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Current Theories on Expert and Novice Thinking: A Full Faculty Considers the Implications for Legal Education

John B. Mitchell

Most law professors are puzzled by the same basic questions. How can we do what we do with such ease, when so many of our students seem to struggle (particularly in the first year) with what appears to be relatively uncomplex analysis? (Are we really that much smarter than them?) Why do students (at least initially) give so many "off the wall" answers; and why do some, who otherwise appear intelligent and who even may have been successful in another field, never seem to catch on? Why do students who have succeeded in college and perhaps even in another graduate program seem to experience a breakdown in the most basic powers of simple logic, common sense, and clear expression when they enter law school; and why do they seem to go through such emotional trauma even though, in truth, few of us are Professor Kingsfields in class?

Where can we find answers? Current cognitive and developmental theories of novice and expert thinking may provide insights that can guide our teaching. Although scattered references to educational psychology and learning theory have slowly begun to appear in isolated articles in our literature,[1] the ideas have not yet become a central focus in discussions of legal education.

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1. For example, the ideas of B. F. Skinner and behaviorist theory on stimulus-response bonds are briefly discussed in Charles D. Kelso, The 1981 AALS Conference on Teaching Contracts: A Summary and Appraisal, 32 J. Legal Educ. 616, 633 (1982); concepts from learning theory concerning "generalizing" from experience are mentioned in E. Walter Van Valkenburg, Law Teachers, Law Students, and Litigation, 34 J. Legal Educ. 584, 602 (1984); the developmental psychologists Erikson, Piaget, Kohlberg, and Perry are discussed in a footnote in James R. Elkins, Rites de Passage: Law Students "Telling Their Lives," 35 J. Legal Educ. 27, 30 n.9 (1985); citations to works on theories of mastery learning can be found in Jay M. Feinman & Marc Feldman, Achieving Excellence: Mastery Learning in Legal Education, 35 J. Legal Educ. 528, 530 n.5 (1985); educational research from other fields is used to discuss the efficacy of various teaching methods in Paul F. Teich, Research on American Law Teaching: Is There a Case Against the Case Method? 36 J. Legal Educ. 163, 173, 174 (1986); educational research on what it requires to make a skill "transferable" is mentioned in John O. Mudd, Beyond Rationalism: Performance-Referenced Legal Education, 36 J. Legal Educ. 189, 201 (1986); learning theory on use of the visual senses and retention is pointed out in Vincent Robert Johnson, Audio Visual Enhancement of Classroom

The following article discusses various learning theories and then chronicles a variety of ideas that apply the theories to our teaching. The ideas are not mine alone but rather reflect the ponderings of nearly twenty faculty members at the University of Puget Sound School of Law.[2] Some ideas represent initial impressions and are presented in a short paragraph without further elaboration. Others are more fully conceived. They represent the views of individual faculty members (most of whom are traditional Socratic teachers) and do not reflect any sort of faculty consensus. In fact, throughout the institution there are faculty members who would disagree——with various levels of intensity—with one or more of the ideas presented. That is how it should be in an institution in which the free and open exchange of ideas is so central. For what is a school but a place to learn, question, and ultimately learn through questioning?

Teaching: A Primer for Law Professors, 37 J. Legal Educ. 97, 100 n.14 (1987); theapplication of experimental learning theory in Paul Bergman, Avrom Sherr & Roger Burridge, Learning From Experience: Nonlegally-Specific Role Plays, 37 J. Legal Educ. 535, 536 (1987); Carol Gilligan's theories on women's ways of knowing are discussed in Paul Spiegelman, Integrating Doctrine, Theory, and Practice in Law School Curriculum: The Logic of Jake's Ladder in the Context of Amy's Web, 38 J. Legal Educ. 243, 247 (1988). In addition, for many years, Michael Josephson has lectured on legal education using "Bloom's Taxonomy" (Benjamin S. Bloom, Max D. Englehart, Edward J. Furst, Walker H. Hill & David R. Krathwhol, Taxonomy of Educational Objectives, Handbook I: Cognitive Domain (New York, 1956) [hereinafter Bloom] as a major foundation for his presentation. Finally, the president of AALS, Richard G. Huber, discussed the importance of learning theory for our profession in the President's Message, Newsletter (September, 1988).

2. The ideas did not spring forth in a vacuum but are the products of a fermentation that began at a day-long workshop in which twenty members of the faculty discussed relevant theoretical background literature, engaged in various exercises, and heard presentations covering current theories on reasoning and education as applied to expert and novice learning. The faculty was joined in the workshop by Joseph Williams, professor of linguistics and rhetoric at the University of Chicago. Williams is a cofounder of the nationally acclaimed series of annual conferences on teaching "higher-order reasoning and thinking critically" at the University of Chicago. Our background readings included Richard C. Anderson, The Notion of Schemata and the Educational Enterprise, *in* Schooling and the Acquisition of Knowledge, ed. Richard C. Anderson, Rand J. Spiro & William E. Montague, 415 (Hillsdale, N.J., 1977); Robert Glasser, Education and Thinking: The Role of Knowledge, 39 Am. Psychologist 93 (1984); James F. Voss, Telly R. Greene, Timothy R. Post & Barbara C. Penner, Problem-Solving Skill in the Social Sciences [hereinafter Problem-Solving Skill], *in* 17 The Psychology of Learning and Motivation 165, ed. Gordon H. Bower (New York, 1983); David N. Perkins, Reasoning As Imagination, 16 Interchange 14 (1985).

The full faculty at the time this article was written numbered over forty and included James Bond, Dean, and the following professors and legal writing instructors (in alphabetical order): Barbara Barker, James Beaver, Marilyn Berger, David Boerner, Doug Branson, Don Carmichael, Michael Charneski, Eric Chiappinelli, Crystal Crawford, Sid DeLong, Deborah Dowd, Joel Eichengrun, David Engdahl, Ann Enquist, William Francisco, Sheldon Frankel, George Hauck, Thomas Holdych, Betsy Hollingsworth, Marci Kelly, John La Fond, Raven Lidman, Deborah Maranville, John Mitchell, Michael Newcity, George Nock, Laurel Oates, William Oltman, Marsha Pechman, J. Thomas Richardson, J. Chris Rideout, Wallace Rudolph, Irene Scharf, Pierre Schlag, Richard Settle, Barry Shanks, David Skover, Anita Steele, John Strait, Andrew Walkover, and John Weaver.

I. Why Can We Do What We Do With Such Ease, While Our Students Struggle?

A. How People Understand: Cognitive Psychology and Schema Theory

Decades ago, cognitive psychologists maintained that understanding involved more than a direct response to a particular perceived stimulus. It required a patterning of the various elements of the experience into a structure or "scheme."[3] Cleaned up and polished by current experts in artificial intelligence, psychology, educational psychology, linguistics, mathematics, rhetoric, computer science, logic, and education, the notion has reemerged as "schema theory." Put simply, "schemata" are interpretive frameworks, built out of past knowledge and experience, that allow us to make sense out of the bits and pieces of information presented to us in given situations.

> To perceive something is to place a construction upon it that plausibly accounts for the sensory input. To comprehend a message is to discover a formulation which coherently explains its contents. Mundane acts of perception and comprehension proceed so smoothly that we are unaware of the process of formulation and checking.[4]

Most significantly, the schema supplies elements that are not literally included in the experience (or "message" or "text").

> The meaning is not in the message. A message is a cryptic recipe that can guide a person in constructing a representation. The representation which accounts for a message will usually include elements that are not explicitly contained in the message. These imported elements will be the ones required to maintain consistency with the schemata from which the representation is built, in just the same sense that recognition of a cube requires one to assume faces that cannot be seen.[5]

In fact, "[w]ithout some schema into which it can be assimilated, an experience is incomprehensible and, therefore, little can be learned from it."[6]

A cube is a simple example. Where do those sides you "see" but cannot possibly really observe come from? We know they are there (though we could be fooled by a pseudocube constructed in the manner of a hotel on the set of a Hollywood movie). We infer them from prior knowledge and experience.[7]

Think about driving. While riding down the street, the beginning driver catches a glimpse of a car sitting in a driveway, with exhaust flowing from the tailpipe. The driver is talking to a friend, who is standing next to the car. To the beginner, it is just someone chatting, nothing worthy of notice. You,

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3. See generally Jean Piaget, The Language and Thought of the Child (London, 1952); Jean Piaget & Barbel Inhelder, The Psychology of the Child (New York, 1969); Wolfgang Köhler, The Mentality of Apes (New York, 1925); Edwin G. Boring, A History of Experimental Psychology, ch. 23, 2d ed. (New York, 1950); cf. Noam Chomsky, Syntactic Structures (Hague, 1957).
4. Anderson, *supra* note 2, at 419.
5. *Id.* at 422.
6. *Id.* at 429.
7. Cf. Emily Calhoun, Thinking Like a Lawyer, 34 J. Legal Educ. 507, 508 (1984): "Bronowski begins his lectures with a discussion of inference. He contends that 'inferences are . . . at the root of all our mental process.' Even visual perception depends on an inferential process."

on the other hand, do focus on the scene. You have seen a driver in such a situation wave goodbye to the friend and in one motion back out without looking. You therefore "see" a whole set of meanings and significances that the beginner does not see. You prepare to stop suddenly if necessary.

Now, consider a legal example. You are sitting in a room with a group of people who are novices in legal matters. One person says, "Did you hear about poor Smith? Hit crossing the street. An ambulance came for him and started to take him to the hospital but the driver was totally drunk. Crashed into a parked car, killing Smith in the process." If the conversation then turns to who is in trouble, most of the participants are likely to focus on the drunken ambulance driver, with some adding that the original driver who hit Smith is probably also somewhat to blame. You, however, "see" other possibilities that are not in the fact statement. The ambulance company may be liable (respondent superior, negligent hiring, negligent supervision). Additionally, whether the original driver's negligence is the proximate cause of Smith's death will be an issue. Depending on the results of that analysis, the original driver or the ambulance driver may not be liable. Further, you would want to investigate to determine whether there may be a question of "but for" causation in the crash of the ambulance. An axle may have broken, and therefore the same accident would have resulted even if the ambulance driver had been sober. And so on.[8] Segue to expert versus novice thinking.

B. Relationship of Schema Theory to Expert Versus Novice Thinking

One way of analyzing "intelligent" thinking may be a bit upsetting for some:

> It is by no means obvious that very smart people are that way directly because of the superior power of their general methods—as compared with average people. . . . A very intelligent person might be that way because of specific local features of his knowledge—organizing knowledge rather than because of global qualities of his "thinking."[9]

The same appears to be true of experts. Achieving expertise may involve the accumulation of certain types of experiences rather than cognitive growth or change. In other words, experts know a lot—language, procedures, analogies, historical debates in their areas—all of which give them an expert "schema" from which to approach a problem, processing information in ways a novice cannot.[10]

As legal "experts," we approach legal problems with a great deal of "domain-based" knowledge. We possess a vast array of information about law and its processes: legal vocabulary; cases; use of analogies; character-

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8. An early word of caution. Examples such as this one can be helpful because they give content to an idea. They can also be misleading because they limit a broader idea to the narrow confines of the particular example. This example principally involves the intersection of issue-spotting skills with specific doctrinal knowledge. As will be discussed later, however, the schema of a legal expert, while including both types of knowledge, encompasses far more.

9. Glasser, *supra* note 2 at 98, citing the artificial intelligence (AI) experts Marvin Minsky & Seymour Papert, Artificial Intelligence 59 (Eugene, Oregon, 1974).

10. Glasser, *supra* note 2, at 98–99.

istic "patterns" or "moves" in reasoning;[11] relationships between bodies of doctrine, along with an awareness of general principles and issues that cut across such bodies; the significant questions and historical perspective in each of our areas; procedures for approaching problems; knowledge of the conventions controlling what can or cannot be said. Our "knowledge base," more than any unique cognitive capacities we possess, provides us with an effective framework (i.e., schema) for approaching and analyzing problems. Entering law students ("novices"), however, have no such knowledge base (although they may well possess a different expert knowledge base—e.g., as engineers, mathematicians, etc.). Accordingly, they are not capable of approaching legal problems in the manner that is second nature to those of us in the "knowledge community" or "domain" of law.

Now the hard question. How, specifically, does this "knowledge base" or "schema" reflect itself in expert thinking in contrast to novice thinking? Two sources provide some tentative answers. The first is an experiment in the social sciences. Although there are differences in the methodologies of social studies and law, there are some helpful commonalities that make the experiment useful for our purposes. Both disciplines deal with ill-defined problems (in both, defining the problem may be the most difficult step), and both rely on informal reasoning (in contrast to mathematics or logic).[12]

The social-science experiment was a rather intriguing one.[13] Political science experts on the Soviet Union and other regions, college students in a beginning course on the Soviet Union, graduate students in the field, and experts from other fields (chemistry) were asked how they would solve the Soviet grain-shortage problem if they were the Soviet Minister of Agriculture. The subjects were taped as they worked through the problem, and their responses were then analyzed. Although there were differences among the Soviet experts in how they approached the problem, certain general observations could be made about all of them.

1. The Soviet experts focused on defining and formulating the problem, trying to develop a problem "representation"[14] (just as we try to define

11. See, e.g., Pierre Schlag & David Skover, Tactics of Legal Reasoning (Durham, N.C., 1986).
12. Perkins provides a very helpful articulation of the characteristics of "informal reasoning" versus "formal reasoning." See Perkins, *supra* note 2, at 21. Cf. Karl Klare, The Law School Curriculum in the 1980s: What's Left? 32 J. Legal Educ. 336, 340 (1982) ("Legal reasoning exists primarily as an array of highly stylized modes of justificatory rhetoric. From the standpoint of logic—as opposed, for example, to the perspectives of anthropology or hermeneutics—there simply is no necessity or determinacy to legal reasoning, no inner compulsion to its methods."). Particularly interesting is Perkins's insistence on the necessity of imagination for developing the dialectical lines of argumentation that good informal reasoning requires. Perkins, *supra* note 2, at 21, 22. For an endorsement of the importance of imagination and intuition to legal reasoning, see Calhoun, *supra* note 7, at 508, 510–14.
13. The experiment is described in Problem-Solving Skill, *supra* note 2, at 191–212.
14. To solve a problem, an expert constructs a "representation" of it. *Id.* at 191. For Glasser, the "relation between the structure of the knowledge base and problem-solving process is mediated through the quality of the representation of the problem. We define a problem representation as a cognitive structure corresponding to a problem that is constructed by a solver on the basis of domain-related knowledge and its organization." Glasser, *supra* note 2, at 98.

the "issue"[15]). Novices plunged right into looking for solutions.

2. The Soviet experts sought broad principles, which were then applied throughout their chain of analysis and which, in fact, organized their analysis, while the novices seized on concrete features on the surface of the problem.[16] (Similarly, in criminal law, students dealing with the question of whether there should be an insanity defense will tend to focus on the concrete feature of "insanity" rather than on broader questions of culpability and the purposes and legitimacy of the criminal sanction.)

3. The Soviet experts developed extensive argumentation to support their conclusions, including long chains of analyses dealing with subproblems, constraints, and qualifications.[17] Novices provided little argumentation, and the argumentation they did engage in involved very short chains of analysis in which no real subproblems were recognized, let alone analyzed.

What of the others in the study? Expert chemists were similar to novices. Graduate students formulated the problem in more abstract terms than novices. (While a novice would say "more roads and tractors," the graduate student would say "transportation"; experts, on the other hand, would say "infrastructure."[18]) Graduate students also examined some subproblems but engaged in minimal argumentation. The political scientists who were not Soviet experts generally were similar to the Soviet experts (though not with the factual-political-historical richness or depth), except that they did not come up with a general solution.

Again, what accounts for the difference in approaches between experts and novices? According to the experimenter, the difference is not in *general* problem-solving skills. Both experts and novices applied similar general skills (e.g., "look for the 'causes' underlying a problem and deal with those causes"). Rather, the difference between the expert and novice can be solely attributed to the expert's incorporating an expert knowledge base (schema) that the novice did not possess.[19]

A second example that sheds some light on the difference between novice and expert thinking comes from the day-long faculty workshop that generated this article. At the beginning of the day, the faculty was divided into groups of five. One group was composed exclusively of professors who taught in the area of criminal law. (In retrospect, it would have been

15. Of course, by "the issue" we may mean what the decision maker had to decide (e.g., "Is the contract unconscionable?") and/or some broader conception (e.g., "Why should courts interfere with private agreements?"). Cf. Jennifer Jaff, Frame-Shifting: An Empowering Methodology for Teaching and Learning Legal Reasoning, 36 J. Legal Educ. 249, 253–54 (1986) (on "broad" and "narrow" frames).

16. Glasser came to a similar conclusion from his own work and research. See Glasser, *supra* note 2, at 98–99 ("the knowledge of novices is organized around the literal objects explicitly given in a problem statement").

17. Cf. Perkins, *supra* note 2, at 21 (good informal arguments generally require some "hedging").

18. The experts' use of hierarchical classifications permit both memory storage and retrieval. See Problem-Solving Skill, *supra* note 2, at 206–07. Cf. Glasser, *supra* note 2, at 98–99 ("Experts' knowledge, . . . is organized around principles and abstractions that subsume these objects").

19. Problem-Solving Skill, *supra* note 2, at 204–08. See also Glasser, *supra* note 2, at 98–99.

interesting to have included a group of students.) The groups were each given a criminal-law-based fact pattern and were instructed on the approach they were to take in their analysis.[20] In a sequence of exercises, the faculty members worked on the analysis individually, discussed it in their groups, and then worked alone on the question, "What did you do when you analyzed the fact pattern?"[21] They discussed the "mental processes" analysis in their groups and then reported their various thoughts and perceptions in a full faculty discussion. The results are interesting but

20. Your dean has taken you aside and told you the following:

> "I'm in a real jam and need you to help me out. Professor Glib, who teaches the large section of criminal law, just called me this morning to tell me he's decided to retire. Now, I don't remember if you've ever taught criminal law before or if your last contact with the subject was in law school, but class starts tomorrow and I want you to teach it . . . One other thing. The text books have not arrived at the bookstore yet, and there are no treatises or outlines either. All we have is a short fact pattern concerning the exploits of a young woman named Cynthia. Anyway, you're an expert in legal analysis, so you should have no problem. Good luck . . . "

Thanks Dean, you think, and return to your office to prepare. Eventually, you must determine how you will present the material to the class. But first you want to analyze the fact pattern for yourself.

For *this exercise* focus *only* on your analysis. Specifically, analyze what, in plausible theory, Cynthia's *criminal* liability *could* be, and then, what it *should* be. *Do not* concern yourself with what it *would* be in any current jurisdiction. And, again, do not worry at this time about how you would actually teach the class; just concern yourself with your analysis.

<center>*   *   *   *   *</center>

FACT PATTERN

Cynthia Brandon is going to be charged with an "assault with the intent to commit murder." I just talked to the D.A. Cynthia is 20 years old, and apparently went berserk at a fraternity party, bashing in the head of her boyfriend, Carl Allen, with a wine bottle when he tried to restrain her. I just talked to our client's brother when I arranged the bail. Cynthia was too sedated to talk to me. According to the brother, Cynthia had been given two marijuana joints at the party by an acquaintance, Eddie Climpson, who told her that it was "real strong grass." Our client, who apparently is a regular marijuana user, went outside and smoked a joint and a half by herself. She remembers beginning to feel "weird" but doesn't remember any more of the day's events. Apparently, the joints had been heavily laced with Angel Dust (PCP).

21. Now, think about your *methodology* for approaching this analysis, and see if you can begin to become aware of your mental processes (not an easy task):

1. What was the first thing(s) you did/thought about when you read through the hypo?
    What words did you focus on?
    What do you think you were trying to do?

2. Did you *recognize* the problem(s) involved from past knowledge?
    What was this knowledge?
    Where did it come from?

3. Did you use prior doctrinal knowledge, analogies, general statements of legal values (e.g., "legal rules must provide clear guidelines"), some general theories about this area of law (e.g., "criminal liability must be based upon individual culpability which, in turn, requires meaningful choice"), something else or in addition?
    Specify . . .
    Where did these things come from?

hardly lay claim to being scientific. The exercise, however, was simply meant to aid us in the difficult task of gaining insight into what we do.

Although the criminal law or "expert" group approached the problem in a number of different ways, each approach had common characteristics. The group members had all previously developed methods of analyzing the problem, which they quickly applied. They simultaneously incorporated both the problem "representation" and the broad organizing principles characteristic of the Soviet grain experts. Although the lines of argumentation that appeared to be built into their method were generally not fully articulated (perhaps because the other experts in the group already knew the arguments), they were readily capable of such articulation if asked. One member started analysis with an overarching conception of the criminal law based on notions of culpability and free will and then quickly analyzed the problem within this structure. Another member had a fully developed structure for dealing with such problems, including accompanying lines of argumentation, and merely plugged the facts into the calculus. Another went quickly back and forth between knowledge of the doctrine that was used to define the problem and the general purposes and policies that, in his view, govern the criminal law. A final "expert" immediately saw whole "patterns" of issues and arguments involving intoxication and spent the time weaving together the patterns into a whole, using his perceptions of the purposes of the criminal law. In short, the experts "saw"—or could construct—a coherent whole that was triggered by and transcended the facts, into which the facts could be fit to arrive quickly at an overall solution. In addition to working quickly, the expert group worked with apparent ease and enjoyment.

Of course, like the political scientists who were not experts on the Soviet Union, the law faculty nonexperts were also really experts. They knew their task and what an analysis should look like. They knew that they should look for broad policies, make pro and con arguments, match facts to "elements," look for defenses. And, to some extent, they achieved this. In some significant sense, however, their approaches were overall a bit haphazard. They were not sure where to start; many felt confused without a framework within which to process the information. They tended to focus on the more concrete, surface features of the problem, like the nonexperts in the Soviet grain problem. People, after all, deal with what they "see," and, unlike the experts, the surface was principally what they saw. They focused on the criminal charge. They "collected" bits and pieces of criminal law from their memories and tried to piece them together with the facts. They went from known categories such as *mens rea* and looked for general policies but were not completely clear where to put the results of their analysis. Some even analyzed the problem in terms of what they found to be "fair" in this particular case or based their analysis on a legal structure from a subject area more familiar to them. Thus one member reconstructed the problem into an evidence problem: "It's all inadmissible hearsay. No liability." Overall their work was difficult, slow, and for many seemed to promote anxiety (one group acknowledged "total panic" when they first began their analysis).

Like the political scientists who were not Soviet experts, the nonexperts in our exercise knew what they should be doing but were faced with a number of pieces (facts, doctrine, policy) that they did not seem to be able to fit together easily so as to form a solution. They were not lacking in analytic ability; they simply did not know enough.

Out of the groups' experiences, the law faculty members at the University of Puget Sound came up with the following tentative ideas, speculations, and perceptions, based on the theory that the difference in expert and novice performance is accounted for by the difference in expert and novice schema.

Idea 1: Start With the Novice's Schema, Then Work Towards Ours

Professors seem to be telling students, "Here I am, see if you can get here." If, however, thinking like an expert is principally a function of adding general reasoning skills to a vast, complex expert knowledge base or schema, we might focus more on students' existing schemata and build from their world to ours, articulating how our schemata converge and diverge from theirs.[22] Such an effort would be facilitated if we began to recognize that nothing is "obvious," that behind every obvious concept is a complex set of assumptions, historical knowledge, and mental procedures. Think, for example, about how much underlying knowledge and understanding is required for one to "simply" state the holding for a case—*Lochner v. New York, McPherson v. Buick*, any case. As another example, consider the standard of review that an appellate court uses when it reviews a jury verdict for "sufficiency" of the evidence. We all know that this involves a legal determination ("no reasonable juror . . .") rather than the appellate judges' personal views on how they would have decided the case. We are surprised when our students fail in class discussion to apply such an obvious concept even though it appears in their notes and may have been committed to memory early in the semester. Underlying the "obvious" concept, however, is an entire body of ideas about the theoretical relationship between the trial and appellate courts, issues of competency (e.g., the appellate court is generally not in a position to judge credibility), matters of policy (e.g., we do not want citizens serving on juries to think that the results of their efforts to reach a verdict can be routinely second-guessed), and so on. (Of course, depending on the course and available time, many teachers would delve into the ideas that underlie this aspect of appellate review when they first introduce the concept.)

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22. Similar suggestions are made by Glasser, *supra* note 2, at 101; James Boyd White, Doctrine in a Vacuum: Reflections on What a Law School Ought (And Ought Not) To Be, 36 J. Legal Educ. 155, 164–65 (1986) (begin with analogies that are drawn from the students' everyday lives). Of course, even the traditional law professor (at least the good one) begins with a hypothetical that is likely to reflect some part of the world with which the student is familiar ("imagine you're looking to buy a dependable used car"). See also Bergman, Sherr & Burridge, *supra* note 1 (present students with everyday situations that are analogous to the legal situation the instructor wants to discuss; e.g., first have students interview for a companion on a trip as a prelude to working on formal voir dire, *id.* at 547).

Idea 2: Employ Techniques to Determine the Novice's Schemata

If we want to begin where the students are rather than make them begin where we are, how can we determine what they are "seeing" when they encounter problems in our world? There seem to be a number of techniques that could be used to get a sense of their existing schemata. Ask them directly. Or try more indirect means: require student journals; take five minutes at the beginning of class for students to write their thoughts on a topic and five minutes at the end to write their thoughts after it has been discussed. We should ask ourselves, "In order to give that answer, how must this student see the world of the legal domain?" Early in the semester let students ramble on and only ask "why" questions to collect data that expose their assumptions about law, the texts (cases, statutes, etc.) with which they come in contact, and the subject area; use Socratic questioning to locate areas in which they have a general "problem" in analysis.

Idea 3: Provide a Series of Tentative Structures

Even in our own faculty exercises, confusion was engendered when nonexperts lacked a structure for dealing with the disparate information involved in solving a legal problem. The experts, of course, either quickly constructed a sufficiently expansive structure or already had a sophisticated template in their heads. Although students cry out for such a structure, we cannot really provide it. First, it would not make sense to them if we gave it, because it would be a "code" representing a complex mental process of selection and analysis. Second, "putting it all together" (usually at exam time) is one of the more significant learning experiences in their education. We could, however, initially provide a very simple provisional structure, break down the structure, and replace it with a more sophisticated one, and so on.[23] Then the students would always have a structure within which to operate.

Idea 4: Recognize That You May Be Inadvertantly "Hiding the Ball"

Schema theory provides two insights into this constant student refrain. Some professors have a "private schema" in their subject area that they never reveal to their students (e.g., antitrust is to be analyzed as a tort, or antitrust is to be analyzed purely as an economic problem). All their questions and attacks are based on this undisclosed, value-referenced structure. Thus, students keep getting the sense that somewhere, lurking under all of this, is "an answer." (Of course, for the professor, there really is.) This kind of professor, however, is probably the exception. A more common cause of the "hidden ball" may come from the very nature of expertise. The expert's schema provides elements that are not literally on the surface of the problem statement. The novice, however, only sees the concrete surface elements. For example, in class the professor posits a

23. This parallels a suggestion made in Glasser, *supra* note 2, at 101, that we "provide a beginning knowledge structure . . . by teaching temporary models as scaffolds for new information."

contract between A and B, adding that now B claims that she was joking. While students grapple with "it isn't fair to A, he thought it was serious" and "it isn't fair to B, she was joking," with perhaps a little "I don't believe B" thrown in, the professor sits comfortably back with the full historical debate between the objective and subjective theories of contracts in mind. Without exposure to the objective and subjective theories of contracts, there is of course no reason for the students to think that the professor's questions pertain to anything other than joke contracts. If the assigned textual materials do not refer to the theories, the students do not have enough information to come up with the type of answers the teacher seeks, although (in theory perhaps) if they think long enough, they might be able to arrive at the analysis—maybe. Therefore, as a check, the professor may want from time to time to ask him or herself, "Is it really in the case?"

Idea 5: Fill in the Students' Knowledge Base

The suggestions that follow assume that although students will generally work through analyses on their own, the professor might with some regularity provide students with necessary background information. Ask yourself, "What do I know that is not in the text that they will need to answer the types of questions I intend to ask?" Thus, in a discussion of FAA regulation in an administrative law or regulated industries class, you may want to provide both information about the regulated industry (i.e., the airlines) and some general history about government regulation of the transportation industry. At other times, you might do a sample analysis for the students, articulating the multiple elements of your knowledge base (facts, procedures, analogies, etc.) that you needed to incorporate in order to analyze the problem fully. This will also let students "see" what an expert analysis looks like. Finally, you could "brainstorm" with your class through an entire area of law (e.g., third-party beneficiary) *before* looking at any texts. (This will also reinforce the students' ability to use their imaginations, an ability some find central to the sort of "informal reasoning" we use in law.[24]) Throughout the exercise, you could supply information from your knowledge base as needed to keep the exercise progressing. At an appropriate point in the exercise you could interject, for instance, "Courts in this area have usually done such and such. Can you see why? What effect would this line of decisions have on your previous analysis?" By the conclusion of this exercise, you should have filled in a full "grid" or "map" of the area with various approaches, consequences of each approach, arguments for and arguments against (involving a variety of levels of argument—policy, practical, common experience, human behavior, use of rules, counter examples, and so forth). You can then begin analysis of the cases in the area. All the "moves" in response to your questions should be apparent from the grid or map, and students will be able both to "see" what a fully developed schema looks like and to appreciate what it means to have such a structure for dealing with an area. More simply, you can provide information about the knowledge base of your subject area by choosing a case book that is filled with explanatory materials.

24. See *supra* note 12.

Idea 6: Point Out Recurring Patterns of Reasoning

Legal experts rely on recurrent patterns of reasoning, or "moves." When the opportunity presents itself in class, the professor might explicitly point out and label the mode of argumentation or rhetorical strategy that is involved in particular analysis. Among possible examples are a "bright-line" analysis (with accompanying list of practical and theoretical justifications) to counter an individually discriminating analysis; a "yes-but" rhetorical strategy, in which one accepts the opposition's premises but disputes the conclusion ("We agree that the pretrial publicity in this case is problematic, but we do not believe a change of venue is necessary; extensive voir dire for any pretrial publicity will suffice to insulate defendant from prejudice"); a "for purposes of" analysis, in which one argues that facts fall under a legal category for some purposes but not for others ("Although a motorhome may be a vehicle for purposes of licensing, because of its essential character it is 'home' for purposes of the Fourth Amendment"[25]).

Idea 7: Use Clear Rhetorical Contexts

Novices do not have rich schema to provide clarity for instructions that are not fully articulated. In class or on an exam, consider providing the students with clear *roles* that give them a context for their prospective answer. Also, make sure they know the meaning of the roles ("You are an appellate judge" suggests, for instance, applicable standards for decision making). In short, try to make the rhetorical situation clear so that the student knows exactly what is expected. Otherwise the student is likely to respond to surface features of the question and may not find sufficient information to "fill in" the particular context you intended.

Idea 8: Teach More Doctrine and Doctrinal History

We tend to disparage teaching "black-letter law," priding ourselves on teaching how to "think like a lawyer" and how to work through theoretical approaches to our areas. But schema theory seems to indicate that one needs a rather substantial knowledge base before one can begin sophisticated analysis. Lectures, computer programs, assignments in treatises, and other methods can provide the necessary doctrinal base.

Idea 9: Reduce Emphasis on Student Evaluations

Let us briefly shift from the implications of schema theory for teaching to its implications for the evaluation of teaching. Novices in a field tend to focus on the concrete and find it difficult to appreciate theoretical approaches to a subject. Because students lack a full sense of the field or a point of reference outside of their own comfort or discomfort, their evaluations of the quality and depth of presentation seem completely inappropriate. Although professors can learn how the class perceives them

25. But see California v. Carney, 471 U.S. 386 (1985) (motorhome a vehicle for purposes of Fourth Amendment).

from evaluations, it seems misguided to use them (especially those of first year students) for any other purpose.

II. Why Do Students Give So Many "Off the Wall" Answers?

As a starting point, we must recognize that our students generally possess coherent schemata that have served them very well in their lives. Some even possess expert schemata from another domain. But these are not our schemata, and we insist that while in our house they play by our rules. Because we want legal novices to adopt our schemata, we encourage them to change their own (at least while in our classes).[26] Some understanding of current thinking on schema change may therefore be helpful.

When faced with new information, people normally tend to do one of two things. They can incorporate the information into an existing schema ("assimilation"), or they may actually change their schemata to account for and deal with the new information ("accommodation").[27] When faced with a significant challenge to an existing high-level schema in an academic context, however, the individual will tend to resist the change.[28] First, the student may continue to reason from an existing schema and will therefore give answers that are consistently unacceptable and even "off the wall." (Recall how in our group exercise, one faculty member converted the criminal law problem into an evidence problem. Although coherent within the structure of evidence, the analysis constituted a total failure to deal with the issues within the schema of a criminal law class.) Second, the student may assimilate the contrary information into existing schemata. This is possible because significant schemata possess great powers of assimilation ("The exception proves the rule"; "They're just using technical terms"; "It's really no different than. . ."). Third, the student may develop an independent schema to deal with the new world and keep it separate from the old.[29] Such a strategy may even give the illusion that the student has actually adopted the instructor's schema.[30]

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26. "Schema change is the sine qua non of the acquisition of knowledge as opposed to the mere aggregation of information." Anderson, *supra* note 2, at 429.
27. The concepts of "assimilation" and "accommodation" are based on the theories of Piaget. See *id.* at 419.
28. *Id.* at 425–27. Law school is surely the sort of challenge that will provoke many students to resist. It puts at risk the ways they previously have viewed ideas, what they consider legitimate bases for decisions, how they think about human relations, etc.
29. In *One L* (New York, 1977), Scott Turow writes: "[T]he law as a way of looking at the world and my own personal way of seeing things could not be thoroughly meshed . . . I would have to learn those habits of mind without making them my own in the deepest sense." *Id.* at 86–87. Cf. Elkins, *supra* note 1, at 44 (some students deal with law school by trying to "compartmentalize" it from the rest of their lives).
30. See Anderson, *supra* note 3, at 428:
    > People attempt to preserve cognitive consistency . . . However, the last thing a person will do is make a fundamental change in schemata. The first lines of defense are to counterargue within the current framework . . . ; to treat anomalies as the exceptions which prove the rule; or to keep incompatible systems of belief separated. Driver . . . concluded on the basis of her studies with high school physics students that "The belief system they use in school to pass examinations and satisfy the teacher . . . may never be related to that which is used in everyday experiences."

The following faculty ideas are based on the theory that fundamental schema change is difficult and will often be resisted with a variety of strategies.

Idea 10: Avoid Issue-Spotting Exams

Rather than changing their old schemata when confronted in a school situation with a new area of expertise and corresponding new schema, students can build schemata within which to play the "school game" that are separate from both their own schemata and the schemata required for success in our expert legal domain. Issue spotting, in contrast to issue development and full dialectic analysis, is only a portion of the expertise of legal analysis. One can memorize an outline, list issues, and get a passing grade on an issue-spotting exam without ever confronting how a legal expert analyzes a problem. Although issue spotting is an important skill, tests should also include the types of case and policy analyses with which most of us fill a large portion of our class time.

Idea 11: Use Schema-Change Theory to Identify and Assist Students at Risk

Schema theory suggests that two types of student will have the greatest difficulty in law school. First are those who have a very strong emotional investment in their previous schema (and do not, for whatever reason, develop an independent "school game" schema to deal with the tension). Second are those who come into law school with a "knowledge base" from a social, political, and economic world that does not adequately provide the assumptions underlying the policies and argumentation in the various doctrinal areas. In fact, the two types may well be related—the more alien the world underlying the cases is to one's own, the greater the inclination to hold on to one's previously acquired approach to the world. We should, therefore, watch for inadequately prepared students and, when we identify them, in addition to providing traditional tutoring in legal doctrine and reasoning, we should help focus them on "filling in" their knowledge base with the cultural assumptions that underlie the law. (They should certainly not be discouraged from questioning those assumptions, but they must be aware of them first.) Thus, students who are not familiar with the formal, middle-class commercial world may need to be given an explicit appreciation of the perceived role of private law making in our economic system so that they can meaningfully comprehend the value courts place on encouraging such private contractual arrangements and the hesitancy of courts to look too deeply into the fairness of private bargains. Similarly, the young law student who has never had to lease an apartment—or who has never even seen a lease—might be asked to discuss the experience with those who have so that the concept of unconscionable clauses is more than a mere

abstraction.[31] Although identifying the gaps in the students' knowledge base may initially be difficult, if the enterprise is pursued over time, recurring patterns of knowledge deficiencies should emerge. Some students, however, may possess the knowledge base but psychically resist the law school schemata; they may want to sort out their feelings in some form of counseling.

III. Why Do the Skills of Students Who Have Succeeded Elsewhere Break Down in Law School?

Developmental psychologists find that children (and adults) pass through predictable developmental stages.[32] Basing his theory on this body of work, Joseph Williams[33] has developed an analysis that is helpful in understanding the movement of novices as they pass into and through a community of expertise such as law school. Unlike the clear, continual path of growth posited by his developmental predecessors, however, Williams sees acculturation as a recurring process, repeated each time we enter a new expert community (or even a new subspeciality of that community).

According to Williams, when novices enter an unfamiliar expert "knowledge community" (i.e., a group that shares a common knowledge base), they experience a significant degeneration of their existing skills, such as the ability to produce clear, logical writing or even to apply commonsense reasoning to solve a problem. There is simply too much that is new to be assimilated all at once, and their old skills suffer. Perhaps also, as we see with beginning law students, novices begin to lose confidence in their reasoning abilities during the initial acculturation process—and no one can think clearly without self-confidence. Acute trauma routinely accompanies the process of trying to assimilate the vast expert knowledge base of which novices only grasp unconnected bits and pieces.[34]

According to Williams, novices pass through developmental stages analogous to those research psychologists find for the cognitive development of children. Novices thus begin again at the stage of concrete mental processes and only later become capable of abstraction and mental fluency. (Note that such a focus on the "concrete" aspects of a problem characterized the nonexperts in both the Soviet grain experiment and our law school exercise.) Williams—reformulating the developmental frameworks of the cognitive psychologists Kohlborg, Perry, and Piaget—posits three stages in

31. My thanks to Pierre Schlag for the lease example.
32. See discussion of developmentalists Erikson, Piaget, Kohlberg, and Perry in Elkins, *supra* note 1, at 30 n.9. For an argument disputing the applicability of Kohlberg's theory of moral development to women, see Carol Gilligan, In a Different Voice (Cambridge, Mass., 1982).
33. Professor Williams of the University of Chicago was the main presenter at the faculty workshop. See *supra* note 2.
34. A brief observation on law students as novices is in order. Law students enter at the graduate level and therefore receive training that focuses on high-level problem-solving skills. Unlike any other graduate discipline of which I am aware, however, most law students have virtually no undergraduate exposure to the vast underlying knowledge base of the legal community. (Compare graduate students in history, chemistry, mathematics, engineering, or medicine.)

the novice's journey of acculturation into an unfamiliar expert knowledge community: presocialized, socialized, postsocialized. "Presocialized" conjures up the image of most first-year students[35]; socialized, that of many third year students and young attorneys; and postsocialized, with that of very good, experienced attorneys.[36] In fact the principal force of his ideas for law school teaching comes, I believe, from the fact that what he describes comports with what we actually see in our students.[37]

In the presocialized stage, the student is primarily aware of what is concretely experienced. (So, in law school students string together blackletter law terms when responding to questions in class—they grab on to whatever is most accessible.) The student has no easy sense of local conventions, tacit understandings, principles, or assumptions. The student also lacks a working knowledge of the history of a field and its debates. Overall, the student is probably insecure and therefore likely to overcompensate, to seek unequivocal knowledge, and to avoid ambiguity or uncertainty. In class, the student wants the law professor to provide the "answer." To return to our example of the drunk ambulance driver and the unfortunate Mr. Smith,[38] the presocialized student's analysis of the liability of the original driver might be: "No proximate cause because of intervening cause of ambulance driver being drunk."

In the socialized stage, the students is able to behave in accord with conventions, tacit understandings, and principles but is perhaps unable to articulate them. The student possesses a working knowledge of the history of the subject matter and its debates. Further, the student is able to "sound" like an insider and knows what to say and, perhaps more importantly, what not to say. Socialized students want to behave in appropriate ways, and because they are able to live with more ambiguity and uncertainty, they are less likely than the presocialized student to overcompensate. In the ambulance hypothetical, the socialized student's analysis of the liability of the original driver might be: "Lack of legal causation. Although, but-for cause exists, it was not foreseeable. Although traffic accidents and even negligent driving by an ambulance driver are foreseeable, an ambulance driver who is drunk on duty is different . . . "

In the postsocialized stage, the expert (it is hard to imagine a student reaching this stage) is aware that conventions are only conventions, not rules, that principles are only instances of higher principles, and that what

35. Once in the new culture of "actual practice," with its additional knowledge base, a brief return to presocialized behavior will often ensue.

36. Cf. Calhoun, *supra* note 7, at 511 (quoting Thomas Kuhn) [footnotes omitted]:
    [T]he student becomes "an inhabitant of the scientist's world, seeing what the scientist sees and responding as the scientist does," only after a "transformation of vision." When a student "views the situations that confront him as a scientist in the same gestalt as other members of his specialists' group" and has "assimilated a time-tested and group-licensed way of seeing," he has acquired a set of intuitions that are the "shared possessions" of scientists.

37. The developmental description that follows is based on a handout that accompanied Professor Williams' talk at the November 1986 conference on Higher Order Reasoning at the University of Chicago. It is slightly augmented for the purposes of legal education.

38. *Supra* text following note 8.

is unsaid can be said. Postsocialized individuals are able to articulate all this. They have a working knowledge of history within larger history, and of relations of their subject matter to other fields. They are able to sound like insiders but do not feel compelled to do so, because they value communication over style.[39] Finally, they are able to live with uncertainty, multiplicity, and ambiguity, and yet they are confident in their choices. In evaluating the ambulance driver hypothetical, the person in the postsocialized phase may respond quite differently from those in the presocialized and socialized stages:

> The question posed by this hypothetical could be formulated in this way: Is the initial driver responsible for the harm that ensues from the subsequent drunken ambulance driver's negligence? Answering this question depends upon a series of variables including, for instance, cognitive, normative and rhetorical commitments. On the cognitive plane, the more one sees drunk driving as aberrational, unusual conduct, the less easy it is to link the subsequent harm to the initial negligence. On the normative plane, the more one views drunk driving as a deliberate wrong, a decided departure from clear generally observed norms, the harder it is to situate the moral origin of the subsequent harm in the initial defendant's negligence. Finally, on the rhetorical plane, the more the initial negligence is distanced (temporally, spatially or ontologically) from the subsequent drunk driving, the harder it is to attribute liability for subsequent harm to the initial negligence. In terms of vocabulary and grammar, the law of torts tends to treat these types of problems as issues of causation—specifically, the doctrines of proximate cause. But within and between these various proximate cause doctrines, cognitive, normative, rhetorical and other variables play significant roles.[40]

Williams gives the notion of "conventions" particular attention in his discussion of all three developmental stages. Expert knowledge communities possess tacit conventions that determine the discourse of the community.[41] The conventions, which comprise one aspect of an expert's schema, determine how evidence can be selected, used, and presented, and generally cover what *counts* as a point, why one point is worth making rather than another, and what can and cannot be said in support of a point.[42]

Novices rarely know or perceive the conventions, but not because experts are unwilling to articulate them. Rather, experts themselves are frequently not consciously aware of them—they just follow them. Most significantly, perhaps, conventions differ from discipline to discipline (e.g., a good approach for a physics paper may be unacceptable when applied to biology).[43] Therefore, there is no "universal audience" toward which we

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39. Most of us have experienced sending an article written in simple, straightforward language to a student-edited law review only to have it returned in formal "professional-sounding" prose.

40. These are the postsocialized words of Pierre Schlag, who teaches a class in torts.

41. Cf. Glasser, *supra* note 2, at 99: "Effective thinking is the result of 'conditionalized' knowledge—knowledge that becomes associated with the conditions and constraints of its use."

42. Perkins sees the general understanding of what is and is not appropriate evidence as a type of "judgment." Perkins, *supra* note 2, at 25.

43. For a thorough discussion of the significance of disciplinary differences, see Roger Peters, Comparing Generic and Disciplinary Critical Thinking (a paper presented at the November 1985 conference on Cognitive Frameworks and Higher Order Reasoning at the University of Chicago). On the importance of disciplinary differences for academic writing, see Elaine Maimon, Maps and Genres: Exploring Connections in the Arts and Sciences, *in* Composition and Literature: Bridging the Gap, ed. Winifred Bryan Horner, 110 (Chicago, 1983).

present our central points. Rather, each discipline (expert knowledge community) is defined by its goals and adopts conventions that serve its needs. A student who does not follow the tacit conventions of a particular community, however, will almost always be penalized, while the student who follows the convention will often be rewarded in a manner disproportionate to the substantive quality of the student's work.

The students thus must enter a world with new vocabulary, new procedures, new teaching and reasoning methodologies, as well as unarticulated rules and norms on which they are judged and evaluated. Is it really so surprising that some experience emotional trauma as they proceed?

The following faculty ideas are based on the theory that novices pass through predictable developmental stages when they enter an expert community.

Idea 12: Be More Supportive

Because the law student must simultaneously try to comprehend new vocabulary, teaching methodology, conventions, information, and rules of discourse, and adapt to new people and places, the skills they bring to law school may degenerate. Perhaps we need to offer more support and encourage greater trust during the initial stages of instruction than we do now. To foster students' sense of trust and self-confidence, we might even want to invite them to experiment with their thought processes at the beginning.[44] Although pressures are commonplace in the practice of law, it does not logically follow that the best way to prepare students for law practice is to put them under anxiety-producing pressure from the start. Further, even if one intends to replicate the stress of the courtroom in a beginning class, the simulation will be flawed. The anxiety of the beginning law student derives from lack of knowledge and from the confusion the lack of knowledge causes. The practitioner's sense of pressure, however, generally has its origins in knowing what is at stake and what needs to be done to accomplish the task.

Idea 13: Simplify Initial Tasks, Then Build

We should perhaps also consider simplifying initially both the number and complexity of tasks required for any particular assignment, building incrementally to higher levels of complexity as the course progresses. Currently, the first case in a casebook raises issues as difficult as the last (and may not even be in modern English). If novices really do progress through developmental stages, then perhaps we should follow the elementary education model: start simple, then build. Begin, for instance, with a hypothetical without cases (so students will not need to deal with the initial

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44. According to Erik Erikson's theory of psychosocial development, young children need to develop trust and then initiative. See, e.g., Erik H. Erikson, Childhood and Society, 2d ed. (New York, 1963). This is not to suggest that our adult students are literally going through the developmental processes of preschoolers; the needs that must be fulfilled for a child to adjust successfully to the biggest knowledge community of them all—to "life" as a self-aware being—may, nevertheless, be instructive.

task of "decoding" the case) and reason through the situation, using their current knowledge, common sense, and imagination. As they work through the hypothetical, give them at appropriate junctures a piece of doctrine or an accepted policy and ask, "How does that affect what we've been saying?" Similarly, for statutory interpretation, begin with a four-line statute, then build to six, ten, etc. Do not start with the IRS Code. Finally, recognize that almost from the beginning much of our questioning focuses on the "evaluative" level (i.e., making judgments based on internal evidence or external criteria). The work of educator Benjamin S. Bloom and his associates on evaluating instructional outcomes puts this last observation into perspective. It also supports the notion that learning evolves in stages.[45] Bloom's taxonomy contains six hierarchal levels, hierarchal because each successive level requires assimilation of the previous levels. Evaluation is the *highest* level (i.e., knowledge, comprehension, application, analysis, synthesis, and then evaluation).[46] Maybe we should drop back a few levels at first, and if we will not abide by the adage, "learn to walk before you run," at least we might feel bound by "learn to walk before you run the 180-yard low hurdles." What we are now doing may be like discussing French philosophers from untranslated texts with students who are just beginning to learn the language. (Take-home sets of problems, crafted to reflect a graduated range of complexity in the subject area, can offer a good tool for assessing how quickly the students are catching on, and therefore how fast to progress.)

Idea 14: Recognize That You Might Be "Hiding the Ball" (II)

We have already discussed "hiding the ball" in the context of schema theory (see Idea 4). A further gloss on the subject emanates from developmental theory. If we are making judgments based on tacit conventions of which even we are not consciously aware, then it is little wonder that students believe that we are hiding something from them. Their error then is not in believing that something is hidden but that we are doing it intentionally.

Idea 15: Articulate for Students Their Progress in the Acculturation Process

The "grid" or "map" discussed in Idea 5 can serve an additional purpose. Once the map is developed, the instructor can focus students on the portion they should be able to manage by themselves right away, in a few weeks, and at the end of the semester. How much progress they should reasonably expect of themselves as they move through the aspect of the expert community that the course reflects should then be clearer.

Idea 16: Describe Why Answers Are "Good" or "Bad"

Sometimes, during the beginning of the first year, we could give examples of what we consider good answers—maybe from two opposing

45. See Bloom, *supra* note 1.
46. *Id.* at 18.

positions—and explain why they are "good" in terms of our discipline. Because "bad" answers may make perfect sense in a community other than law, we might also analyze them and explain what is wrong with them in terms of our legal community.

Idea 17: Ascertain and Articulate the Conventions

If we base much of our evaluation on the students' ability to follow the tacit conventions in legal discourse, then perhaps we should attempt to ascertain and articulate the conventions for ourselves and our students. We might also discuss whether law and other fields of expertise maintain such conventions as *deliberate* obstacles to entering the knowledge community.

Idea 18: Teach a Subject Area As a Conversational Language

If entrance into a community of expertise involves knowing what can and cannot be said and how to say it, then the process is similar to learning a language. One could teach a law course as a conversational language is taught, by immersion.[47] Talk about cases as you would to practicing lawyers, slipping in references to facts, tactics, statutes, and procedures as the conversation proceeds. Provide "vocabulary" lists (i.e., terms that students must be able to understand, as opposed to define, in the context of a conversation about the particular subject area). Help students appreciate the "grammar" of the language. Law can be seen as having a strict grammar that provides rules for what can and cannot be said. For example, one basic rule is: No factual information may be put forth unless it can be linked to some relevant legal structure. The structure itself, of course, may be derived from a range of legal sources—accepted case doctrine, broad interpretation of a statutory provision in the light of some general policy, a new legal theory based on perceived trends in other areas decided by the court. According to the first basic rule, one cannot say, "The defendant was drunk" (or bring forth information to that effect), unless one also ties the statement to a legally appropriate category, such as "it affects the witness's ability to perceive" (a legal category derived from cases and statutory codes for evidence rules on impeaching the credibility of witnesses), or "it was negligent to drive in this condition" (derived from cases articulating the element of "breach" of a duty of care in a claim for negligence), or "so he could not form the specific intent to steal" (derived from the statutory elements of theft and cases that involve the defense of diminished capacity).

A second basic rule of the grammar is: One cannot assert a legal principle unless one also asserts the condition(s) predicate to relying on that principle. Assume a jurisdiction in which "unreasonable bail" is prohibited and in which the only purpose of bail is to assure a defendant's appearance at trial. In this jurisdiction, one cannot assert that a client's bail must be reduced under the legal principle prohibiting "unreasonable bail," unless one is also willing to state the predicate condition that a lower bail could assure the client's appearance. Likewise, one cannot say, "my client acted in

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47. See a similar suggestion in White, *supra* note 22, at 163.

self-defense," unless one also says, "my client used reasonable force" (reasonable force is a predicate condition of asserting the principle of self-defense). Our grammar has countless rules. As in any language course taught through an immersion technique, students will be lost for a while but then should make a qualitative leap in comprehension.

Idea 19: Have Students Write Short Responses in Class

Because the Socratic method, the prevailing paradigm for most law school classes, is predominantly oral, many law professors tend to overlook the possibilities for having students write in class.[48] If, however, students write short responses in class or write very short papers that they bring to class, their transition from novice to expert will be facilitated.

Writing allows all students in a class, not just the student in the "hot seat," to respond to the question or problem posed. Writing also allows students to place their response into a more clearly defined rhetorical context, especially if the assignment is carefully presented (see Idea 7 on using clear rhetorical contexts). Writing assignments can also allow the professor to see what analytical techniques the students are using at any given point in a course (see Idea 2 on determining the novice's schemata) and can at the same time permit students to "practice using the language" of a certain area of law (see Idea 18). Finally, writing may allow students to better confront the difficult transition from existing schemata to new ones. Writing allows the students to see their thinking "in front of them," where they can examine and reflect on it, rather than doing it only "in their head."

The length and kinds of writing assignments depend on their purpose in the context of the class. The assignments should probably not be graded—their purpose is to help students improve their ability to think in and use legal discourse, and in most cases they will not be used for evaluation, as examinations and seminar papers would be.

Idea 20: Provide for the Next Level of Acculturation (i.e, Practice)

Students will experience an analogous process of acculturation when they move out of the law school community into the community of practice. Whatever one's view of practice-oriented "skills" training in law school, one would have to agree that we should not actively *mislead* students about the nature of the practicing attorney's schema. Students need to know, for instance, that an advocate is apt not to ask, "What is the law?" as much as "What plausible interpretation can I make of this case that will support my client's position and resist attack by my adversary?" Students should also understand that advocates use ends-means thinking, starting with what they need to accomplish for their client and developing their positions and

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48. For a discussion of using writing in substantive law school classes, see Christopher Rideout, Applying the Writing-Across-the-Curriculum Model to Professional Writing, 1983–84 Current Issues in Higher Education: Writing-Across-the-Curriculum, No. 3, at 27, 29–31 (Washington, D.C., 1983–84); Philip E. Kissam, Thinking (By Writing) About Legal Writing, 40 Vand. L. Rev. 135 (1987). Cf. Teaching Writing in All Disciplines, ed. C. Williams Griffin (San Francisco, 1982).

supporting argumentation accordingly.[49] Students should realize that attorneys use law as a "guide" for developing and presenting facts far more than they use it for trying—as the students have in class—ultimately to resolve a dispute. Students should appreciate that facts do not appear as the frozen two-dimensional presentations found in appellate opinions. Rather, attorneys actively seek facts and develop, characterize, and subject them to evidentiary objections, and so on.

IV. Come to Think of It, Do We Do Anything Right?

I have not meant to suggest that legal education is seriously flawed. I hope, rather, that studying and evaluating current learning theories will help us teach even better. Although we have much we can learn from others in the teaching field, we have much we can teach. Our emphasis on students' active participation in their learning, our focus on solving ill-defined problems[50] (i.e., problems that are a challenge to define, that do not have "right answers," and that do not possess only one possible solution), our concern with thinking processes, and our use of questions to challenge assumptions correspond with much of the latest thinking in education. In fact, current experts view our principle methodology—the Socratic method—as a device teachers can use in the classroom to bring about the adoption of new schemata.[51] A dialectic method, because it employs opposing lines of argumentation and counterexamples, confronts the student's existing structures head-on[52] and leaves the student no place to avoid the tension between the competing schemata. Indeed, almost all the faculty ideas I have presented are basically "refinements" of our profession's basic teaching method.

Conclusion

Hardly a social encounter passes, whether a formal dinner party or a brief conversation with another traveller on an airplane or bus, without someone asking our occupation. Although many of us will respond "law professor" or "professor of law," and some "attorney and law professor," few if any will answer, "I am a teacher—I teach in the area of law." A variety of reasons could account for this. We think "professor" carries more status in our society than just plain "teacher." We think of ourselves not merely as teachers but as scholars. We teach a profession, not just a subject matter.

49. Analogous perspectives have been put forth by Anthony G. Amsterdam, Clinical Legal Education—A 21st Century Perspective, 34 J. Legal Educ. 612, 614 (1984).
50. For a discussion of the nature of ill-defined problems, see Robert J. Sternberg, Teaching Critical Thinking Part I: Are We Making Critical Mistakes? Phi Delta Kappan, Nov. 1985, at 194.
51. See Anderson, *supra* note 2, at 427–28; Glasser, *supra* note 2, at 101. For an interesting attempt to formalize the Socratic dialogue into a set of "performance rules" so that (eventually, in theory) such a dialogue could be carried on by a computer, see Allan Collins, Processes in Acquiring Knowledge, *in* Schooling and the Acquisition of Knowledge, ed. Richard C. Anderson, Rand J. Spiro & William E. Montague, 339 (Hillsdale, N.J., 1977).
52. Perkins sees the dialectic process as one of the main checks on imagination as it operates in informal reasoning. See Perkins, *supra* note 2, at 23.

Although each of these reasons may play a part, another explanation is far more rooted in our day-to-day view of our world. We simply identify with other law professors and, to some extent, practitioners. All too many of us have rarely thought otherwise, nor did our professors, nor our professors' professors. We have rarely seen ourselves as brothers and sisters to the elementary school teacher who surveys a room of miniature chairs and tables while dressing little people in costumes as part of a history lesson, or to the high-school or junior-high science teacher who explains why it is important to keep the beakers clean. The consequences of our failure to see the connection are perhaps far more significant than the reasons; for, in the process, we have also tended to cut ourselves off from the dramatically evolving body of knowledge that pertains to "teaching."

This article is then a call to our profession—a call to take pride in being teachers, a call to explore the rich body of information about education that exists in other disciplines, and a call to take this information and from it develop and share teaching approaches throughout the legal and the wider teaching profession.

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