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Bridging the Digital Divide between Law Professor and Law Student

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An article online and in print[2]

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I. Introduction

1. Are you reading this article online or in print? Your answer likely reveals not only your age, but, more importantly, your way of thinking, processing, and utilizing information. If you are a law student, you are probably reading this article on the Web, in the comfort of your apartment while you simultaneously eat, listen to music, and access your e-mail. If you are a law professor, perhaps you pulled a hard copy of the journal from your briefcase and are reading it as you wait for a train, an appointment, or a meeting. Although the text of the article is identical, the readers' experiences will be vastly different. The difference will not be based on physical location - the train or the apartment - but on the chosen medium - "in" print or "on" line. The reader of the printed material will experience a different reading method, thought process, and social interaction with the author and her message than the online reader. The difference in medium results in a digital divide in perception, knowledge, and understanding of the material presented.

2. This digital divide is as profound as the media gap perceived in the 1960 Nixon-Kennedy debates. During those debates, the radio audience considered Nixon the winner while the television audience thought Kennedy had won.[3] In 1960, the paradigm shift was from radio to television. Today, the paradigm shift is from printed text to online information, and the effects are just as significant. Professors who learned in the older paradigm of print need to transform their pedagogy in order to bridge the digital divide just as politicians needed to rise to the challenges posed by the television camera.

3. To fully comprehend the significance of this divide between professor and student posed by the electronic age, the professor accustomed to traditional methods needs to put down the physical printed text, log on to the computer, and experience this article on line[4]. In the same vein, the student accustomed to on-line research should go to the law library, find this journal in the "stacks," and read the hard copy. Try it now because the only way to comprehend the thought process of your professors or students is to experience learning through their preferred medium.

4. As you enter that other medium, keep an open mind. Students should not label their professors "Luddites." In fact, many professors use the Web and are very adept at it. They are simply organizing their method of access and the information they gain from the Web the same way they organize their access to the books themselves. Their access is based on a linear thought process necessitated by the organizational framework of the library itself. In addition, even when they find materials online, their instinct is to "print" and read a hard copy. On the other hand, professors should realize that students do not hate books; they simply do not have a natural or even talismanic attachment to them as the professor might.[5] Information to students is fungible; they try to find data in the easiest and most efficient form possible.[6] They do not attach authority and credibility to information based on the medium through which it is presented as does the professor. They do not consider information from the television screen to be illegitimate,[7] and the computer screen is their most natural and convenient source of information.

5. This article does not advance one medium over the other.[8] The reality is that lawyers, judges, and law professors at the top of their profession are products of the print medium[9] and will require conformity to their way of thinking. On the other hand, they are being superseded by newer lawyers, those being taught today, "who come to the profession as devotees of electronic information."[10] This article, through the juxtaposition of the two different media, exposes the paradigm shift and resulting digital divide. If one article can so easily expose a rift in perception, knowledge, and understanding between professor and student, imagine the gap in the classroom!

6. This article first compares the book world to the online world and then suggests specific changes in traditional law school curricula, pedagogies, and course materials to prepare professors and students for the paradigm shift. Part II of this article explains the professor's way of thinking "by the books" by examining the physical nature of books and libraries and its affect on the print audience; details the historical development of legal publishing in the United States to illustrate the impact of the West Publishing system on twentieth century legal thinking and teaching; and cautions that the topical categories of the West digest are bursting at the seams and will soon be outdated. Part III explains that the new generation of technologically-adept, computer-age students thinks three-dimensionally and learns by active, interactive, and creative discovery; illustrates that legal thinking online is fact-driven as opposed to category-driven; and explains that the electronification of legal information is inevitable, and that these computer-age students are primed for the paradigm shift. Part IV explores non-traditional methods that law schools and professors can use to bridge the divide so that the teaching of the law takes into account this new method of thinking, learning, creating, and arguing that is necessary in the future of the legal world.

II. Thinking "By the Book"

7. If you entered the bar prior to the 1990s,[11] the printed page is your medium of choice. Your home, school, and work are centered around the world of print. The printed page is your main source of information. It is tangible and reliable. It proceeds from beginning to end, page-by-page, chapter to chapter. The book is the legitimate information source and educational resource. The "screen" is the television—the place to go if you are relaxing, not learning. The computer is a word processing tool, a more efficient way to produce print, not a substitute for information-gathering.

8. To gather information, you go to a physical space: the library. You browse the shelves, look at fiction, non-fiction, autobiographies, and more. To search for subject, author, or title, you usually thumb through the card-catalogue, physically touching the cards in order to view your progression.[12] Once you find your card, you note the call number, walk to the shelf, and pull your book from the "stacks." If it is not in that location, it is not "in." Only one person uses a book at a time. If two or more copies are "in," each copy looks identical. A new form of that book means a second edition, published separately, and distributed to various libraries.

9. The printed book is a passive object. You usually sit down to read a book alone; reading is not "active" or "interactive." Someone else, reading the same book, reads the same text you do, in the same order, but he does so separately.

10. The printed book is a physical object. By taking a book off of the shelf, you get a "feel" for the book—its weight, size, and shape. By holding the book, you know its length, its beginning and end, and how long it will take you to get from one end to the other. You can look at the table of contents and glean some of the author's structure. By reading the chapters in turn, you gain context for the next chapter. The pages progress chronologically, linearly, and logically in the order in which the author wishes them to progress.

11. Your mind, therefore, works in a similar linear fashion: start to finish, left to right, top to bottom—all on a flat surface, the printed page. You read different books on the same topic, but you usually read them one at a time, taking each one from the pile at your side. Reading is very different from speaking; it is a one-way conversation with the author giving you a specific message. The information you receive might lead to insight and questions, but you cannot communicate with or respond to the author.

12. To you, legal research naturally is based upon the books. The law library is the center of your universe. In order to find a case, you go to that part of the library that houses your particular jurisdiction, look at the index to the digest, find the relevant portion of the digest, and the cases you need are at your hands, ready to be pulled from the reporters and copied. On to Shepard's to verify the law, and your research is well on its way. It seems so simple, so logical. You glean context from the index, starting with a broad topic and progressing down the line to your narrow issue. If you cannot find law, usually you are simply looking in the wrong category. A trip back to the digest index and you can start your research "from the top." This linear progression and categorical thinking is natural to you.

13. Your legal infrastructure is the law book, found in the law library, organized by categories chosen one hundred years ago by a salesman, John West. In researching a legal issue, you think of physical locations you will visit chronologically: the library, the "stacks," the digest index, the specific digest, the Key Number, the cases. All follow in a linear progression:

Library

Stacks

Index to Digest

Specific Digest

Key Number

Cases

14. When analyzing a legal issue, your thought process follows a similar "line": you start with a general area of law from the digest (i.e., contracts), find the specific rule of law from that area of law (i.e., formation), and then apply the rule of your case to a set of facts or hypothetical, using cases that have also applied the same rule. Your mind, therefore, moves from general to more specific on a linear path. Phrases like "points of law," "lines of decisions," and "drawing parallels"[13] naturally develop from this way of thinking. However, this is not the only way to think of the legal paradigm. In fact, before West Publishing Company, it was not the way lawyers viewed the law, their resources, or research. Your conception of the law was shaped by John B. West, a salesman, who knew how to market information via books. A quick history of the development of legal publications, especially West Publishing Company's influence, can best explain your way of thinking.

15. The Americans adopted the English system of nominative case reporters, which were individually compiled by a member of the bar who gathered notes of court decisions, either as recorded by himself, from other lawyers, or from the notes of the judges.[14] These reporters made no pretense of being comprehensive or systematic, nor was the quality reliable.[15] Instead, it was the individual case reporter who structured and rewrote the text of the report.[16] These compilations were published as illustrations of case precedent.[17]

16. The federal nature of the American system and the need for a distinctive common law led to the growth of early reporters in the early nineteenth century,[18] but these "official" reporters remained close to the nominatives in the idiosyncracy of their makeup.[19] The total sum of American case reports at the middle of the nineteenth century, including the official and nominative volumes, was less than a thousand.[20] As a result, American lawyers in the early nineteenth century did not need an elaborate external organizing system to order their information; they used their memory.[21] The disorganization of the reporters meant that the lawyer had to be able to synthesize the law on his own,[22] develop his own legal schema, and base his arguments on his organization and recall.

17. Industrialization caused an explosion of legal activity during the mid-nineteenth century, creating a market for better legal tools.[23] Some publishers wanted to continue with the English-type of nominative reporters, publishing only selected decisions.[24] West, who was not a lawyer[25] decided there was a market for publishing every decision, a decision that restructured the face of legal publishing and "remade the structure of legal thinking by providing one."[26] His decision led to a dramatic increase in the number of cases, and it became impossible for the lawyer to read all of them, or commit them to memory.[27] West then recognized another demand in the market: the need for an organized system of classification of cases. He developed the American Digest System with its Topics and Key Number System so that every possible legal decision would fit into one of his categories.[28] The Digest classified all areas of law into seven main categories, which were subdivided into four hundred and thirty Key Numbers, which were further broken down into subdivisions.[29] The seven major digest topics are persons, property, contracts, torts, crimes, remedies, and government.[30] These topics closely mirror the current first-year law school curricula,[31] which was developed by Dean Langdell at Harvard Law School in the 1870's.[32] Thus, a legal labyrinth developed, and as law schools adopted the Harvard method and the digest system became universally accepted, these categories became "internalized in American law to the point where they seem[ed] only natural."[33]

18. The West system provided organization for the growing number of cases, accuracy, as the West editors verified the text of decisions with the judge, and a uniform, national system.[34] The premise of the system was to provide a location for lawyers to find a case for every possible legal issue.[35] In researching, lawyers began to think in terms of West categories in order to find relevant law. While the development of these categories was a conscious process for West, as time passed, lawyers forgot that choices had been made and began to see the existing categories as inevitable, creating the gestalt of modern case law.[36] The form in which the law was published became the form in which the law became organized and conceptualized.[37]

19. In addition to a very well-constructed organizational schema, West's acclaimed editorial system normalized the categories. Every editor at West was also a lawyer. The editor read each case and prepared a set of headnotes or abstracts of each point of law found in the decision.[38] The editor then assigned to each point of law a specific topic and Key Number location,[39] fitting each issue into a pre-ordained set of categories. The case was then passed onto one of West's four senior editors, who verified Key Number assignments.[40] The placement of the case into the digest's index had such a tremendous impact on any subsequent manipulation of the data that the senior editors were recently referred to by West as "Edi Knights."[41]

20. The premise of the system was stability so that lawyers could rely on the system. The editorial and organizational system successfully stabilized and normalized the growing amount of information. West reporters were authoritative and reliable; the lawyers and judges trusted these tools.[42] When a lawyer researched an issue, he knew that his opponent was using the same tools, finding the same cases, and organizing his arguments within the paradigm. The stability was comforting.

21. The downside of the premise, however, was the creation of an inflexible system where mistakes could be made or cases lost within the labyrinth. For example, the editor always interpreted the case in a way that fit in with the pre-ordained paradigm.[43] Any changes or shifts in legal theory or judicial process were problematic, and the editors were encouraged to force them into the original system.[44] In addition, disagreement between editors about proper classification apparently were common,[45] and mistakes were always possible because of the human intervention factor. Moreover, the editor's classification of a case determined the use of that case in the legal world; if a lawyer classified the case differently from the editor, that lawyer did not find the case. Thus, the editor's decisions foreclosed the possibility of classifying that subject matter in a different way.[46] As a result, lawyers started thinking like West editors, and professors, perhaps unwittingly, began teaching students to think like West editors.[47]

22. This way of thinking is starting to break down. First, there is simply too much information flooding the system. The digest system was set up at a time when there were fewer than 60,000 cases in the whole system; the overloading of that system with 120,000 new cases a year and two million new statutory provisions[48] "is producing ludicrous results."[49] It is just not possible to fit every case into one of the Key Numbers, and the Key Numbers themselves are ballooning into unusable shape.

23. In addition, recent acquisitions in the publishing field have redefined the arena. West Publishing Company was bought by Thomson group in 1996. Thomson now owns the National Reporter System and Westlaw, in addition to Lawyer's Co-Op, Bancroft-Whitney, Callaghan, and Warren, Gorham & Lamont.[50] The reliability of the editing process is now in question as a new owner oversees the process. Furthermore, smaller publishers are cropping up and more courts are posting dockets on line.[51] While West's was once the major force in legal publishing, "it is no longer the sun around which all other publishers orbit."[52] The line "that leads from the judge, through the National Reporter system to the rest of the world is disappearing."[53]

24. The whole legal paradigm is changing. In the 1920s a lawyer could read every case; the present day and future lawyer does not have that luxury, and the lawyer in 2013 "won't even try."[54] The digest system itself is based on a theory that the law has an "inherent structure, reducible to rational propositions."[55] It presumes that the law as it is written by the legislature and judges can be categorized into a neat, pre-ordained paradigm. "[T]his myth of a 'grand scheme' persists in the way many people approach legal research. Perhaps we cling to the illusion for lack of any other stabilizing force."[56]

25. If you learned the law in this era, you are clinging to the stability of the structure, the line of thinking that is there to follow, the "myth of a grand scheme." You have grown so used to the system in place that it is difficult to even imagine a different one; yet, "parallel systems did flourish, and many were based on entirely different information algorithms."[57] It is natural for you to think by the books because that was the way it was presented and ingrained. To use a familiar phrase: "You are a product of your education and upbringing."

III. Three-Dimensional Linking and Thinking

26. If you are a present-day law student, the "screen" is the center of your universe. Television, video games, and computers are your source of learning, discovery, and communication. They are interactive, exciting, and social. In order to gather information, you never consider consulting a manual; instead, you "log on," "link," and "lurk";[58] clicking is natural. You read text, listen to music, and view graphics at the same time; multitasking is natural. Learning means discovering information; "it becomes as much social as cognitive."[59] It means entering new "places," meeting new people (although not face-to-face), and finding things for yourself; navigation is natural. "Information navigation"[60] is the method for learning, although you refer to it more poetically as "surfing the Web."

27. Your preferred library is not a building; instead, you choose your location by deciding where to put your computer - your home, your office, or you take it with you if you carry a laptop or disk. You do not need to "go" to the library or walk through the "stacks"; instead your computer accesses huge amounts of information without becoming any heavier. You do not worry about interlibrary loans, "checking out," or waiting for a text to be "in"; online information is always "in," never "checked out," and can be accessed by multiple users simultaneously. The information is available in more than one location.[61] If you only know one word in the title, even if it isn't the first word, you can access it. You can even access it by a word in the middle of the text. A card-catalogue seems sophomoric.

28. Your "book" is not something you touch; it may or may not be text. It is information you pull from somewhere in cyberspace. It has no cover, no binding, no weight. The screen is the window for viewing the information. You have no sense of progress as you scroll down the screen. Are you nearing the end of the piece, the beginning, or are you even in another text through use of a hyperlink? Your entrance to your information is usually based on word searches, not subject indices; you understand how many "hits" you have accessed, but have less understanding of context derived from your source's location in a larger work. You seem quite comfortable in this electronic vacuum. Why not? It does not seem arbitrary or confining to you. Instead, it is liberating. You have more than one way to access the information; access is not dependant on your ability to enter the editor's mind. You can access information in a way that is tailored to your needs, not the needs of an author.

29. To you, thinking and learning is active, interactive, and creative. First, there are no passive surfers on the Web, nor is there stability. The computer games you play come out differently each time. You do not simply read a text; rather, you manipulate information by transforming and mixing text, images, and sound. Each document you download, you can divide and reassemble with other documents to create a new one, sometimes without even writing a word or touching the keyboard. You can access that information later and manipulate it again, or you can e-mail it to someone else and have him work on it and send it back in yet another form. The information is forever evolving; it is not frozen in time.[62] Your interaction with the computer changes you as you develop and learn, but you also can manipulate the text on the computer.

30. Second, your thinking process is interactive and social. E-mail, chat rooms, and instant messaging are your main form of exchanging ideas with others. You can talk to a teacher without raising your hand or having other students "hear" your question or even know it is yours. Through the "learning ecology"[63] of the Web, you develop relationships without seeing any faces. You feel comfortable e-mailing an expert in a field in which you are a novice. You ask questions you never would have voiced in public.

31. Third, you live in a creative, visual world. Special effects on television, three-dimensional video games, and the promise of virtual reality open up a world of imagination and creativity. If you are not a creative writer, the computer provides you with many avenues to be creative: graphics, animations, simulations, or programming. If you are a strong writer, the text you read or write seems flat and lifeless without visual accompaniment. When you log on, anything is possible to imagine, create, or visualize.

32. Your natural thought process is three-dimensional, with access points to unlimited possibilities. Your text is not located on a flat page; instead, you move from one text or location in text to another without stopping or bothering to touch all the places in between.[64] No "stacks" or piles are necessary; instead, you reach deeper inside the layers of the computer screen for more information. This phenomenon is based on your ability to live in a world of hypertext.

33. Hypertext provides you "with the ability to create and navigate through a more complex, multi-dimensional space."[65] Instead of thinking about what is on the next page, you are presented with choices about what you want to read or where you want to "go" next,[66] without ever leaving your chair. First, you can "go" anywhere in-text. Through links, you often enter a text in the middle of a sentence as opposed to the beginning of a chapter. With one click, you can enter or exit or move about in a text in any order. Where did you enter this text? In what order are you reading it?[67]

34. Second, you can read many texts without leaving the original text. One click and you are reading someone else's material or moving onto a different topic. You can navigate " 'downward' to more detail or 'across' to tangentially related areas."[68] Your information navigation progresses deeper as you peel back a layer from one text into another and then into another through each subsequent text. The layers are endless. You can leave your original text behind or return to it with much more knowledge than when you left. Your information is fragmented and tangential, yet well-rounded, and based on different authors' viewpoints. Analogous to oral conversations, you can speak to others in a group, with conversation fragmenting in many directions, with many voices, and often with no sense of where the conversation began.[69]

35. The opportunity for moving through a text and branching out of the text in a nonlinear form[70] is your way of learning through navigation. You, not the author, are the driver.[71] You do not always ponder the author's message; you try to piece together your own thoughts. You do not get the feeling that you are missing information or lost in cyberspace; instead, you are discovering the information in a way that suits your desires, needs, and creativity.

36. You feel most natural researching any issue, including law, on the computer. In order to find a case, you log on, click on Westlaw,[72] LEXIS,[73] or a favorite search engine,[74] and formulate a word search. A term such as "comparative negligence" recovers too many "hits," so you use fact-based terms to narrow your case list. Thus, you do not think in terms of categories; instead, word searches and connectors are your links to the law.

37. Your natural research progression is not "linear." Instead, it is based on "random access," where you "can move from one place to another without stopping or touching all the places in between."[75] Instead of your mind moving down the line from a broad digest topic to a more narrow Key Number, you move from word search to word search based on the facts. Your mind is focusing on the bull's eye, trying to narrow a large number of hits to a small circle of relevant law.

38. When developing your search terms, you do not start with a particular area of law or the logic or analysis from conceptually related cases.[76] Your electronic research actually begins from the opposite direction of the traditional subject research by first looking for factually similar cases.[77] This process places its strongest emphasis on facts—legal rules are secondary.[78] "Points of law" and "drawing parallels" are not familiar idioms. Instead, "homing in on the law," "narrowing your focus," and "limiting your hits" are your terms of art. From the factually similar cases you find, you synthesize a rule of law (as opposed to finding a rule of law first). Thus, your mind focuses on facts, then develops a rule, then you apply your facts to the rule. You can create your own set of law based on your particular criteria in your word searches. You can organize and categorize the law in a way that fit your needs, not the existing paradigm of a West editor. You are able to adeptly research the law in this fashion because your mind works like the computer. How does a computer work?

39. The computer database is organized by words.[79] "Almost every word in each case is placed in a massive alphabetized list, and its location in each case is noted; this is called the concordance."[80] When you create a "boolean" search, the computer compares the words in your search to the concordance and recognizes the documents that have the requested word combinations.[81] While you can specify word combinations and ask for words to be in a particular order, each word is searched individually in the concordance.[82] "There is no overriding organization of concepts and rules" because searching for concepts and rules is something that computers are not good at doing.[83] The most effective boolean researcher thinks in terms of simplified, individual words, not concepts and rules.

40. Westlaw and LEXIS tried to create a concept-based system with natural language searching.[84] This system creates a list of thousands of commonly used legal phrases indexed in addition to words. "The computer program 'identifies' the 'concepts,' which are basically nouns or legal phrases, in the search request and matches them against its inventory of words and legal phrases. The program identifies other documents with the same concepts and ranks its findings by statistical relevance—by the number of times the concept occurs and how close to the beginning of the document it first occurs."[85] Although this system comes closer to a concept-based system, it still focuses on the searching of words and phrases.

41. Because you, the electronic thinker, internalize the computer model, the use of specific words and facts is more important in your research than the holding of a case or generalizations about the law.[86] Your raw materials are just that: "raw."[87] Your paradigm is not simply a more flexible structure than the old one—it basically has no structure at all.[88] No problem, you grew up in this electronic vacuum and it allows you to create the structure yourself. If you want to organize in an algorithm similar to looseleafs[89] instead of West categories, you can. If you want to use non-legal sources, they are at your fingertips. If you want to organize based on judges, opposing counsel, or the opposing party,[90] you can. Without a pre-ordained structure, you can think "beyond the box," outside of the West editor's paradigm.

42. Through hyperlinks, you can access cases within cases without touching the reporters or the copier. Those links can take you across the boundaries of primary law from statutes to cases to regulations, yet you have no physical sense of moving about the "stacks." You can create your own looseleaf system by organizing multiple types of law into one accessible location and easily send it to another. Simple cross-references allow you to retrieve and understand specific aspects of that area of law. In addition, "supplements" and "pocket parts" are nonexistent; the information is updated within the system, not separately. As a result, your concept of information is not one of discrete volumes on the shelves arranged in any subject-matter or chronological order; instead, your concept of the law is as bodies of information in which the links contribute to a work where the whole is much more than the sum of its parts.

43. The downside of this system is that the trustworthiness of information on line is at issue. First, there is no West editor to check for accuracy, and few clues are available about authenticity. Each reader is his own "Edi Knight," and some will be less qualified than others. Second, there is no quality control on the Web. While the physical limitations of the library put pressure on librarians to limit their collections, thereby putting a premium on quality, space is not an issue on the Web. Anyone can post anything on the Web.[91] Judgment thus becomes a crucial tool for the electronic researcher, who is forced to read critically as an editor and provide librarian-like quality judgments. Unfortunately, most legal researchers have no librarian training or editorial backgrounds.

44. In addition, the traditional book system guarantees that opposing counsel will be using the same material in the exact same format; the new system creates a future where lawyers might be arguing past each other[92] or, at best, using different versions of similar law. As a result, the stability of legal research is eroding. Because the legal order in the electronic world is less tangible, less fixed, and less structured,[93] the stability and structure of the law will be more versatile and more volatile.[94] In addition, websites come and go; if you refer or link to a website that is no longer available, the information itself may no longer be available.

45. Despite the obvious downfalls of the electronic system, the electronification of legal information is now inevitable.[95] It might not replace books, but it will be the preferred method of retrieval and the prevalent method of legal thinking of the future. The profession is already "being flooded with researchers infected with the new paradigm."[96]

46. If you learned the law in the electronic age, you are primed for this paradigm shift. You see information, not books, as a commodity. Information is fungible, and you will gravitate towards the most convenient method of access.[97] You are acutely aware of your electronic environment;[98] a keyboard, a screen, and a mouse are far more natural to you than a printed index.[99] You think creatively, not categorically. You create your own law based on factual similarities; you are ready to argue different law than your opponent. In searching for information, you can mix and match categories quickly because your search terms are fungible. You can click and navigate without asking for assistance; yet, you are ready, willing, and able to approach experts online whom you have never met to ask for guidance. You will be building "communities of knowledge" as opposed to storehouse files of information.[100] Your legal world will be one of relationships founded upon constant online conversation; you will be more likely to e-mail specialists to seek information than to consult manuals or books on that subject. You will weave your own "web" and your mind will be three-dimensional, expanding into every place you can navigate via your fingertips. To think three-dimensionally, with no structure, is natural for you; you, like your professors, are a product of your upbringing and education.

IV. teachinglaw.com

47. The existence of a digital divide in the professors' teaching methods and the students' learning styles is undeniable.[101] Professors are teaching in the print paradigm. The first-year curriculum is still primarily aligned with West's broad topics: contracts, property, criminal law, torts, and constitutional law.[102] Most of the classes are taught through lecture and the Socratic method. Professors use logical, linear reasoning to teach the law and the starting point for the class is usually an appellate opinion read from a case book where the students deduce a rule of law from the case and then apply this "rule" to different factual hypotheticals.

48. The students, however, no longer reason based on categorical rules or linear reasoning. Instead, their reasoning is based on "bricolage," the ability to find something.[103] They are navigators of information, not categorical labelers of information. Thus, as "bricoleurs," broad legal categories are not intuitively important to them, nor is the linear reasoning used to deduce the rules. Instead, their method of analysis, based on their life on the Web, starts with factual precedent, not legal rules. They learn through active and interactive discovery, not passive reading and lectures. While students read the printed materials to prepare for a traditional law class, they passively listen to lecture hoping they are not called on in class and look to the professors for the correct answer. This classroom atmosphere is not conducive to the active, interactive, and creative learner.

49. How can this digital divide be bridged so that students and professors understand each other and work effectively in the new paradigm? First, professors must begin to understand the ecology of Web thinking. In order to understand it, they must immerse themselves in the environment. Second, law school curricula, classroom pedagogies and techniques, and course materials must be re-examined to incorporate active and interactive learning technology. Third, students must learn legal publishing history and the impact of West Publishing Company over the last one hundred years in order to have a background in the categorical thinking of the past. Their research needs to have a categorical, rule-based component as well as an online fact-based component to make them ambidextrous and most prepared to practice law.

A. Professor Proficiency

50. First, the professors need to learn to use technology and the Web. How can you, as professors educate yourselves? If you are still reading this article in print, you need to experience the Web.[104] By logging on, linking, and lurking within this article, you will discover the three-dimensional thinking of your students. The links to other parts of this text help you to create your own organization and are meant to convince you that you are not confined to this author's structure. Links to sources outside this text help you to begin to think three-dimensionally - "into" and "around" the computer as opposed to down the page. You should get lost in tutorials, absorbed in other journal articles, and detoured into research for your own article. Your first step to computer thinking can begin right now by reading this article online[105].

51. Next, you need to research your own materials, either for class projects or for scholarship, solely online. In addition to Westlaw,[106] and LEXIS,[107] you need to access information from other websites. There are two different ways for retrieving information on the Web. First, you can "pull" information by visiting different sites at your leisure, or by "surfing the Web." To access information, you can locate a relevant topical "index" page and proceed linearly down the topics until you identify your source; some good legal indexes are: FindLaw,[108] Cornell's Legal Information Institute,[109] and WashLaw WEB.[110] You can also use a "search engine," which is the method your students usually use with word searches; to start, try LawCrawler (the search engine companion in findlaw.com),[111] SavvySearch,[112] or LawGuru.com.[113] The various search engines are compared in an article by Diana Botluk that can be found on the Law Library Resource Xchange, LLC, website (LLRX.com).[114] You can also search by area of interest. For example, if you teach administrative law, Federal Web Locator[115] contains a searchable database of all federal agency websites, and the American Bar Association maintains several current administrative law publications online;[116] if you need to find legislative history, try THOMAS,[117] from the Library of Congress. If you cannot find a site that fits your needs, visit Scout Report[118] for a list of new sites that became available within the week. If you simply want to stay abreast of current information, Jurist[119] is a site that is especially designed for legal professors. Make any of these sites a bookmark[120] on your computer and you can retrieve information every day.[121]

52. Information can also be "pushed" to you; by inputting key words and jurisdictions or designating specific areas of law of which you want to be kept abreast, you can request certain law search engines to automatically "push" information to your e-mail address or your printer as soon as it is published on the Web. For example, log onto SmartCILP at http://lib.law.washington.edu/cilp/scilp.html[122] to receive e-mail messages every Wednesday morning with citations culled from weekly issues of the Current Index to Legal Periodicals in your area of interest. Try UnCover Reveal at http://uncweb.carl.org/reveal,[123] which delivers tables of contents of the latest issues of periodicals in many disciplines directly to your e-mail. Your searches are saved and run each week against articles newly added to the database. Loislaw.com has the *LawWatch*TM feature that performs automatic and continuous searches of state and federal law as well as daily *NewsFeeds*TM, which contain up to 7,500 domestic and international articles a day.[124] Make a specific search request, and the computer will e-mail the information to you as it is published. No need to surf the Web; it comes to you automatically.

53. Once you find your information online, read it online. Using it is easy, convenient, and creative. You can search electronic text for words and phrases, copy and paste passages into your own documents, and annotate the text. You will have no need for copiers, copy cards, or possibly even a research assistant. You do not need to stuff your briefcase with piles of papers; you can carry them around in a very small space, such as on a laptop computer or disk, and access them from practically anywhere.[125]

54. Next, use the Web to receive feedback on your scholarship or to view works in progress. You might already e-mail your scholarship to colleagues for review. However, networks are available for a more global review of your articles. For example, you can join the Legal Scholarship Network (LSN)[126] to access abstracts of working papers and articles accepted for publication in specific areas of law or place your own paper on line for review.

55. Finally, publish your article online. Many journals are publishing online now, and some are publishing exclusively online.[127]

56. In short, you need to submerge yourself in the culture of the Web; it is only by experiencing this world that you can begin to understand it, and only by understanding it can you begin to reach your students. Start with the links in this article; those links will bring you to other links, which will link you to other links, and so on. Soon, you will experience a three-dimensional world with your favorites sites bookmarked for your convenience. However, even when you become an adept surfer, do not expect Web-thinking to be your primary thought process - you were brought up in a book world.

B. Revitalizing Law School Curricula, Pedagogies, and Course Materials

57. Second, new technologies require new pedagogies and curricula.[128] New teaching methods may be uncomfortable, risky, and less familiar to law professors; they may redefine roles,[129] and they may demand that administrations rethink their five-year plans. However, in order to teach lawyers to practice in the new paradigm, law schools must be equipped for learning in that paradigm. Requiring laptops is not enough to meet the challenge. Instead, law school administrations need to revitalize law school curricula that are still organized around the fading West system. Law professors need to question their traditional classroom techniques where the Socratic method is often used to analyze the black letter law of an appellate case, and publishers and professors must redesign the course materials of law school. The next sections of the article suggest changes in these traditional methods in order to create law school pedagogy that bridges the digital divide.

1. Curricula

58. First, the administration needs to re-examine the traditional law school curricula where first-year courses mirror West categories and upper-class courses focus on specific fields of law. If the West categories are eroding, so too should the traditional first-year courses that mirror those categories. Should "bad faith denial of a contract claim" really be taught in a torts class? Should "tortious inference with a contract" be a contracts class discussion? The lines, if they ever existed outside of the myth, are already eroding.

59. Some law schools have already recognized this shift and offer non-traditional curricula. For example, at Georgetown University Law Center, one curriculum includes classes in: "Property in Time," "Bargain, Exchange, & Liability," "Legal Justice," and "Democracy & Coercion."[130] The focus in these types of curricula is not on topical categories, but on different methods of lawyering and legal thinking across a broad spectrum of legal jurisprudence. By learning across the curriculum, the students are not confined to the traditional West categories.

60. Other professions have recognized the benefit of such teaching methods. Business school curriculum, for example, is similar to these non-traditional, cross-curriculum courses. A business school student does not take courses in his specific field. For example, the courses are not entitled "Start-Up Companies," "Manufacturing Companies," or "Banking," as opposed to law school courses, which are designed to teach a specific field of law such as "Tax," "Contracts" or "Criminal Procedure." Instead, they are organized in a way to help the students focus on different aspects of business that they will encompass as general managers of any company. For example, courses are "Organizational Behavior," "Human Relations," and "Strategic Management."

61. Following this model, and expanding the cross-curriculum technique even further, law schools can provide similar courses to prepare the student for different aspects of the law they will face as a lawyer, regardless of the specific practice area. Imagine law courses on "Judicial Behavior," "Client Relations," or "Law Firm Management." Other possible subjects for first-year classes can include: "Litigation and Alternative Dispute Resolution," "Legal Drafting and Negotiation," and "Client Development." Because there is some inherent benefit to understanding the legal system from the 1900's, a course on "History of Legal Thought" would be appropriate to provide students with the development and use of the West system, and the categorical conceptualization of the law. In a restructured curriculum, the students learn the practical methods and theoretical underpinnings they will need to approach different problems that arise for all types of lawyers.

2. Pedagogies

62. Second, law professors need to address their traditional teaching methods, both for content and technique. Starting with content, does it make sense in the new paradigm to begin teaching with a rule from an appellate court case and teach students how to categorically label that rule (contracts → oral → performance → acceptance) before they apply the facts?[131] These students are not categorical labelers—they are discovery-based information gatherers. They do not want to be forced to spot an issue by identifying the West "box" in which it belongs; instead, they need to discover information and create their own "box" to solve legal problems.

63. In addition, students need to be actively engaged in the classroom. Lecture is not very effective for the active learner, even lectures in which the students seem to participate. Students today cannot sit passively and listen to a lecture, even if they raise their hands to ask or answer questions. Usually the same few students answer the questions while the others take notes to actively learn later through study groups. Have you ever witnessed, with frustration, a student playing solitaire on the laptop during lecture? It is not the student's fault; he needs to be actively engaged and discovering information for himself.

64. So how can professors teach law without starting with an appellate case to find the rule, and while engaging the students so that the discovery is done by the student, not the professor? One suggestion is for the law professor to assign "case studies" to the student. These are factual hypotheticals, problem sets, or actual facts from an appellate case that the students, either alone or in groups, need to resolve. They can discover the law through legal research or they can create the law out of a sense of policy issues or fairness. In class, they can discuss the various issues that went into solving the problems, the different outcomes reached, and the policies behind both. The professors can then provide the appellate case to discuss the rule that did come out of that factual situation, if the case study is from a real case, and compare the student-created law to the law "on the books." If it is a problem set or hypothetical prepared by the professor, discussions and comparisons would meet the same goals. By actively discovering the law, the students will feel engaged and attached to the law. In addition, if these "case studies" are taught in the non-traditional curricula, the students will be able to think creatively, out of the box, and not be limited to a specific area of law, such as "contracts," to resolve the problem. They will also be developing lawyering techniques to resolve problems instead of techniques to place problems into pre-ordained categories.

65. The "case studies" model has already been used successfully. For example, a typical business school student prepares for class by reading "cases," which are actual facts from a real company (for example see a case on knowledge management at Microsoft in 1997, link to http://www.bus.utexas.edu/kman/microsoft.htm). Before class, the student takes notes to discuss the various issues that arose for that company and successful or unsuccessful methods for approaching those issues. In class, the professor discusses those issues and engages the students into thinking like a general manager. The professor chooses cases that will teach his goals. Law professors can learn from this model and adapt law school class, through the case study method, to teach the students to think like lawyers, to solve problems with or without litigating, and to engage the students into discovering the law in a way that fits the situation, not a way that works for West editors.

66. The case studies method allows for the erosion of the traditional lecture and the Socratic method of questioning the students. Instead, students can pose the questions that arise out of the case studies. Granted, in the beginning of the semester, the professor will be proposing more of the questions in order to teach the students some appropriate issues and policies that apply. As the students become more proficient, the professor's role begins to fade as he assumes the role of monitor and provides occasional hints or feedback.[132] Eventually, the students should be able to ask the questions the lawyer asks when posed with a similar problem. By learning through discovery, the students are using their way of thinking to learn the law.

67. Law schools need not look to business schools alone for a model of teaching; law schools, themselves, are already using non-lecture techniques without the appellate case as the starting point. First, some law schools are already using case studies. For example, Stanford Law School has a "Case Studies Collection," which is designed to "hone students' problem-solving skills and stimulate creativity."[133] In addition, most law schools offer clinics. The clinical course is, in effect, a live case study, where professors use discovery-based learning. The students usually start with a factual problem, not an appellate opinion. They are asked to solve that problem. In order to solve it, they actively engage the client, argue in the court room, investigate facts, and discover legal avenues for helping the client. They learn by doing. They start with the facts, discover the law, and then create arguments to apply the law to their facts. Third, Legal Research and Writing programs offer similar experiences as the students are presented with fact patterns, asked to research the law, and create a written document to apply law to facts. This author is not suggesting that every law school class room should be run like business school, a law clinic, or legal writing class, but offers these models as suggestions for rethinking their traditional pedagogies to actively engage the students in the classroom through problem-solving.[134]

68. Professors also need to re-examine their teaching techniques in the new learning environment. The paradigm shift produces interaction, not competition. Gone are the days when students "razor-blade" pages from reporters; these cases are all online anyway. Instead, students today work together; collaboration is the way of the Web. E-mail, chat rooms, and communicating with experts, who are strangers, has made this group of students more communal; the electronic world is one of relationships. Professors should take advantage of this community. If the hope for the future of the law is based on mediation and arbitration instead of litigation, perhaps professors should be fostering a mediating, collaborative atmosphere in the classroom.

69. How can a professor foster an interactive dialogue where students form relationships to discover the law? Collaborative projects are one method. If students work together on projects, perhaps the case studies mentioned above, they might view lawyering as group problem-solving as opposed to confrontation. In addition, through reading, writing, and talking in groups, students begin to come up with ideas to explore, and they begin to remake the framework of knowledge by combing the academic or institutional knowledge within the framework of their own.[135] This type of learning is exactly the learning atmosphere of the Web. The professors can help the students navigate this process, but it is the group dynamic and the discovery that allow the students to actively learn the material. Learning is done through communication, not lecture.

70. Online chat groups, or "borderless classrooms,"[136] are another method for interactive learning. Because the student grew up on e-mail and instant messaging, chat groups are a natural avenue for exchanging ideas. Students might feel more comfortable asking the expert-professor questions online rather than in person. In addition, anonymous chatting is unavailable in the classroom. As a result, the shy or insecure student is usually not an active participant. Enter the chat room where anyone can speak or ask questions without being seen or even "heard." A new dynamic forms; one that is more interactive, more diverse, and more fruitful to both the students and the professor. The professor learns more about the students' understandings and misunderstandings. The students are able to ask questions without any perceived gender, racial, or sexual biases attached. The chat room becomes democratic, where "[t]hose people with powerful ideas will have more influence than those with powerful personalities."[137]

71. Chat rooms can take many forms; they can be used to supplement office hours,[138] to prepare for class and throughout the semester as an ongoing dialogue. As a method for class preparation, professors can require students to post writings about readings online at a designated time and location before class.[139] Professors can invite commentary from other students on those writings. As a result, students are forced to become actively engaged in the materials before they even enter the classroom; they have already voiced their opinion and "heard" other opinions on the subject. In addition, professors, by reading online reactions, gain a pulse of the class before entering the room. They know whether to start on the subject area at the beginning or whether the students have a strong enough grasp of the materials to warrant expanding deeper into the area. In a traditional classroom, professors might never have a pulse on the classroom until the final exam.

72. The law professor can also use video and audio to augment learning, especially for multi-media learners. For example, at Stanford University's engineering school, Professor Jim Givvons allowed videotaped classes to be sent to a group of students who were no longer physically able to come to class. This group played the tapes together and stopped them every three minutes or more to talk about what they had just seen, to ask each other questions, and to resolve issues on the spot. These students were constructing their own meaning of the material, and they performed better than live-class students.[140]

73. All of these interactive techniques re-calculate the role of professors from that of mentors to one of facilitators. Yes, the professors are still a fountain of information, but only one source of information. The students are also sources of information for each other. The students feel more empowered to learn through engaging themselves in the discourse instead of passively sitting in lecture. This type of information gathering is natural for these students. It is the way of the Web.

3. Course Materials

74. Third, professors and publishers need to redesign course materials to be interactive, creative, and three-dimensional. The first three-dimensional legal course book, the electronic casebook, made its entry into legal education in early the 1990's.[141] In its first form, it provided students with an electronic casebook that was similar in appearance to the printed version, and included page numbers, tables of contents, and indices,[142] as well as powerful search features, text highlighters, and the ability to insert the students' own notes.[143] In the more recent electronic casebooks, students can ask questions, using natural language or boolean searches. Additional information relevant to the particular topic is also easily accessible, as the various sections contain links to cases, statutory law, and background information. Often this additional information appears in smaller text boxes on the screen so the student can see both the casebook passage and the linked text simultaneously.[144] Students can also take exams and quizzes in the book itself, which can be self-administered through programs that time the tests and correct them. In addition, the electronic casebook is constantly updated. Supplements and second editions are not needed because a casebook can be immediately updated online and evolve eternally.[145]

75. The internal organization of the electronic book can be relatively insignificant as students and professors enter and exit from various locations. Read a case and click on a link to find the appropriate statute; a link within the statute will link you further to the definition section of the statute, which will provide you with links to more cases. The dimensions can be endless. As a result, the lines between statutes, cases, and treatises blur. As a matter of fact, why even call it a "casebook," or a "property" book? These distinctions and categories are beginning to fade and therefore might not be appropriate.

76. Another alternative to the electronic case book is the Internet.[146] Law professors can augment their current course materials using the Internet through course websites.[147] In the future, websites might be the only materials "distributed." They can provide students with the syllabus, policies and procedures, lecture notes, and any documents that professors wish to place on their sites, either from their own files or from online sources. Links can exist on the site so that the students can find other materials or research engines on point. Also, chat rooms and discussion groups can be part of the professors' courseware. Students can "hand in" papers online and professors can comment online before "handing them back." Professors can use pictures, music, and video to supplement the courseware so that the multi-media student is more engaged and case studies can come to virtual life. Professors can also implement active tutorials for the students who want extra help. These tutorials can lower anxiety and inhibitions that students have while answering questions, and ensure that students have fully grasped the meaning of the material before moving forward.[148] In addition, they allow for professors to be more experimental; they can test their students' understanding of the law while teaching it as opposed to waiting for the final exam. (For an example of a legal research tutorial, see http://www.ll.georgetown.edu/webpages/taylorw/introonline1.htm). Eventually, commercial publications will begin placing tutorials online to help prepare the students for law school exams or the bar.[149]

C. Student Proficiency

77. In addition to curricula, classroom techniques, and course materials, law schools must also reconsider the pedagogy behind teaching legal research to ensure that students are proficient in both mediums. Until recently, most legal research was taught primarily by the books. Passwords for LEXIS or Westlaw were withheld until second semester or the end of the fall. Students were frustrated with the paternalism of being "forced" to use the books, especially for Shepard's research. Once they received their online passwords, the computer was the only source of research, despite "nagging" from research and writing professors. The students felt as if the teachers were forcing them to use the books, think in their categories, and even use sophomoric indexes. As one Web-wise librarian put it: asking law students to use books when the Web was available was like "urging folks to eat vegetables at a buffet, while the LEXIS and Westlaw representatives were offering them a table of Big Macs and Twinkies."[150]

78. Today, many law schools distribute passwords in the beginning of the fall semester, but require research exercises using the law books. In addition, the professors caution the students not to use the computer exclusively, but the reality of the matter is that many students, once they receive their passwords, never venture back to the law library. In addition, many students are adept at Web legal research, employing such search engines as FindLaw.com,[151] Cornell Law School Library's Web page,[152] and Georgetown Law Library's

engines as FindLaw.com,[ ] Cornell Law School Library's Web page,[ ] and Georgetown Law Library's Web page.[153] Although these sites can be very helpful, some of the professors have never used them, so they cannot teach their intricacies or downfalls.

79. As a result of the digital divide, many frustrated legal research and writing professors complain that their students refuse to use the books, or that they find cases based on fact similarities instead of legal categorical similarities.[154] Many frustrated students complain about research projects in the library, arguing that they are a waste of time in an electronic world. Both students and professors are correct. Students do find cases based on factual analogies because their natural line of thinking is based on word searches, not on West categories; but West categories are disappearing so they should not be forced to think only in that legal paradigm. Book search exercises are a waste of time in an electronic world; but the legal world is not based entirely on technology - not even close yet. The students should be ambidextrous. The professors should be able to teach both Web research and book research effectively; the effective professor should teach the students to integrate both systems into their thinking and researching.

80. Why should the students use the books if the future is Web thinking? First, there is some intrinsic value to understanding the categorical development of the law; it can foster better word searches and lead to a deeper knowledge of current policies and traditional thinking. Second, most of the practitioners today are products of the book generation, just like the professors teaching these students. Therefore, the lawyers, especially supervising lawyers, think in terms of West categories, following the linear paradigm from the digests. Law students should be ready to work and research in this environment.[155]

81. The students, however, need more than nagging to accept the books, even as a secondary medium, and they need more than research exercises to explore the West paradigm. Although all students learn differently, most technologically-oriented minds simply do not work naturally in a linear fashion. They must be taught to think like a West editor in order to understand the historical, categorical relationships in the law.

82. In order to teach students to use and understand the historical importance of the books, they must be taught to think categorically and to understand why they need to think categorically. The teacher of legal research should 1) explain the history of legal publishing and the development of the West paradigm instead of assuming that the students can intuitively grasp it from the context of their law school curriculum; 2) help the students visualize the linear thinking by working out problems starting from broad digest topics to the specific Key Numbers[156] of the books; 3) explain the physical progress made in the library as the lawyer progresses from the "stacks" of the code to the digest to the reporter; and 4) retrace the various trails forged once the research is finished to visualize the "lines" of thinking by the publisher. In short, the research professors need to understand that the students require background in linear thought before they are sent to the books, and they should be taught why thinking by the books has become such an ingrained part of the legal profession.

83. The professors also need to teach the students how to research online, and online research should be taught as a legitimate form of legal research, not as a secondary medium. In order to accomplish this goal, the research professors need to believe in the future of legal electronic sources, be intricately familiar with recent sources and techniques to use them, and at least begin to think three-dimensionally.

84. Instead of thinking by West categories, professors need to help students create effective word searches online. Word searching is not very easy in practice or concept.[157] Thinking up all the legal words is often difficult for the legal novice, and no online legal thesaurus or Black's Law Dictionary is available.[158] Often a novice researcher will find 360 "hits" based on a word search. A background in West categorical thinking might help this researcher narrow a large number of hits by integrating a legal category into the search terms. An understanding of the division of sources between cases, statutes, and secondary materials, which is not obvious on the screen, might help this researcher narrow the library searched. In addition, the order of the words and the connectors are crucial to the number of hits recovered. Whether students find just a few cases or huge number of cases depends on what words they link together and whether or not they use parenthesis.[159] Professors should use technology to teach technology: get online in the classroom and have the students create word searches. Together they can search databases using the various word searches and discover methods for either broadening the range in the bull's eye, or narrowing it.

85. Legal research professors should not narrow their online teaching to LEXIS and Westlaw. They should use various legal search engines with the students in class. While most Web search engines do not yet rival LEXIS and Westlaw, they reinforce what the users have already learned about Boolean operators, proximity searching, field search techniques, and the general need to understand the search engine itself by simply reading directions.[160] Showing students the difference between relevancy retrieval and keyword search engines[161] can help them "distinguish the difference between recall and precision techniques."[162] Professors can illustrate the differences by using different search engines to do the same search and then comparing those results to each other and to the results of the same search on LEXIS, Westlaw, other search engines, and to a book-search.

86. Professors also need to teach students to read and research critically. Students feel that "if it's on the Web it must be true."[163] One screen looks the same as another. However, anyone can create a website,[164] and many people do. The volume of material is overwhelming, as there are no librarians overseeing quality control out of spatial concerns. The students need to be taught that their raw data is "raw." They must know how to evaluate for accuracy, authority, bias, currentness, and completeness.[165] The professors must teach the students to ask "Who created this website?" If it was a law library, then the librarians have acted as quality control, and the information should be reliable.[166] If it was the government, the information should be reliable.[167] The students also must be taught to question any political motivation or spin on the information. Professors can do this by using examples in the classroom where the students find bogus websites[168] or information that is diametrically opposed so that they can access the authorities. In addition, the students must be taught that the Web is a good source for current information, but often not for less recent information. Some students assume that if it is not on the Web, it is not relevant. However, historical information and older cases can be extremely relevant, and the students need demonstrations of the lack of resources on the Web for certain less recent information.

87. In short, professors need to understand their students' way of thinking, and use technology to foster an interactive, active, and creative classroom environment. While the books are still important in legal thought, the Web is the way of the future and cannot be considered a secondary medium. Students need to be ambidextrous - they need to be able to "throw the book at him" when necessary, as well as access information in a technological legal world. By integrating a categorical understanding of the law into their word-searches, students will become effective researchers. As court dockets become available online, the most cost-effective, convenient, and efficient way of researching will be on the Web, and technology will be the more prevalent medium for lawyers.

V. Conclusion

88. Professors teaching in the older paradigm of print need to re-examine their pedagogies in order to bridge the digital divide and successfully "teachlaw.com," just as politicians needed to rise to the challenges posed by the television camera. Thinking "by the books" under the West paradigm is not the only way to understand the law.[169] Professors grew up in the West era, and its topical and linear arrangement fit into the world of the library and the book. The law, as seen by professors today, "reflects certain assumptions that have been encouraged by the nature of printed information"; it has its own "editorial process" that filters out unwanted material.[170] Filtering and critical reading is easier to do when eyes are focused on the printed page instead of diverted to multiple objects from unknown sources.[171]

89. However, legal times are changing with technology. Students do not have to be a part of the "gestalt"; the new paradigm "has a plasticity and vibrancy all its own,"[172] and fits in with the students' discovery-based learning. Students are not confined by the West digest system. They do not have to force labels onto the law; instead, they can create the law they need to fashion a resolution to a problem. By logging on, lurking, and linking, students learn the law in a fashion that allows them to bring their own creativity to the table. That creativity can be fostered through open and active communication in law school. If professors encourage this discovery-based learning instead of forcing students to label the law into antiquated categories, then the lawyers of the future will be more creative and communicative as they enter the paradigm shift.

90. This paradigm shift presents a perfect opportunity for law schools to reshape the future of law. Legal pedagogy can encourage open communication between future lawyers where mediation and alternative dispute resolution are the norm instead of "alternatives." Professors can prime students to resolve problems and negotiate creatively, thinking "out of the box" in a way that will help their clients reach their goals. Professors can help future lawyers work together in a Web, building communities of knowledge and relationships to solve a myriad of legal issues so that "opposing counsel" will be working together to solve problems. Usually, good pedagogy dictates that professors determine their goals before they begin to prepare their classes and curricula. Perhaps, therefore, this author should have placed this concluding paragraph at the beginning of this article. Of course, if you are reading this article online, the author's organization is secondary to your own, so you are invited to read the article in the order you choose; or perhaps you have just entered this article online from another source and are primed to begin reading here, at the end of the article for the print reader, but possibly the choice beginning for the online reader.[173]

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[2] The original, full HTML format of this article is available at: http://www.teachinglaw.freewebsites.com.

[3] Philip Ernest Schoenberg, *Campaigning for President from 1901 to The Twenty-first Century*, *at* http://www.newyorktalksandwalks.com/presidentialexpert/campain.htm.

4 http://www.teachinglaw.freewebsites.com.

[5] Robert C. Berring, *The Electronic Law Library: The Electronic Future of Law Libraries*, 24 THE L. LIBR. 168, 169 (1993).

[6] *Id.*

[7] *Id.*

[8] The author herself is right on the cusp of both worlds - law school revolved around the books for her (there was one LEXIS terminal and one Westlaw terminal in her law school library). However, as she entered practice, LEXIS, Westlaw, and then the Web became prominent. The author prefers reading material in print, but prefers finding that material on line. The author has discovered that many of her former students are also on the cusp of both worlds.

[9] Supreme Court Justice Clarence Thomas admitted that he might be a "Luddite" if not for the "force of time and the shame inflicted by my law clerks." Justice Souter, who is a "member of the lead pencil club," said of his technological skills that "I am shameless." Roy M. Mersky and Kumar Percy, *The Supreme Court Enters the Internet Age: The Court and Technology*, June 1, 2000, *at* http://www.llrx.com/features/supremect.htm.

[10] Robert C. Berring, *Chaos, Cyberspace and Tradition: Legal Information Transmogrified*, 12:1 BERKELEY TECH. L.J. 189, 190 (1997), *available at* http://www.law.berkeley.edu/journals/btlj/articles/12_1/Berring/html/text.html.

[11] LEXIS, the first online research service, created by Mead Data Central, started in 1972. West followed suit in April of 1975, with Westlaw. However, the single most important movement for these services came in 1990, when both systems offered free passwords to every law student in the United States. *See* Michael A. Geist, *Where Can You Go Today?: The Computerization of Legal Education From Workbooks to the Web,* 11 HARV. J.L. & TECH. 141 (1997)*, available at* http://jolt.law.harvard.edu/articles/11hjolt141.html.

[12] You might use the library's online card catalogue service, but you are probably organizing your method of access the same way as if you were touching the cards themselves.

[13] M. ETHAN KATSH, LAW IN A DIGITAL WORLD 166 (1995).

[14] Robert C. Berring, *Legal Research and Legal Concepts: Where Form Molds Substance*, 75 CAL. L. REV. 15, 17 (1987).

[15] *See id*. at 18.

[16] *Id.* at 18.

[17] *See id*.

[18] *See* Berring, *supra* note 14, at 19 ("as early as 1803, some jurisdictions began to authorize official versions of the reports of decisions in reaction to the need for systematic coverage.")(footnote omitted). The first reporter was Ephraim Kirby's 1789 Connecticut Reports. THOMAS M. OWEN, REVOLUTIONARY SOLDIERS IN ALABAMA (Alabama Department of Archives and History 1911) (as updated in ALA. HIST. Q., Winter 1944), http://www.archives.state.al.us/al_sldrs/k_list.html (last modified Apr.17, 2000).

[19] Berring, *supra* note 14, at 19.

[20] In 1848, law reports filled 800 volumes. Berring, *supra* note 14, at 19, (citing FREDERICK C. HICKS, MATERIALS AND METHODS OF LEGAL RESEARCH WITH BIBLIOGRAPHIC MANUAL 94-102 (1923)).

[21] *See* Robert C. Berring, *Collapse of the Structure of the Legal Research Universe: The Imperative of Digital Information*, 69 WASH. L. REV. 9, 19 (1994). Research on the organizational system used within the brain continues today. *See* JOHN R. SEARLE, THE REDISCOVERY OF THE MIND (1992) (summarizing current theories).

[22] *See* Berring, *supra* note 14, at 19-20.

[23] *See id.* at 20.

[24] Symposium, *A Symposium of Law Publishers*, 23 AM. L. REV. 396, 407 (1889).

[25] Robert C. Berring, *Collapse of the Structure of the Legal Research Universe: The Imperative of Digital Information*, 69 WASH. L. REV. 9, 20 (1994).

[26] *Id.*

[27] *See id.* at 21.

[28] *Id*.

[29] Robert C. Berring, *Full-Text Databases and Legal Research: Backing Into the Future*, 1:27 HIGH TECH. L.J. 27, 31 (1986). For a further description of West's American Digest System, and category and topic lists, see FREDERICK C. HICKS, MATERIALS AND METHODS OF LEGAL RESEARCH WITH BIBLIOGRAPHIC MANUAL 233-43 (3d ed. 1942).

[30] Berring, *supra* note 25, at 22 n.31.

[31] *See* Columbia *at* http://www.law.columbia.edu/admissions/cur1.html, Harvard *at* http://www.law.harvard.edu/Admissions/JD_Admissions/jd_curric.html, Georgetown's "Curriculum A" *at* http://141.161.16.110/curriculum/jdprog.cfm, Yale *at* http://www.yale.edu/lawweb/lawschool/admissions. *But see* Georgetown's "Curriculum B" *at* http://141.161.16.110/curriculum/jdprog.cfm.

[32] Berring, *supra* note 25, at 22; *see also* ROBERT STEVENS, LAW SCHOOL: LEGAL EDUCATION IN AMERICA FROM THE 1850'S TO THE 1980'S (G. Edward White ed., 1983).

[33] Berring, *supra* note 25, at 22.

[34] West began with "The Syllabi" in 1876, which contained the Minnesota Supreme Court cases and annotations from surrounding states. This reporter was so successful that he next introduced the Northwestern Reporter in 1879, which contained full-text of all decisions from the Dakota territory, Iowa, Michigan, Minnesota, Nebraska, and Wisconsin. Within the next few years, he produced his reporters nationwide, dividing the country into seven regions and producing the Regional Reporters. The Federal Reporter and Supreme Court Reporter began in 1886. Robert C. Berring, *Full-Text Databases and Legal Research: Backing Into the Future*, 1:27 HIGH TECH. L.J. 27, 30 (1986).

[35] Berring, *supra* note 14, at 25.

[36] Berring, *supra* note 25, at 23.

[37] Berring, *supra* note 14, at 15.

[38] Berring, *supra* note 34, at 32.

[39] *Id*.

[40] *Id*.

[41] *Id.* (referring to STAR WARS (LucasFilm Ltd.1977), *available at* http://www.starwars.com).

[42] Robert C. Berring, *Thoughts on the Future: A Steroid-Enhanced Editorial*, 15(3/4) LEGAL REFERENCE SERVICES Q. 1, 2 (1996).

[43] Berring, *supra* note 34, at 34.

[44] *Id.* at 32.

[45] *Id.* at 36 (citing Zunde & Dexter, *Indexing Consistency and Quality*, 20 AM. DOC. 259 (1969) (stating that "[e]ven one editor will classify the same materials differently at different times")).

[46] Berring, *supra* note 34, at 36.

[47] BOB BERRING'S COMMANDO LEGAL RESEARCH, Tape 2 (Legal Star Communications 1989).

[48] Berring, *supra* note 42, at 12-13; Robert C. Berring, *Practicing Law in 2013*, ARIZ. ATT'Y, Aug./Sept. 1993, at 52, 52.

[49] Berring, *supra* note 42, at 12-13.

[50] Robert C. Berring, *On Not Throwing Out the Baby: Planning the Future of Legal Information*, 83 CAL. L. REV. 615, 616 (1995)(citing Greg Steinmetz & Raju Narisetti, *Reed Elsevier Wins Bidding for Lexis/Nexis: Publishing Concern to Pay a Total of $1.5 Billion for Mead Online Unit*, WALL ST. J., Oct. 5, 1994, at A3).

[51] See CourtLink *at* http://www.courtlink.com/main/index.html and CourtEXPRESS.com *at* http://www.courtexpress.com for examples of websites that allow access to state, federal, and local court records.

[52] Berring, *supra* note 42, at 2.

[53] Berring, *supra* note 42.

[54] Berring, *supra* note 48.

[55] Robert C. Berring, editorial, 7(2/3/4) LEGAL REFERENCE SERVICES Q. 1-2 (1987).

[56] *Id.*

[57] Berring, *supra* note 50, at 624 (referring to looseleaf services).

[58] John Seely Brown, *Growing Up Digital: How the Web Changes Work, Education, and the Ways People Learn*, CHANGE, Mar./Apr. 2000, at 11, 14, *available at* http://www.aahe.org/change.

[59] *Id.*

[60] *Id.*

[61] For example, on LEXIS, the New York Law Journal is in at least seven libraries, including banking, genfed, leg new, N.Y., Nws, and states. That it is really found in seven places is an illusion. KATSH, *supra* note 12, at 72-73. *See also* LEXIS.com, *available at* http://www.lexis.com.

[62] KATSH, *supra* note 13, at 120.

[63] Brown, *supra* note 58.

[64] M. ETHAN KATSH, THE ELECTRONIC MEDIA AND THE TRANSFORMATION OF LAW 221-22 (1989).

[65] David R. Johnson, *Building and Using Hypertext Systems*, 17 (4) LAW PRAC. MGMT. 28, 29 (1991).

[66] KATSH, *supra* note 13, at 198.

[67] If you are reading this article in print, you probably did not realize that when you read about the physical aspects described in Part II, Thinking By the Books, you can link to the non-physical aspects described in Part III, Three-Dimensional Linking and Thinking, to juxtapose the two. There are various links throughout the online version of this article where you can move about to immediately compare different ways of thinking. http://www.teachinglaw.freewebsites.com.

[68] Johnson, *supra* note 64, at 32.

[69] KATSH, *supra* note 13, at 198.

[70] Theodor Nelson, who coined the term, defined "hypertext" as " 'non-sequential writing - text that branches and allows choices to the reader.' " KATSH, *supra* note 13, at 199 (quoting THEODORE NELSON, LITERARY MACHINES 2 (1987)).

[71] KATSH, *supra* note 13, at 202.

[72] Westlaw is a fee-based service that can be accessed with a personal password at http://www.westlaw.com.

[73] LEXIS is a fee-based service that can be access with a personal password at http://www.lexis.com.

[74] Google is the favorite search engine of the author's research assistant, Kim Riker. Like most search engines, Google can be accessed for free at http://www.google.com.

[75] KATSH, *supra* note 64, at 221-22.

[76] Barbara Bintliff, *From Creativity to Computerese: Thinking Like a Lawyer in the Computer Age*, 88:3 L. LIBR. J. 338, 345 (1996).

[77] *Id.*

[78] *Id.* This phenomenon takes the Legal Research & Writing professor off guard when asking about cases found for a particular project. Although the student might have found appropriate case law, the student first focuses on the facts of that case as opposed to the rule of law.

[79] *Id.* at 346.

[80] *Id.*

[81] *Id.*

[82] *Id.*

[83] *Id.*

[84] Westlaw's "natural language" was made available in 1992, and LEXIS's "free lance" was available in 1994. *See* KATSH, *supra* note 13, at 84-85.

[85] Bintliff, *supra* note 76, at 347.

[86] Berring, *supra* note 34, at 42.

[87] *Id.* at 42-43.

[88] *Id*. at 42.

[89] Looseleafs compile the law based on subject matter (*i.e.*, criminal law) as opposed to the type of law (*i.e.*, statutes, cases, regulations).

[90] Berring, *supra* note 34, at 56.

[91] For an example of a bogus website, see the Oklahoma Association of Wine Producers website at http://members.aol.com/okawp. To reveal the bogus nature of the website click on the copyright line at the bottom of the page or go directly to: http://members.aol.com/okawp/copyrite.htm.

[92] Berring, *supra* note 34, at 56.

[93] KATSH, *supra* note 13, at 23.

[94] *Id*.

[95] Berring, *supra* note 42, at 3.

[96] *Id*. at 13.

[97] *See id*. at 4.

[98] KATSH, *supra* note 13, at 173.

[99] Berring, *supra* note 42, at 4.

[100] KATSH, *supra* note 13, at 173.

[101] Shelley Ross Saxer, *One Professor's Approach to Increasing Technology Use in Legal Education*, 6 RICH. J.L. & TECH. 21 (Winter 1999-2000), *at* http://www.richmond.edu/jolt/v6i4/article4.html ("Most law schools, however, are far behind the educational systems that send us our students in terms of integrating technology into the learning process)(citing Tracey Baetzed & Carl W. Herstein, *Virtual Memory: Looking Back at the Changing Relationship Among Lawyers, Law Firms and Technology*, 77 MICH. B. J. 422, 426 (1998); Paul F. Teich, *How Effective is Computer-Assisted Instruction? An Evaluation for Legal Educators*, 41 J. LEGAL EDUC. 489 (1991)).

[102] *But see* Georgetown's "Curriculum B," *at* http://141.161.16.110/curriculum/jdprog.cfm.

[103] Brown, *supra* note 58, at 14.

[104] http://www.teachinglaw.freewebsites.com.

[105] http://www.teachinglaw.freewebsites.com.

[106] *At* http://www.westlaw.com (password required).

[107] *At* http://www.lexis.com (password required).

[108] *At* http://www.findlaw.com.

[109] *At* http://www.law.cornell.edu.

[110] *At* http://www.washlaw.edu.

[111] *At* http://www.lawcrawler.com.

[112] *At* http://savvy.search.com.

[113] *At* http://www.lawguru.com.

[114] Diana Botluk, *Search Engines Compared*, LLRX, July 15, 2000, *at* http://www.llrx.com/features/engine3.htm.

[115] *At* http://www.infoctr.edu/fwl.

[116] *At* http://www.abanet.org/adminlaw/home.html.

[117] *At* http://thomas.loc.gov.

[118] Internet Scout Project, *at* http://scout.cs.wisc.edu.

[119] Jurist, The Legal Education Network at the University of Pittsburgh School of Law, *at* http://www.jurist.law.pitt.edu/

[120] A "bookmark" is a way of saving your favorite sites on the Web. Your browser should have an icon for bookmark, or favorite, or something similar that allows you to save sites.

[121] For sites that are not related to teaching, try Blue Mountain, *at* http://www.bluemountain.com, to send electronic greeting cards, or PlanetRx.com, *at* http://www.planetrx.com, to order prescriptions online.

[122] Your law library should have an authorization code and a billing address; you can check off the subjects and particular journals for which you wish to receive table of contents information. Be sure to click the "Order SmartCILP" button ONLY when you have completed ALL of the information.

[123] Your law library should have billing information for this service.

[124] Lois *LawWatch*™ comes with the Loislaw.com subscription package at no extra cost at http://www.loislaw.com/info/content/watch.htm.

[125] *See* Geoffrey Nunberg, *The Places of Books in the Age of Electronic Reproduction*, 42 REPRESENTATIONS 13, 17 (1993).

[126] Abstracts of working papers and articles are available in the following areas of law: administrative law, antitrust and regulation, bankruptcy, reorganization, and creditors rights; constitutional law, jurisprudence and legal philosophy; corporate law abstracts; governance and finance law; criminal law and procedure; cyberspace law; discrimination, law and justice; employment and labor law; environment law and policy; general law; intellectual property; international and trade law; law and economics; law and humanities/legal culture; litigation, procedure, and dispute resolution, regulation of financial institutions; tax law and policy; tort and product liability at http://www.ssrn.com/lsn/.

[127] For a list of online journals, see Hieros Gamos, the Comprehensive Law and Government Portal, at http://www.hg.org/journals.html, The Law School, University of Southern California, at http://www.usc.edu/dept/law-lib/legal/journals.html, or the E.B. Williams Law Library at Georgetown University, at http://www.ll.georgetown.edu/os/journals/journqc.html.

[128] Arthur Levine, *Higher Education in the Digital Age*, 1998 TCHRS. C. ANN. REP. (1998), *available at* http://studentaffairs.com/ejournal/Spring_2000/article1.htm.

[129] *Id.*

[130] *See* Georgetown's "Curriculum B" *at* http://141.161.16.110/curriculum/jdprog.cfm (showing example of non-traditional law school curriculum).

[131] Though the case-law method is used by a majority of law schools, critics of this teaching method assert that it does not prepare law students to effectively deal with real-life legal problems. *See, e.g.*, Myron Moskovitz, *Beyond the Case Method: It's Time to Teach With Problems*, 42 J. LEGAL EDUC. 241 (1992).

[132] *See* Allan Collins, John Seely Brown, & Ann Holum, *Cognitive Apprenticeship: Making Thinking Visible*, 15 AM. EDUCATOR 3, 5 (Winter 1992), http://www.21learn.org/arch/articles/brown_seely.html.

[133] *See* Stanford Law School Case Studies, *at* http://www.law.stanford.edu/casestudies. This site can be downloaded for examination. With prior permission from Stanford Law School, professors can also obtain copies of Case Materials they want to use in the classroom for free.

[134] The case-study method is actually a more traditional method of interning with a mentor in order to learn the practice of law. For an historical perspective, see Britannica.com, *Legal Education*, at http://www.britannica.com/bcom/eb/article/printable/0/0,5722,109610,00.html.

[135] Hephzibah Roskelly, *The Risky Business of Group Work*, *in* THE WRITING TEACHER'S SOURCEBOOK 127 (Edward P.J. Corbett et al. eds., 4th ed. 2000); *see also* Kenneth Bruffee, *Collaborative Learning and the Conversation of Mankind*, 46 C. ENG. 635 (1984).

[136] Shelley Ross Saxer, *One Professor's Approach to Increasing Technology Use in Legal Education*, 6 RICH. J.L. & TECH. 21 (Winter 1999-2000), *at* http://www.richmond.edu/~jolt/v6i4/article4.html.

[137] Gail E. Hawisher & Cynthia L. Selfe, *The Rhetoric of Technology and the Electronic Writing Class*, *in* THE WRITING TEACHER'S SOURCEBOOK, *supra* note 135, at 131 (quoting Michael Spitzer, *Writing Style in Computer Conferences*, 29 IEEE TRANSACTIONS ON PROF. COMM. 19, 20 (1986)).

[138] There has been some criticism that online office hours may substitute for face-to-face office hours and make the professor-student relationship more distant. *See, e.g., id* at 136. However, chat groups online should supplement, not substitute, office hours to provide for a medium for the student who would not otherwise visit the professor in person.

[139] This method is used at Georgetown Law Center by Profs. Richard Chused and Jeffrey Bauman.

[140] Brown, *supra* note 58, at 17.

[141] Saxer, *supra* note 136; *see also* Lincoln B. Quintana, *Making Our Way into the Coming Age of Electronic Casebooks*, 8 INT'L Y.B.L. COMPUTERS & TECH. 131 (1994).

[142] Saxer, *supra* note 136.

[143] *Id*.

[144] Contact LEXIS for instructions on downloading and viewing an electronic casebook; *see also*, Lupus Publications, *at* http://lawschool.lexis.com/lupus

[145] For two studies on students' use of electronic material, see Peter W. Martin, *Report on the Chicago-Kent Computer Section – 1995-96* (May 1996) (unpublished manuscript, on file with author), and Richard A. Matasaar & Rosemary Shiels, *Electronic Law Students: Repercussions on Legal Education*, 29 VAL. U.L. REV. 909 (1995).

[146] For a brief explanation of the Internet, see Geist, *supra* note 11.

[147] For an example, see Georgetown at http://www.law.georgetown.edu/courseware/. Enter username "lrw" and password "lrw." There is a large selection of courseware available for professors. Most schools have their own courseware that professors can use to create a website. In addition, Westlaw has courseware that links to Westlaw itself at http://www.westlaw.com.

[148] Saxer, *supra* note 136.

[149] Imagine the market for an interactive Emanuel's outline or Barbri online so that the student can prepare for the bar in the comfort of his room.

[150] Berring, *supra* note 25, at 31 (quoting Charles Ten Brink of the University of Chicago Law Library).

[151] *At* http://www.findlaw.com.

[152] *At* http://www.law.cornell.edu.

[153] *At* http://www.ll.georgetown.edu.

[154] Interview with Kris Robbins, Associate Professor of Legal Research and Writing, Georgetown University Law Center, in Washington, D.C.

[155] For example, if a Judge asks her clerk to read cases from a particular "headnote" or "Key Number," the clerk will need to understand the terms, which derive from the West system.

[156] Many law students today are bewildered by the Key Number system and give up trying to make any sense out of it.

[157] Ethan Katsh, *Law in a Digital World: Computer Networks and Cyberspace*, 38 VILL. L. REV. 403, 475 (1993).

[158] *See id.*

[159] *Id.* at 475-76.

[160] Steven J. Bell, *Weaning Them From the Web: Teaching Online to the MBA Internet Generation*, 21 DATABASE 67, 70 (June/July 1998).

[161] For example, many people are not aware that Yahoo!, at http://www.yahoo.com, searches only categories of websites, while AltaVista, at http://www.altavista.com, searches within websites.

[162] Bell, *supra* note 160, at 70.

[163] *Id.*

[164] See Register.com™ at http://www.register.com for an easy, 6-step guide on how to register a domain name.

[165] *See* Katsh, *supra* note 157, at 482.

[166] *See, e.g.,* Cornell University Legal Information Institute, *at* http://www.law.cornell.edu; Georgetown University Law Library, *at* http://www.ll.georgetown.edu.

[167] *See, e.g.,* U.S. Government Printing Office, *at* http://www.access.gpo.gov/su_docs/; THOMAS, U.S. Congress on the Internet, *at* http://thomas.loc.gov.

[168] *See, e.g.,* Oklahoma Association of Wine Producers website, *supra* note 91.

[169] *See* Berring, *supra* note 25.

[170] KATSH, *supra* note 64, at 101.

[171] *Id.*

[172] Berring, *supra* note 25, at 30.

[173] http://www.teachinglaw.freewebsites.com.