comprehensive and directed toward general conclusions. A professor or a lawyer writing a scholarly piece, surveys a broad legal topic, or takes a very general view of a more restricted legal question, attempting to find and discuss (or at least mention) all relevant authorities and to reach general conclusions. Although the scholar may begin with desired conclusions, the typical scholar is free to follow the argument where it leads. And the scholar is not overly concerned with how long a project takes; a line of thought may be followed without too much worry as to whether it will serve the purpose of the present project. Scholarly librarians work with similarly general intentions. The typical product of the scholarly librarian is a comprehensive bibliography. . . .

What practicing lawyers do when they conduct research is quite different from this. The research of a lawyer is concerned with the discovery and application of legal authority relevant to the precise question presented by a client. Usually the research is directed at problems presented by events that have already happened, though sometimes, usually in business-planning contexts, the research is directed more broadly toward the consequences of several possible courses of action. Even this more general search is almost always more narrowly focused than the scholar's broad-based approach.⁸⁴

¶38 There are some distinct differences between the research of practicing lawyers and scholars—focus versus comprehensive breadth, loyalty to a particular side of an issue versus freedom to look for the best position, and limitations of time and economics. An additional difference, particularly between lawyers and librarians, is the relationship of the research to the analysis in their respective tasks.

[T]he research experience of law librarians often predisposes them to a limited view of research that emphasizes the comprehensive search for all relevant sources over the struggle to understand authorities that are found in the context of a restricted problem controlled by the client's interests. . . .

One pleasant part of the law librarian's job is that interesting problems are presented, some material is located, and then, while the lawyer or law student settles down to the struggle for understanding, the librarian goes on to the next patron. Thus all problems may look, to the librarian, like information problems [like the statute of limitations for alimony or the order of intestate succession (which are contrasted with "understanding problems")].⁸⁵

Thus, law librarians may need to stretch (or reflect on earlier days when they practiced law) to fully understand the package of skills needed by their students. Furthermore, the law firm librarians' low opinion of the research skills of summer clerks and first-year associates expressed in the Howland and Lewis survey may have occurred because the librarians did not use the correct set of criteria to assess the skills. On the other hand, it can be argued that the librarians surveyed in the

84. Lynch, *supra* note 16, at 419. Not only is the final objective of lawyers and librarians different, but the nature of legal research differs significantly from traditional scholarship (which, arguably, much of academic library science is designed to serve):

The essence of scholarship in the modern sense is not learning but criticism. And the critical scholar who has fulfilled all of the requirements of patient collection of material, of scientific investigation, of skeptical detachment, of philosophic synthesis is a rare person, so rare indeed that we are not likely to meet many of them in law or anything else. Max Radin, *On Legal Scholarship*, 46 YALE L.J. 1124, 1141 (1937).

85. Lynch, *supra* note 16, at 421.

Howland and Lewis study all work for attorneys, who are not generally looking for comprehensive research. In any event, the contrast between the tasks of law professors, librarians, practicing attorneys, and even different kinds of attorneys is important to understanding the objective of teaching legal research.

Nature of Legal Sources

¶39 If there was ever an area where the scholarship of legal bibliography is helpful, it is that of legal source material. While the Wrens make the distinction between the sources of legal authority (i.e., the judicial, legislative, and administrative branches of government) and the books themselves,⁸⁶ it is Berring who makes the more important pedagogical contribution by identifying and describing the emerging impact of the scale of accumulated legal source material.

It is estimated by West that 60,000 cases entered into its printed reporter system last year [1993]. Perhaps another 40,000 appeared exclusively in an electronic format. There is no printed organizing system (at least none with the complexity of the National Reporter System and the American Digest System) that can handle that much input without becoming unmanageable. . . . The American Digest System was designed in an era when less than a thousand cases a year were published. . . . But even if the printed volumes could accommodate the system, the volume of published cases is breaking down the intellectual structure of the system, weakening what we have called the gestalt of legal thought. . . . Where the research enterprise once consisted of finding a relevant precedent or two and exploring the universe of cases around them, now each side in any dispute can find bunches of relevant cases. . . . Whatever linear nature precedent could once claim is now gone.⁸⁷

The deluge of published cases, when combined with new legal research tools such as CALR, directly impacts research techniques and raises the threshold level of skill required for their mastery. “Given the plethora of choices now available to research, how can one know what to do? What is clear is that intuitive, on-the-fly searching, supported by the familiar law of the digest system and West’s world view is impossible.”⁸⁸

¶40 Added to the growing loss of faith in traditional research methods and tools in the face of the explosion of legal source material is an assault on the historical classification and organization of the law by West’s editors (who had played the greatest role in creating access points to American legal bibliography).

It is well documented that subject headings promulgated by Library of Congress are riddled with inadequacies, which some contend reflect conservative, white, male-centered

86. Wren & Wren, *supra* note 18, at 34. The Wrens also distinguish between “law” and “law books” themselves. Wren & Wren, *supra* note 50, at 478 (“Focusing law students’ attention on the history and economics of law book publishing, as Berring and Vanden Heuvel do, obscures the point that legal research revolves around finding and analyzing *law*—not around evaluating law *books*, as Berring and Vanden Heuvel suggest.”).

87. Berring, *supra* note 77, at 27–28.

88. *Id.* at 33.

values and perspectives. The LC and West systems of classification, however, dominate the structure of legal information. . . . The system is basically closed.⁸⁹

Professor Berring, as an arch-defender of teaching legal bibliography, similarly noted:

In effect, West produced what Daniel Dabney [West's Senior Director for Research and Development] once called "a universe of thinkable thoughts." No judge could determine a point that did not have a location in the West system; it was complete. The conservative aspects of this are obvious. New ideas and theories are classified back into existing categories. New fields like civil rights and feminist jurisprudence are broken apart and dropped into pre-existing categories. West would add new topics, but only when absolutely compelled to do so by major changes, and only after the passage of many years. . . .⁹⁰

¶41 The advent of CALR brought into question the whole concept of a classification system, not just the idea of a single classification system or West's classification system in particular. "Recent work in the power of categorization and classification help reveal that any such scheme is no more natural than its utility."⁹¹ One scholar has advocated encouraging "'concept' searching on online databases so that users can approach the materials from other than conventional perspectives."⁹² The potential impact on legal research (and legal research instruction) of the growing scale of legal source material coupled with relatively new methods of accessing it (i.e., without using traditional indexing and classification schemes) can no longer be ignored.

¶42 The new circumstances, besides making traditional research techniques and tools less effective, have an impact on the ultimate source of law (whether legislative, administrative, or judicial)—the legal mind. In 1987, Berring was even more ominous and intriguingly "subversive" (to both traditional legal doctrines and research techniques) when he wrote:

We are at the point where the ability to search without an imposed structure will nakedly expose the myth of the common law and the beauty of the seamless web to the general legal world. There is no underlying rational structure to law other than what positivists give it. Allowing people to go online in free text liberates them from any requirement to fit their thoughts into a pre-existing structure.

89. Jill Anne Farmer, *A Poststructuralist Analysis of the Legal Research Process*, 85 LAW LIBR. J. 391, 400 (1993).

90. Berring, *supra* note 77, at 21. Further criticizing the singularity of the West classification system, Professor Berring noted problems with the federal system and the diversity of America's various jurisdictions:

Only a rudimentary knowledge of the federal nature of American law is required to recognize how bizarre it is to think that one subject classification system could serve all the states and the federal system as well. One of the most salient facts about the American federal system is the difference between the legal systems of jurisdictions. To apply a uniform subject arrangement to California, Delaware, and New York is marvelously crazy, and it only grew crazier as the jurisdictions grew more complex and law played a larger role. *Id.* at 21–22.

91. *Id.* at 22 (citing SOCIAL SCIENCE CONCEPTS: A SYSTEMATIC ANALYSIS (Giovanni Sartori ed. 1984); David Collier & J. Mahon, *Conceptual Stretching Revisited: Alternative Views of Categories in Comparative Analysis*, 87 AM. POL. SCI. REV. 845 (1993)).

92. Farmer, *supra* note 89, at 403. *But see generally* Michael Duggan & David Isenbergh, *Poststructuralism and the Brave New World of Legal Research*, 86 LAW LIBR. J. 829 (1994) (rebutting Farmer's article).

. . . This could create a crisis in legal thinking. . . . As new generations of lawyers find themselves practicing law without old conceptual constraints, they will take law into more positivist, specialized categories.⁹³

Here the Wrens' distinction between law and law books becomes significant. While legal books may continue to be published, the orderly system of legal thought, and indeed the law itself (be it a naturalist system of rational legal principles or the biased expression of the historical power structure), is breaking down. West's framework for viewing the legal universe is being overrun. Ultimately, it is the source of law that is being affected, and paradoxically, not the books themselves.

¶43 The implications for law students are significant. The neat order presented by the casebook method is illusory, a pedagogical nicety but an oversimplification of the world they will face in practicing law. To prepare for independence and to be weaned from their sterile law school environment of neatly tied case studies, students will need to learn to build their own paradigms. No subject offers a better opportunity to practice making order out of chaos than legal research.

Mathetics: The Nature of Students and the Conditions of Learning

¶44 This section will (1) introduce the mathetic imperative for frameworks, including the Wrens' philosophical grounding in and application of frameworks; (2) reformulate the mathetic imperative to stress student involvement in their construction; (3) present criterion for establishing and evaluating frameworks; (4) present a series of interrelated frameworks that I have selected or developed; and (5) part with some final observations on their proper employment.

The Wrens and the Mathetic Imperative— Frameworks

¶45 The third element of a proper pedagogy for legal research instruction really belongs to mathetics, which is the art or discipline of learning as opposed to teaching. *Mathetics* comes from the ancient Greek, *mathetes* or μαθητής, meaning learner, pupil, or disciple.⁹⁴ It is this aspect of the "pupil" that I wish to stress since the essence of learning is in the nature of students themselves.⁹⁵ Reducing the

93. Robert C. Berring, *Legal Research and Legal Concepts: Where Form Molds Substance*, 75 CAL L. REV. 15, 26–27 (1987). See also *supra* ¶ 33. It is not surprising that in this modern era, legal subjects like sports law, cyber law, feminist jurisprudence, and gay and lesbian studies begin to emerge as acceptable subspecialties.

94. See JAMES STRONG, *Greek Dictionary of the New Testament*, in THE EXHAUSTIVE CONCORDANCE OF THE BIBLE 45 (root no. 3101) (10th prtg. 1936).

95. Similarly, but with slightly different emphasis, modern usage of "mathetics" has accentuated "self-discovery" and "learning-by-doing." See, e.g., SEYMOUR PAPERT, MINDSTORMS: CHILDREN, COMPUTERS, AND POWERFUL IDEAS 120 (1980). I feel, however, that a thorough understanding of the pupil and, more fundamentally, the learning mind, are prerequisites to finding the best methodology for learning facilitation (whether through "learning-by-doing" or some other technique).

problem of mathematics to its most fundamental element, the inquiry becomes one of first-order metaphysics, the nature of the human mind.

¶46 The Aristotelian belief that “the mind is at birth a blank slate [*tabula rasa*] upon which experience writes was the basis for studying the effects of learning on behavior.”⁹⁶ During the Enlightenment, Locke built upon this theory. According to Locke, “[i]f the mind is considered to be a blank tablet upon which experience writes, then the writings can be assumed to be reliable inferences as to the nature of the world insofar as objects in the world have caused them. For Locke, our perceptions of the world come to us pre-organized, and do not require cognitive structuring on the part of the perceiver.”⁹⁷ In a sense, all that a student needed to do in order to learn was to take in experience—an organized stream of data—which would organize the mind for him or her. A teacher, in such a model of learning, simply needed to “pour into” the student—the result being organization of the student’s mind by the order of experience he or she was acquiring. Locke’s views emphasizing experience and perception, although tempered by Rousseau’s romantic naturalism, helped forge subsequent English and American educational doctrine.⁹⁸

¶47 The Wrens’ theories presuppose a starkly different philosophical tradition, expressly drawing upon the philosopher of science, Thomas Kuhn:

All education consists of an effort to simplify masses of knowledge through the use of paradigms. Moreover, as Thomas Kuhn has noted, “something like a paradigm is prerequisite to perception itself. What a man sees depends both upon what he looks at and also upon what his previous visual-conceptual experience has taught him to see. In absence of such training there can only be, in William James’s phrase, ‘a bloomin’ buzzin’ confusion.’”⁹⁹

96. *Motivation, Human*, in 24 THE NEW ENCYCLOPAEDIA BRITANNICA 436, 437 (15th ed. 2002). Indeed, thinking itself is seen to be as a passive exercise. “Thinking is treated by Aristotle as analogous to perceiving. The mind is related to intelligible objects in the same way that sense is related to sensible objects. It is thus impassive and is itself nothing but potentiality (namely, the potentiality of receiving forms), and it has no forms of its own.” G. B. Kerferd, *Aristotle*, in 1 ENCYCLOPEDIA OF PHILOSOPHY 151, 158 (Paul Edwards ed., reprint ed. 1972). Quoting Aristotle directly, “the intellect, prior to thinking, . . . should [be regarded potentially] as [being] in a tablet which has no actual writing.” Aristotle, *On the Soul*, in ARISTOTLE SELECTED WORKS 290 (Hippocrates G. Apostle & Lloyd P. Gerson trans., 2d ed., 1986).

97. *Perception*, in THE INTERNET ENCYCLOPEDIA OF PHILOSOPHY, at <http://www.utm.edu/research/iep/p/percept.htm> (last modified Apr. 27, 2001). This may be an oversimplification of Locke’s position since Locke recognized that the mind operated on “external sensible objects” to create new ideas.

Let us then suppose the mind to be as we say, white paper, void of all characters, without any ideas:—How comes it to be furnished? . . . To this I answer, in one word from EXPERIENCE. . . . Our observation employed either, about external sensible objects, or about the internal operations of our minds perceived and reflected on by ourselves, is that which supplies our understanding with all the *materials* of thinking. These two are the fountains of knowledge, from whence all the ideas we have, or can naturally, do spring. John Locke, *An Essay Concerning Human Understanding*, in 35 GREAT BOOKS OF THE WESTERN WORLD 121 (Robert Maynard Hutchins ed., 1952) (bk. II, ch. i., pt. 2).

In any event, the theory of learning represented by Locke considered perception as occurring in the “raw” without a priori conditioning of the mind.

98. See *Philosophy of Education*, in 25 THE NEW ENCYCLOPAEDIA BRITANNICA 725, 727 (15th ed. 1997).

99. Wren & Wren, *supra* note 18, at 55 n.156 (citing THOMAS KUHN, THE STRUCTURE OF SCIENTIFIC REVOLUTIONS 113 (2d ed. 1970)).

This is a fundamentally different approach which has its origins in Kantian philosophy.¹⁰⁰ The flow of experience will not necessarily organize the mind, as in Aristotle and Locke's model, but instead its perception and understanding are dependent in part upon the mental paradigm constructed from experience. For instance, the Wrens compare the learning process with viewing a pointillist painting where, without a conceptual framework, the beholder sees nothing but random colored dots.

In legal research, each fact and legal authority should, like the dots of color in a pointillist painting, cumulate into a larger, coherent picture. However, for students who lack a systematic way of understanding research as a process for problem-solving, the facts they work with and the authorities they examine fail to resolve into a unified problem-solving response.¹⁰¹

¶48 For the Wrens, the problem with bibliographic teaching is that it, by definition, cannot provide such a structure or paradigm. In essence, a paradigm for perceiving the nature of books is not appropriate for perceiving the nature of the research process. Such a position may assume its own conclusion—although perhaps unlikely, it may be that the nature of books and the research process are one and the same thing. However, the point is a good one—the students' perceptions of the research problems they will encounter require that they build the best paradigm possible for perceiving both the nature of the research problem and its solution.

Some may counter that the bibliographic teaching approach also has an organizational device, but this contention begs the question of the bibliographic device's appropriateness. From a researcher's perspective, the organizing principle for bibliographically oriented research instruction is inappropriate because it centers on familiarity with book characteristics, not familiarity with the research process.¹⁰²

¶49 The Wrens' paradigms are called frameworks. They emphasize their utility in the hope that students will latch onto them to facilitate their own perception of research problems and solutions. An example of a Wren framework, presented earlier in table 1, underscores the relationship of various reporters, their organization (chronological or by subject), and the various sources of law (judicial, legislative, and administrative) by illustrating that each source has at least two reporters, one arranged chronologically and the other by subject. The purpose of such a framework, or at least the representation of it in the form of a table, is to assist students in building their own framework to help them in the perception of the problem of legal research.

100. Kant recognized a need for a priori "categories" to give "unity, organization, and permanence to what we perceive. Without the categories, all that we perceive would be a chaotic confused blob of sensation. The categories are ways the understanding gives form to the matter taken in by the sense." Robert W. Hall, *Immanuel Kant*, in *CLASSICS OF WESTERN PHILOSOPHY* 847 (Steven M. Cahn ed., 2d ed. 1977).

101. Wren & Wren, *supra* note 18, at 48.

102. *Id.* at 55 n.156.

¶50 In supporting the use of frameworks, the Wrens look to substantive law:

For example, a professor of contract law would convey contract principles through several related frameworks that mirror the components of a contract problem, *e.g.*, a framework for organizing and examining legal principles pertaining to the concept of making an offer, a framework for considering principles about accepting an offer, a framework for dealing with principles about breach of contract, and a framework for studying principles about damages flowing from breach. . . . In each instance, the frameworks contribute to the students' understanding of how to approach the subject matter.¹⁰³

However, the problem with the bibliographic approach, according to the Wrens, is that it presents no problem-solving frameworks, its structure instead being organized around the books themselves.¹⁰⁴

¶51 The closest thing to frameworks that Berring and Vanden Heuvel present is their list of questions designed to distinguish among bibliographic resources. True, the Wrens' framework serves the same function as Berring and Vanden Heuvel's questions by helping students distinguish among resources. However, the two techniques are hardly equivalent, and the Wrens' frameworks serve as more than a mnemonic device for capturing the distinguishing characteristics of legal bibliographic tools. To illustrate, as noted earlier the Wrens' framework represented by table 1 relates the fundamental sources of law (legislative, judicial, and executive) to various kinds of law (statutory, common, and administrative) and further demonstrates the two common methods of arrangement (chronological and topical). In doing so the Wrens present the system as a whole—emphasizing multidimensional characteristics—rather than stressing each individual bibliographic tool. In essence, they give the student a sorting shelf, like that used in a mail room, to organize legal research. The sorting shelf relates how the law is made to how it can be organized, topically and chronologically. Furthermore, the Wrens' model builds on what law students already know—the three branches of government.

¶52 This is not to say that legal research instruction can be reduced to a single conceptual device. The Wrens' genius is not in table 1 (indeed, they offer several pedagogical constructs¹⁰⁵) or even in the totality of them, but in the recognition of the need for such aids.

¶53 In contrast, if Berring and Vanden Heuvel's set of questions¹⁰⁶ could be organized into a coherent, systematic whole, their methods would have merit equal or perhaps even superior to those offered by the Wrens. What is missing from Berring and Vanden Heuvel's approach (as presented in the debate) is a systematic mode of analysis worthy of their narrow discipline. If law can strive to be a sci-

103. Wren & Wren, *supra* note 18, at 21.

104. See *id.*

105. See *supra* notes 30, 31.

106. See *supra* ¶ 20 for Berring and Vanden Heuvel's questions.

ence, or proper academic discipline, then education as to the proper use of its principal tools (i.e., electronic resources and print libraries) should likewise strive for systematic methods and analysis.

¶54 The need for systematic organization should not be confused with organization such as found in current textbooks on legal research, as illustrated by their tables of contents. What is imperative is to build a system on what is known—to the students, that is. The Wren model of the kinds of law and methods used to organize them works because it begins with and builds upon knowledge the students gained from high school civics—the branches of government. When presenting strategies for finding the law, the Wrens likewise base their pedagogical models upon what is already known. For instance, for situations when the student knows a statute, regulation, or case, the Wrens offer strategies based on the known statute, regulation, or case in question.¹⁰⁷ In the Wrens' progression of tables in the *Legal Research Manual*, the strategy illustrated in figures T and V¹⁰⁸ ties directly to their initial model (fig. C)¹⁰⁹ based upon the sources of law. Thus, the Wrens continue to build on previous models and what the student already knows. Considering a different kind of research problem—when the source of the law (or legal authority and citation) is unknown—the Wrens' models for various approaches are still based on what is known—descriptive words or facts, general topics, etc.¹¹⁰ But again, the analysis is broken up into lines that distinguish the three branches of government (i.e., legislative, judicial, and executive).

¶55 While the Wrens' approach (with respect to basing analysis on the branches of government) may be new to the discipline of legal research, it is similar to a technique already developed in the library and information sciences with respect to government documents.¹¹¹ This technique categorizes queries, based upon what is known, into five basic kinds of searches: known item, subject, agency, statistical, and special techniques. By firmly basing their pedagogical models on what the student already knows—either as part of the research problem or from prior education—the Wrens assist the student in building a series of inter-related constructs for solving research problems.

¶56 The use of frameworks in general as a pedagogical tool is also not unique to the Wrens. Under different names and terminology (like “constructs” and “constructivism,” “schemata,” “ecological learning,” “cognitive approach,” etc.), this theory has found its way into many other disciplines, including the teaching of law,

107. See LEGAL RESEARCH MANUAL, *supra* note 19, at 54–55 fig. T, 59 fig. V.

108. *Id.*

109. *Id.* at 6 fig. C.

110. See, e.g., *id.* at 52 fig. S.

111. See, e.g., JEAN L. SEARS & MARILYN K. MOODY, USING GOVERNMENT INFORMATION SOURCES: PRINT AND ELECTRONIC 6–9 (2d ed. 1994). The approach taken by Sears and Moody refines models developed by other librarians and information scientists commencing in the 1960s. See *id.* at 9–10 n.2.

although apparently not within the education of legal research itself.¹¹² The relative absence of such articles from the legal research literature suggests an unwillingness to learn from the pedagogical advances and devices of other disciplines, perhaps further evidencing the Wrens' criticism that traditional legal research courses are too bibliographically centered.¹¹³ The pedagogical boundaries of legal research education appear to be narrowly drawn indeed, focusing on the most tangible aspect of the subject—the book itself.

*Reformulation of the Mathetic Imperative—
Building Frameworks*

¶57 In spite of the Wrens' excellent insights, an element is missing from the Wrens' analysis of the methods used by substantive courses—the understanding that it is the student who must build a suitable framework, and the utility of Socratic inquiry to facilitate that process by forcing the student to test the adequacy of his or her framework. A classic illustration of this principle is found in Plato's

112. See, e.g., Brook K. Baker, *Beyond MacCrate: The Role of Context, Experience, Theory, and Reflection in Ecological Learning*, 36 ARIZ. L. REV. 287 (1994); Richard L. Roe, *Valuing Student Speech: The Work of Schools as Conceptual Development*, 79 CAL. L. REV. 1271 (1991); Ronald W. Staudt, *The Future of the Legal Profession: Does the Grandmother Come with It? Teaching and Practicing Law in the 21st Century*, 44 CASE W. RES 499 (1994); Ian Weinstein, *Lawyering in the State of Nature: Instinct and Automaticity in Legal Problem Solving*, 23 VT. L. REV. 1 (1998); Kurt M. Saunders & Linda Levine, *Learning to Think Like a Lawyer*, 29 U.S.F. L. REV. 121 (1994). A former colleague and classmate, Peter Hook, recently introduced “schema” and theories of cognition such as semantic network theory. Peter Hook, *Creating an Online Tutorial and Pathfinder*, 94 LAW LIBR. J. 243, 248–52, 2002 LAW LIBR. J. 18, ¶¶ 18–28, 42.

113. Besides an article by Peter Hook, *supra* note 112, there are three notable exceptions to the lack of literature on legal research instruction with respect to mathetics. All focus on the needs of law students with diverse “learning types.” See Eileen B. Cohen, *Teaching Legal Research to a Diverse Student Body*, 85 LAW LIBR. J. 583 (1993). However, Cohen acknowledges:

Surprisingly, however, few articles in the law library literature discuss improving teaching methods by incorporating an understanding of the different learning styles of students. One article presents several learning styles and provides a broad overview of the application of these modes to teaching in general. No article addresses differences in learning styles of students in the increasingly diverse student population as a method of improving the teaching of legal research. *Id.* at 585 (citing David W. Champagne, *Improving Your Teaching: How Do Students Learn?* 83 LAW LIB. J. 85 (1991)).

The other prominent exceptions are a pair of recent articles by Gerdy that, in addition to discussing learning types, also explore the “learning cycle.” Kristin B. Gerdy, *Making the Connection: Learning Style Theory and the Legal Research Curriculum*, LEGAL REFERENCE SERVICES Q., 2001 no. 3–4, at 71; Kristin B. Gerdy, *Teacher, Coach, Cheerleader, and Judge: Promoting Learning through Learner-Centered Assessment*, 94 LAW LIBR. J. 59, 2002 LAW LIBR. J. 4. See also Robin A. Boyle & Rita Dunn, *Teaching Law Students Through Individual Learning Styles*, 62 ALB. L. REV. 213 (1998) (addressing legal instruction in general); Vernellia R. Randall, *The Meyers-Briggs Type Indicator, First Year Law Students and Performance*, 26 CUMB. L. REV. 63 (1995–1996) (addressing legal instruction in general); Jane Thompson, *Teaching Research to Faculty: Accommodating Cultural and Learning-Style Differences*, 88 LAW LIBR. J. 280 (1996) (discussing law school faculty only); Terry Jean Seligmann, *Beyond “Bingo!” Educating Legal Researchers as Problem Solvers*, 26 WM. MITCHELL L. REV. 179 (2000) (discussing qualities of successful researchers and ways to cultivate those traits). Although articulating differences in learning styles and qualities of successful researchers, none of these articles addresses how legal research skills are actually acquired, or discusses the development of frameworks.

Meno,¹¹⁴ where Socrates, through a process of dialectical examination, goads a slave boy into reexamining his understanding of the world, specifically rudimentary geometry, until the boy deduces from his own paradigm (thus extending it himself) that the square of the hypotenuse of a triangle is equal to the sum of the squares of the adjacent sides (the Pythagorean theorem).¹¹⁵

¶58 Forcing students constantly to reassess their own mental frameworks is a key element to the success of substantive law courses, and a missing element of the Wrens' model (instead they stress the inherent utility of their own frameworks). "[B]y conceptually organizing primary authorities into just a few generic categories, the 'legal system orientation' framework enables students immediately to classify for research purposes a large portion of the law library's collection."¹¹⁶ Thus, the Wrens emphasize utility, specifically by suggesting frameworks to their students. This is not to say that Socrates did not facilitate learning through presenting frameworks—he presents the slave boy with a geometric arrangement of a square divided by several other squares as a pedagogical aid, but for Socrates dialectic examination is a critical element of the process.¹¹⁷ It is what makes the boy understand, by being forced to examine his own framework through which he understands the world.

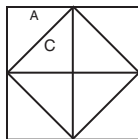
¶59 Some have argued that legal research cannot be taught using the Socratic method employed in "substantive" courses:

An attempt to teach legal research by case method is a travesty of the Langdellian model. [Dean Langdell introduced the case method at Harvard Law School around the turn of the century.] It is not the case method of Socratic analysis of issues and holdings, of the induction of general principles from selected cases. Rather, it is merely the use of a case as a vehicle from which to hang an expostulation of legal research tools: a course in bibliography with an inapposite pedagogical label.¹¹⁸

However, such criticisms confine the use of the Socratic method to case law analysis, without seeing its more fundamental use—to force an examination of one's own view of the world, including the mental frameworks one develops for understanding and solving problems. In this latter sense, the Socratic method is an appropriate and perhaps even necessary tool to facilitate the learning experience of

114. PLATO, *Meno*, in GREAT DIALOGUES OF PLATO 43–49 (IL81B-85C) (W.H.D. Rouse trans., Erich H. Warmington & Philip G. Rouse eds., New American Library ed. 1984) (1956).

115. Socrates employs a geometric construct to assist the slave boy in deducing the Pythagorean Theorem. Socrates' figure is represented:



Id. at 48 diagram 3. In the figure, the square formed by A (which area is represented by two of the small triangles) is one-half of the square formed by C (which is represented by four small triangles forming a larger square that is askew and in the center).

116. Wren & Wren, *supra* note 18, at 48.

117. PLATO, *supra* note 114.

118. Woxland, *supra* note 13, at 458.

law students studying legal research. The real question is how the Socratic method should be adapted for use in the legal research classroom.

Criteria for Frameworks

¶60 The essential criteria for developing or selecting any framework is that (1) it must relate to something that the students already know (i.e., it must extend the mental construct of what students know into the unknown); (2) it must serve as a vehicle for education and not simply training, meaning that the student must be able to effectively adapt the framework to solve a wide range of future research problems and to recognize the utility of new research tools and resources as they are developed; and (3) it must be scalable, such that it can be expressed in a simple form (to facilitate quick understanding), yet be capable of vast expansion and comprehensiveness (to permit students to appropriately manipulate and expand their model when they are ready for more sophisticated analysis).

¶61 A favorite philosophy professor of mine once commenced a course by asking, “What is a good question?”¹¹⁹ His answer was that a good question is always on the edge of what the individual knows—on the edge of the individual’s construct of reality. Relating a framework to what a student knows can be done in a variety of ways. Two of the most common are to have a model that either is familiar in its use (known in the field of human-computer interface as “scripting” or “schemata”)¹²⁰ or permits association of an unfamiliar problem or resource with problems or resources that are familiar and for which the use has already been tried. An example of scripting would be the icons on any MS Windows-based operating system. A “trash can” is used to delete files, a “folder” signifies a directory containing files, a “window” signifies something that can be opened giving view to another directory or application, and the “desktop” suggests items close at hand for easy access. The “Who, What, Where, When, How” framework presented later in table 3 also functions as a scripted framework because its use is already familiar to students as a result of high school English courses. In contrast, an example of an associative framework is a table or three-dimensional model in which items are placed into categories based upon common properties, such as presented later in figures 2 and 3.

¶62 Besides linking the unknown to what is already known, effective conceptual frameworks must be sufficiently flexible for new situations. After graduation, students may encounter research problems unlike anything they experienced in law school. One of my first research assignments as a new attorney was to find statistical evidence of the average age of retirement for OB/GYN physicians in the United States, preferably in the Los Angeles area. Unfortunately, the research methods discussed in law school never addressed finding statistical information. In

119. Author’s recollection of Professor Chauncey C. Riddle’s opening remarks to an honor’s philosophy seminar taught at Brigham Young University in winter 1986.

120. See generally JENNY PREECE, HUMAN-COMPUTER INTERACTION 142–54, 456–63 (1994).

addition to new problem types, students must be prepared to rapidly understand the appropriate uses of new research services and publications, particularly how they fit into the larger scheme of legal research.

¶63 As emphasized by the title of this article, the critical objective for legal research instruction is to help law students become educated researchers. This means that their training must not be limited to simply using a given resource or solving several different kinds of problems. Rather they must be sufficiently adept in adjusting their own mental construct of legal research to meet new research conditions. The student must be able to manipulate his or her framework so that he or she can rapidly classify and understand new kinds of problems and the resources for solving those problems. Even if a new problem seems strange or alien, can the student rapidly compare and contrast it with problems with which he or she already has experience in solving? Can he or she recognize how a new research tool is similar to or distinct from other familiar legal research resources? Like pilots encountering a hitherto unknown threat to their aircraft in flight, will students simply start down a mechanical checklist, or will they think and dissect a problem to understand exactly how it relates to their experience (allowing them, in effect, to write their own new guidelines for solving the problem)?

The Author's Frameworks

¶64 I have been developing my own frameworks—based upon the work of the Wrens and others—to facilitate the acquisition of legal research skills. In discerning the various components of legal research problems, I divide the process into three facets: (1) understanding the problem itself, (2) conceptualizing the sources in relation to the law, and (3) conducting the search itself, which includes matching resources to the kind of problem and then updating the results. Each of these three facets has two aspects as illustrated by table 2. To simplify the learning process, I have tried to select from existing models to develop appropriate frameworks for each of these six aspects. The frameworks are discussed in the next sections of this article.

Table 2

Facets of Legal Research Process

The Problem	The Sources	The Search
Who, what, where, when, how?	Primary/secondary	Matching sources to the problem
The kind of problem	Arrangements of the law	Being thorough

Who, What, Where, When, and How?

¶65 “Who, what, where, when, why, and how?” is a familiar “script” to any student who has ever had a high school English class. The trick is to extend the application

of this paradigm into the unfamiliar realm of legal research. Table 3 illustrates an attempt to do that.

Table 3

Applying Familiar Paradigm to Legal Research

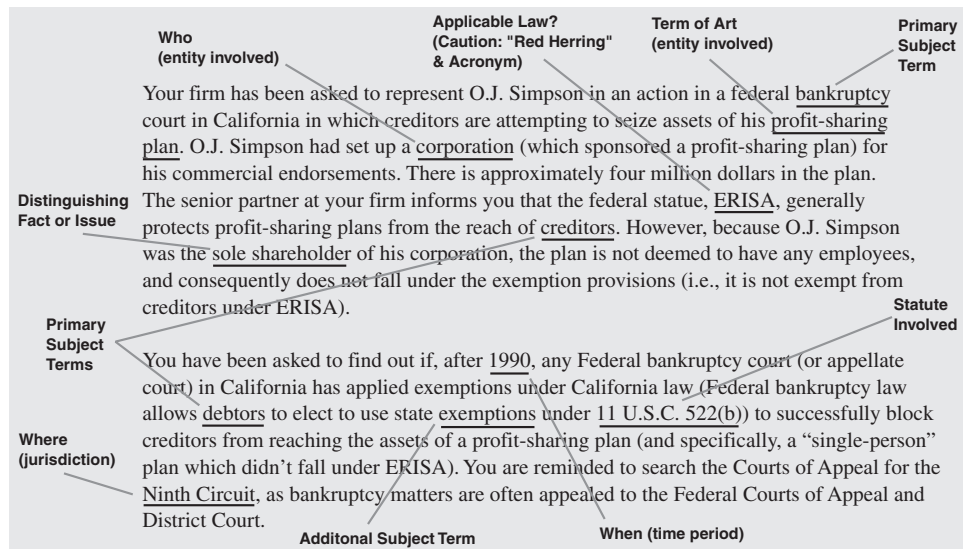
Who	Who are we representing (i.e., which side of the issue are we on—buyer or seller, plaintiff or defendant, etc.)? What legal entities are involved (any trusts, corporations, partnerships, etc.)?
What	What are the most descriptive words of the legal and factual issues involved? Are there any specific topics, subject headings, or terms of art I need to be using in my search? Are there any specific bodies of law that you had in mind? Is there anything you have already covered in your research or which I should ignore?
Where	What are the pertinent legal jurisdictions?
When	What time periods are relevant? When is this project due? When do I need to report with preliminary results? Does this project take precedence over _____?
How	How is this to be done? Are there any specific legal resources that I am expected to use? How should the results of my research be measured in terms of precision or recall (i.e., do you want the quick answer or an exhaustive analysis)? What form should my results take (e.g., memorandum, highlighted copies of documents, bibliography)? How much time should I spend on this? May I use LexisNexis and Westlaw? Are there any limits on billing?

¶66 I have intentionally omitted “why” questions because they generally come later (e.g., “why is this document relevant?”). The emphasis in research is to find out everything that is a “known” in the problem. In the film *Apollo 13*, there is a poignant moment when Ed Harris, playing NASA flight director Gene Kranz, demands that panicking NASA engineers “work the problem” rather than just guess. In teaching law students the skill of how to approach a legal research problem, this same advice applies—first find out everything known from the problem itself and then define what that problem is. Care should be taken not to confuse a table with the framework. In fact, the “Ed Harris” example is as much a part of the framework as table 3.

¶67 To illustrate the skill of “working the problem” (in the context of selecting terms for full-text searching), I often use the hypothetical problem illustrated in figure 1.¹²¹ The “who, what, where, and when” of the problem are identified in this example. I usually have the students work through the problem first, and then I walk them through the identification of terms. To effectively teach the skill of working the problem using the “who, what, where, when, how” framework, the problem should probably be isolated from later steps involving actual searches on LexisNexis or Westlaw.

121. The example first appeared in print in an article on state tax research on the Internet. Paul D. Callister, *A Framework for Conducting State Tax Research on the Internet*, J. MULTISTATE TAX’N, Oct. 2001, at 26, 29.

Figure 1. “Working the Problem” Hypothetical



What Kind of Problem Is It?

¶68 As mentioned earlier,¹²² information scientists and government document librarians have developed a technique for distinguishing among kinds of information problems, thus enabling them to develop appropriate strategies and resources based upon problem type. Table 4 is an “associative” kind of framework.¹²³ It draws attention to relationships among examples of various kinds of information problems. Hopefully, students will realize that a particular problem is like another problem they already know how to solve. Table 4, in essence, builds connective links that help students associate similar problems and solutions from experience. The use of concrete examples illustrating the kind of problems is important because often it is the examples, rather than formal names or descriptions of the classes, that are remembered. The idea is to facilitate association.

Table 4

Framework for Classifying Kinds of Legal Information Problems

Problem Type	Used For	Example
Known Item	(1) You know the citation, case name, or popular name of an act, etc.; (2) you need a case, statute, regulation, or other document applicable to a specific range of issues or	(1) You need <i>Roe v. Wade</i> . (2) You need the California murder case in which the court found that a fetus cannot be a human being and the defendant was acquitted of murder <i>(cont.)</i>

122. See *supra* ¶ 55.

123. I first published this framework in a similar table in an article on state tax law research on the Internet. See Callister, *supra* note 121, at 28. The framework is based on the previous work of Jean L. Sears and Marilyn K. Moody. See SEARS & MOODY, *supra* note 111.

Table 4 (cont.)

Problem Type	Used For	Example
	circumstances; or (3) you are looking for documentation of very specific information, such as tax rates.	after beating up his girlfriend resulting in the loss of the fetus. (3) You need the Hawaiian income tax rates for trusts.
Subject	You are not looking for a specific item but for information on a particular subject.	You are looking for an explanation of the law concerning charitable exemptions to property and sales tax.
Institution or Agency	You know what you are looking for will be found at a particular agency, institution, or organization; or you want to find out what agency administers a particular program or enforces a particular law.	You need Department of Justice rulings and opinion letters on when the merger of two large medical groups falls within the safe harbor provisions for antitrust issues.
Statistical	You need statistical information.	You need the percentage of children living below the poverty level in Los Angeles.
Special Expertise	You are searching for materials that require special interpretive skills or prior knowledge such as concerning the state or federal budget, census information, historical documents and manuscripts, international law, patents, politics and elections, tax forms and procedures, government technical reports, and public records, etc.	(1) You need to file federal and possibly state gift tax returns for a gift made in December of 2000. (2) You need information on aircraft jet engine life cycles and are looking for some official government reports. (3) You need to search patent records to see if your client's new product has been previously patented.
News	You need to find information on current developments or information that may never be formally reported in a legal or tax reporter or service.	You need accounts of the lawsuit in France by Jewish groups against Yahoo for providing access in France to the sale of Nazi paraphernalia.

Primary, Secondary, and Combined Legal Sources

¶69 A fundamental distinction in legal bibliography has always been based upon the difference between primary and secondary sources. Hopefully, most students are familiar with the terminology of “primary” and “secondary” sources from their undergraduate education. The key is to help them to distinguish previous conceptions of “primary” and “secondary” sources from the terms as applied to legal materials. In other disciplines, “primary” sources are ones that are proximate to the data or an observer. For legal bibliography, primary sources have some *binding* legal effect on someone (even if it is only the institution or agency promulgating the rule or regulation). A framework by type of source is illustrated in table 5. Note that although case law digests and *Words and Phrases* are not traditionally thought of as primary sources because of their arrangement by subject, they are included

with other primary materials because they provide direct access to case law, which is a primary source. As noted in table 5, the appropriate use of a source depends upon whether it is primary, secondary, or combined. As with the framework for classifying kinds of legal information problems, the objective is to help students associate new legal resources with sources with which they are already familiar as well as the kinds of problems that they can expect to solve with the new resources.

Table 5*Framework by Type of Source*

Type of Source or Access Tool	General Examples	Binding Upon	Used For
Primary	Constitutions	All branches of government.	Known item and institutional searches where you need binding authority.
	Codes and session laws	Except as found unconstitutional, all branches of government.	
	Court decision reporters, case digests, and <i>Words and Phrases</i>	Binding upon lower courts of the same jurisdiction and other branches of government.	
	Codified regulations or administrative codes and administrative registers	Binding upon agency issuing the regulation until repealed.	
	Administrative agency opinions and rulings	Generally binding upon the agency. Sometimes, may only be binding upon the agency with respect to the parties in question.	
Secondary	Encyclopedias, treatises and hornbooks, law reviews and bar journals, form books	Not binding.	Subject, statistical, and special experience searches where you need to understand the issues and background of an area of law or problem. Also use to confirm your interpretation of a primary source.
Combined	Loose-leaf and newsletter services, <i>American Law Reports</i>	Only primary sources have any binding authority.	Use when ease is important. Such sources combine statutes, regulations, commentary, and case law annotations in a topical arrangement with a good table of contents and indexing system.

Kind of Law and Arrangement

¶70 As discussed earlier¹²⁴ and illustrated in table 1, the Wrens are credited with creating a framework to connect the various kinds of law with a student's basic understanding of high school civics. Table 1 also illustrates that law is always arranged in two ways—topically and chronologically. A notable omission from the table is “constitutional law,” which is usually only found in a single, chronological arrangement.

Matching Sources to the Problem

¶71 By representing legal research in a three-dimensional model, as in figure 2, it becomes possible to synthesize several of the previous frameworks into a single construct for legal research strategy as well as to explore a new variable (the relative strengths of electronic full-text versus print legal sources). The new variable reflects my experience that, as a general rule, known item searches work better in electronic databases with full-text searching of primary legal sources. On the other hand, I have found that subject searches work best in traditional print secondary sources that typically have excellent controlled vocabulary indexing systems.¹²⁵ Figure 2 divides legal research into three-dimensional quadrants—making octants. By attempting to represent the matching of kinds of research problems with legal resources in three-dimensional space, the construct illustrates the distinctiveness of the realms of known item and subject searches. True, there may be exceptions, but the idea is to give students a framework that they can use to solve most problems and that they can later modify into a more complex structure. Items not falling within the shaded cubes are generally not used during the initial phase of a search.

¶72 An attempt at a more comprehensive “octant” model (although still not covering agency, statistical, special expertise, or news problems) is illustrated in figure 3. With increasing detail and comprehensiveness the octant model becomes more difficult to represent in a single form. Indeed, presenting such a complex model may actually inhibit the learning process. Rather than being spoon-fed, students should be encouraged to work out their own models after being introduced to the basic elements of a framework.¹²⁶

Being Thorough

¶73 Being thorough requires that the student not only conduct citation analysis of legal authority (e.g., Shepardizing a case, statute, or regulation) and check for currency (e.g., using List of Sections Affected, etc.) but also find all cases, statutes, regulations, rulings, documents, etc. of a similar kind, based upon a subject clas-

124. See *supra* ¶ 12.

125. See *infra* ¶¶ 75–76 (discussing controlled vocabulary and natural language systems).

126. For a possible model covering other information problem types—agency, statistical, special, and news—see PAUL D. CALLISTER, *Putting It All Together to Find a Relevant Document*, in SOLVING LEGAL RESEARCH PROBLEMS, at <http://www.law.uiuc.edu/callistr/survival/tab5.html> (last visited Oct. 30, 2002).

Figure 2. *The Octants of Legal Research: First-Order Octants*

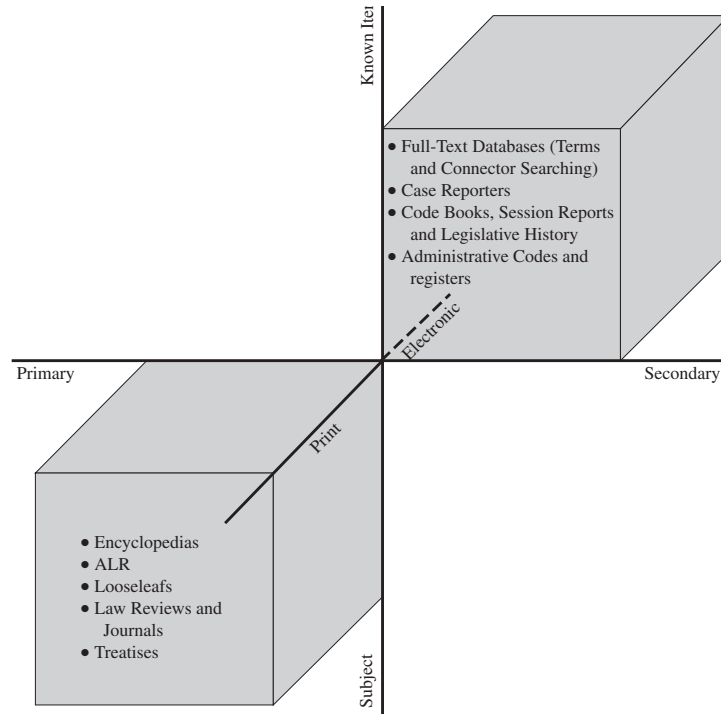
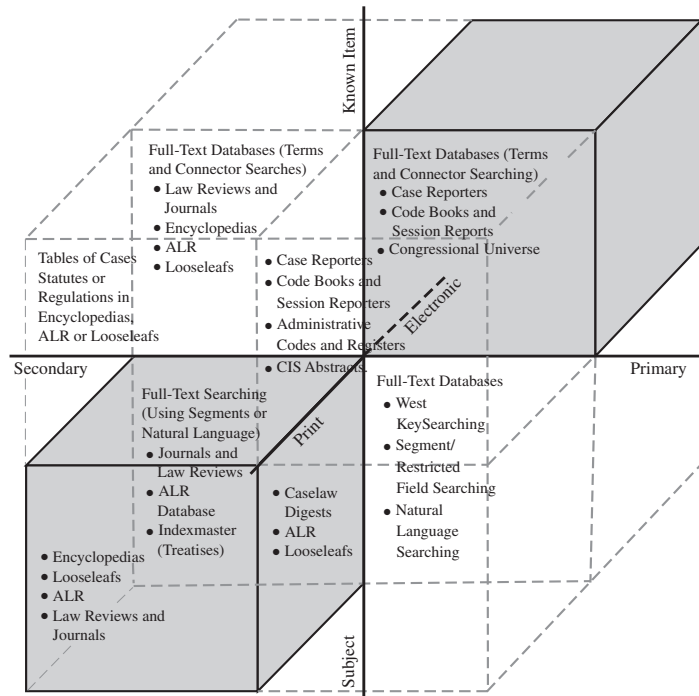


Figure 3. *The Octants of Legal Research: A More Comprehensive Model*



sification system. It is with respect to thoroughness that items in the shaded cubical octants of figures 2 and 3—case digests, West key numbers, LexisNexis “more like” search algorithms, Shepards, KeyCite, etc.—play a principal role (compared to their secondary role in matching resources to problem types as mentioned earlier).

¶74 Consider, for instance, the situation of a law student finding a relevant treatise on a particular legal subject and wanting to know whether there are any more on the same subject. The student wants to find all of the relevant treatises in the library catalog. The solution is simple. Pull the full bibliographic record from the online catalog, examine the subject entries, and pick the most relevant ones to use in further searches. The catalog search itself becomes a schema or script for other types of research tools and resources. The subject catalog technique can be used with anything—case law, journal articles, statutes, etc.—if the student understands the dynamic underlying the process. This is illustrated in table 6.

Table 6

“Subject Catalog” Framework

Relevant Document	System	Search Feature	Classification Method
Case	Case Digest or Westlaw Case Database	West key number	Controlled vocabulary
	LexisNexis Case Database	“More like” search algorithm	Natural language
	ALR	Cross-referencing/digest	Controlled vocabulary
Statute	LexisNexis Statute Database	“More like” search algorithm	Natural language
	West ULA Uniform and Model Acts	Uniform Acts	Controlled vocabulary
Regulation	LexisNexis Regulation Database	“More like” search algorithm	Natural language
Law Review or Journal Article	Info/Legal Trac	Subject headings	Controlled vocabulary
	LexisNexis Law Review Database	“More like” search algorithm	Natural language
Treatise	Online Catalog	Subject heading	LC controlled vocabulary
All Other Secondary Sources	LexisNexis Database	“More like” search algorithm	Natural language

¶75 Besides teaching students to utilize the “subject catalog technique” with a variety of systems, it is important that students also recognize the distinction between natural language and controlled vocabulary systems is noteworthy because

each system tends to have its strengths.¹²⁷ Controlled vocabulary systems involve human indexers (e.g., West editors or cataloging librarians) and tend to work well for traditional subjects with well-established taxonomies when there is a manageable set of entries or items classified under a particular subject term. On the Internet, Yahoo! is an example of a controlled vocabulary system. Yahoo! employs information workers who evaluate proposed links to their site and decide where they fit within the Yahoo! taxonomy. In fact, the name Yahoo! stands for “Yet Another Hierarchical Official Oracle.”¹²⁸

¶76 Notwithstanding their many advantages, controlled vocabulary indexes do not work as well when the subject is new or rapidly evolving and when a particular subject heading has either too few or too many items classified under a particular heading.¹²⁹ Natural language systems use computer algorithms to select important terms as a function of the term’s rarity in relation to the presence of the term in the database or library as a whole. In contrast to Yahoo!, Google is a natural language search system. Search results are usually presented with the best scoring items (i.e., documents with the most prevalent and proximate use of the rarest search terms) displayed first in descending order. Students who understand the distinctions between the two systems can more readily select the most appropriate tool for their research by associating new tools with resources with which they are already familiar.

¶77 Finally, besides finding similar documents, the skills of citation analysis and updating for currency are essential aspects of thoroughness in legal research. An attempt to develop a comprehensive model for thoroughness (including citation analysis and “list of sections affected”) is found at my Web site.¹³⁰

Final Thoughts on Frameworks

¶78 Since the real utility of frameworks only comes when they are incorporated into the student’s construct of reality and then built upon and developed to meet his or her needs and understanding, frameworks should be introduced only in the simplest form possible (such as figure 2). Opportunities to build, apply, test, modify, and expand frameworks should be built into the instructional curriculum. For instance, after introducing the framework represented by figure 2, students may be

127. The respective strengths of controlled vocabulary and natural language systems have been extensively explored in other disciplines, such as information science. See, e.g., Manikya Rao Muddamalle, *Natural Language versus Controlled Vocabulary in Information Retrieval: A Case Study in Soil Mechanics*, 49 J. AM. SOC’Y INFO. SCI. 881, 883 (1998) (comparing controlled vocabulary and natural language indexing in a soil mechanics database); Jian Qin, *Semantic Similarities Between a Keyword Database and a Controlled Vocabulary Database: An Investigation in the Antibiotic Resistance Literature*, 51 J. AM. SOC’Y INFO. SCI. 166 (2000).

128. *Yahoo! Media Relations, FAQ*, at <http://docs.yahoo.com/info/pr/faq.html> (2001).

129. See Callister, *supra* note 121, at 33–34 (discussing the relative strengths of controlled vocabulary and natural language systems in the context of subject searches of state tax research on the Web).

130. PAUL D. CALLISTER, *Being Thorough (Completing the Cycle)*, in SOLVING LEGAL RESEARCH PROBLEMS, at <http://www.law.uiuc.edu/callistr/survival/tab6.html> (last visited Oct. 30, 2002).

required to categorize an array of materials and then summarize the common characteristics of each classification and their appropriate uses. In essence, each student should be encouraged to develop his or her own “figure 3.” Since the framework presented in figure 2 only matches resources in two categories of legal information problems—known item and subject—students should be required to develop their own models for the remaining categories—agency, statistical, special expertise, and news. Students can be stimulated to refine their own models after introduction of some basic frameworks through the Socratic method (as illustrated in the example of Socrates and the slave boy). This type of testing should accompany ample research exercises in which students are asked to apply and then evaluate (in group discussion) the use of their own models.

¶79 As a final reminder, tables and three-dimensional graphics should not be confused with the frameworks themselves but as attempts to represent them by illustrating relationships and associations in two- or three-dimensional space. Other forms of presentation can be used such as demonstrations (e.g., using a library catalog or illustrating the difference between Yahoo! and Google with analogies subsequently drawn to other legal resources and services). Furthermore, incorporation of any framework into one’s mental construct necessitates exercise and evaluation by techniques such as the Socratic method, research problems, and group discussion.

A Consistent Methodology

¶80 The previous three sections have discussed the requisite elements from which a pedagogical methodology for legal research can be built. The key to a successful methodology is that it must be consistent with its objectives and underlying metaphysical assumptions. If it is decided that the purpose of legal research courses at a school like Harvard is to produce legal academics and judges, that Berring’s concerns about the impact of the scale of legal materials are correct, and that students learn best through frameworks, then Harvard’s methodology for teaching legal research is best constructed accordingly. If, on the other hand, a law school in a small U.S. protectorate in the Caribbean decides that it is mainly producing trial attorneys, that such individuals learn best using a specific framework that has been tailored to be compatible with their indigenous culture, and that Berring’s nightmare of classification system failure has not yet affected their tiny legal system (and will not for many years to come), then a different methodology must ensue.

¶81 In essence, each law school needs to tailor the methodology for teaching legal research to its own circumstances. Consequently, this article leaves prospective legal research instructors with the “pedagogically correct” task of constructing their own legal research pedagogy, perhaps with the elements suggested here.

Conclusion

¶82 In closing, the lofty aim of this article is to facilitate dialogue that will elevate legal research *training* to legal research *education*. As implied in the introductory quote, there is a subtle difference between training and education. Education requires thinking, meaning self-initiated effort to build mental constructs or frameworks that allow one to contemplate, understand, and solve a problem. Training is designed to produce a formulated response based upon what some expert has determined is the “best” answer to a forecasted, “typical” problem. Training presents solutions and tools rather than forcing one to examine one’s ability to face a new, yet unexperienced problem.

¶83 The sheer amount of legal material, and its continued exponential growth, suggests that the legal profession is leaving the terrain of “typical problems” which can be easily classified, researched, and digested. Advocacy of the future requires that legal research *educators* think about how attorneys solve problems effectively and what makes a good search or successful research outcome. Furthermore, legal research *educators* must attempt to facilitate efforts of their students to build frameworks that address the problems they will soon face. More than in any other aspect of legal education, legal research instructors can help students exercise the cognitive skill of building frameworks for understanding and solving problems in a chaotic world. Consequently, the duty to perform the task is a sober one, and the need for the profession to take a studied look at pedagogy has become an imperative.