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Recommended Citation

Anthony S. Niedwiecki, *Lawyers and Learning: A Metacognitive Approach to Legal Education*, 13 *Widener L. Rev.* 33 (2006).

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LAWYERS AND LEARNING: A METACOGNITIVE APPROACH TO LEGAL EDUCATION

ANTHONY S. NIEDWIECKI*

I. INTRODUCTION

Think about when you were in high school algebra class and were taught how to use the quadratic formula.¹ You were likely given the formula and then the teacher showed the class how to solve a quadratic equation using a couple of examples. The teacher then would assign the class several problems to practice using the formula. The typical directions for the problems would include: *Solve the following problems using the quadratic formula.* You (successfully or not) put the numbers into the formula and developed an answer. Most of us, however, were never explicitly told when or why to use the quadratic equation or how the equation was developed. If asked today how to solve a quadratic equation, most of us would reply, “That is why I went to law school!”

This process of rote practice is often replicated in many first year law classes. In doctrinal classes,² the students are told to read a case and fit it into a formula—a case brief with the facts, holding, court’s reasoning, and so forth. Based on their case briefs, the students come to class to discuss the cases they have read and how to apply those cases to new hypothetical situations. In fact, most doctrinal professors likely rely on this form of the Socratic method when teaching their law school classes.³ Most professors probably believe that this method of instruction helps students to “think like a lawyer,” with the goal being that the students will eventually ask themselves similar questions

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1. The quadratic formula is used to solve certain quadratic equations. The formula for solving $0 = ax^2 + bx + c$, where a , b , and c are variables, is:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

2. I define doctrinal classes as those that are not primarily skills-based. Doctrinal classes include contracts, property, civil procedure, etc. Skills-based classes include legal research and writing, mediation, trial advocacy, etc. By separating the two types of courses, I neither mean to imply that doctrinal courses do not teach skills, nor that teaching analysis and synthesis are not skills. Rather, I distinguish the two types based on the main focus of the courses—to teach the substance of the law or to teach MacCrate skills. See Michael Hunter Schwartz, *Teaching Law Students to be Self Regulated Learners*, 2003 LAW REV. MICH. ST. U. DET. C.L. 447, 467 (2003) (discussing the MacCrate Report).

3. Steven I. Friedland, *How We Teach: A Survey of Teaching Techniques in American Law Schools*, 20 SEATTLE U. L. REV. 1, 12-13 (1996).

when they analyze cases on their own.⁴ From the students' perspectives, the law school class may resemble their high school algebra class—the students are likely not sure exactly *when*, *why*, or *how* to apply the line of questioning they learned in their doctrinal classes, and they resort back to simply mimicking what happened in class. This often prevents a student from being able to fully transfer the in-class experience to new situations. This relatively common use of the Socratic method relies on what I call “implicit teaching” because the purpose of the questioning is never explicitly explained to the students, and there is generally no questioning that delves into the explicit thought processes of the students.

A similar problem occurs in skills-based courses where the instruction is generally focused on how to perform a particular legal task. For example, in legal writing courses, students are told how to organize their legal analysis using the “IRAC” format (issue, rule, application, and conclusion) or some variation.⁵ The focus is rarely placed on the underlying theory of why this organization is best, or when to apply exceptions to this rule. I describe this mode of instruction as the “how to method” of teaching because of its reliance on teaching students various steps to completing a particular legal task. With a reliance on using the Socratic method in doctrinal classes and the “how to method” in skills-based courses, most students are not effectively taught how to transfer the learned knowledge and skills to new and novel situations.

Our current structure of legal education seems to mirror the type of learning that occurred in our high school math class—instruction followed by rote practice. To overcome this pattern of teaching that has been part of the law school curriculum for decades, more has to be done to integrate learning theory into the law school curriculum. By introducing learning theory into the law school curriculum and specifically teaching the students how to learn, law schools can extend the one-dimensional learning that is currently central to the law school curriculum to one that focuses on teaching students to transfer learned knowledge and skill to new and novel situations.

Although an increasing number of legal education scholars have begun discussing learning theory as it relates to law school education and teaching, they have just touched the surface of the discipline. Much of this literature has only focused on what we as legal educators can do to make the classroom better suited to the different learners that come to law school.⁶ Many

4. Nancy L. Schultz, *How Do Lawyers Really Think?*, 42 J. LEGAL EDUC. 57, 57 (1992) (claiming that the goal of a legal education is to teach students to think like lawyers); see also Paulette J. Williams, *The Divorce Case: Supervisory Teaching and Learning in Clinical Legal Education*, 21 ST. LOUIS U. PUB. L. REV. 331, 341 (2002) (discussing the objective of teaching first-year students to think like lawyers using legal analysis).

5. See, e.g., HELENE S. SHAPO ET AL., *WRITING AND ANALYSIS IN THE LAW* (rev. 4th ed. 2003).

6. See, e.g., M. H. Sam Jacobson, *A Primer on Learning Styles: Reaching Every Student*, 25 SEATTLE U. L. REV. 139, 141 (2001); Schultz, *supra* note 4, at 67-72 (offering different

educators, for example, have proposed different techniques to make the classroom more inviting to every student regardless of how they individually learn. Adapting law school classrooms to every learning style, although a good step toward making the classroom more effective, misses the main purpose of trying to teach students how to become lawyers—to be able to practice law without constant instruction. Law school education, therefore, should begin to focus on teaching law students how to learn.

The areas of learning theory and educational psychology, like many disciplines, have various and often complicated theories and approaches. There are, however, several general learning concepts that are widely accepted and universally applied in many educational environments. One of those theories that is most applicable to legal education is the concept of metacognition. Metacognition refers to the self-monitoring by an individual of his own unique cognitive processes.⁷ Generally, metacognition refers to having both awareness and control over one's learning and thinking.⁸ Specifically, learners must have awareness over what they bring to the learning experience, such as their own cognitive abilities, learning styles, and learning preferences. Controlling or regulating one's learning requires actively planning, monitoring, and evaluating during the execution of a cognitive task. By introducing the concept of metacognition into the law school curriculum, we can dramatically improve the students' ability to transfer and use learned skills in unique situations: "[M]etacognitive strategies provide the necessary format to promote learning not just for a test, but for a lifetime—not just for recall, but for lifelong logic and reasoning."⁹ Through the over-reliance on teaching through the Socratic method in doctrinal courses and the "how to method" in skills-based courses, law school education hinders a student's development of metacognitive skills, which are essential to a career that requires constant learning.¹⁰

This article will detail the concept of metacognition, how current law school teaching does not teach metacognitive skills, and how legal educators can incorporate metacognitive learning into the law school curriculum to help students better transfer knowledge and skills to the practice of law. Teaching metacognitive skills to law students should focus on explaining learning theory

approaches in the classroom that would provide for students to better understand the law and think like a lawyer); Filippa Marullo Anzalone, *It All Begins with You: Improving Law School Learning Through Professional Self-Awareness and Critical Reflection*, 24 *HAMLIN L. REV.* 324, 331-47 (2001) (explaining that teachers need to use self-reflective practice as teachers and to teach the students the process in order for them to integrate the students into the classroom based on their learning style).

7. Rebecca Jacobson, *Teachers Improving Learning Using Metacognition with Self-monitoring Learning*, 118 *EDUC.* 579, 581 (1998); Sadhana Puntambekar, *Helping Students Learn 'How to Learn' from Texts: Towards an ITS for Developing Metacognition*, 23 *INSTRUCTIONAL SCI.* 163, 165 (1995).

8. Hope J. Hartman, *Developing Students' Metacognitive Knowledge and Skills*, in *METACOGNITION IN LEARNING AND INSTRUCTION: THEORY, RESEARCH AND PRACTICE* (Hope J. Hartman ed., 2d prtg. 2002); ROBIN FOGARTY, *HOW TO TEACH FOR METACOGNITIVE REFLECTION* viii (1994).

9. FOGARTY, *supra* note 8, at xvii.

10. Schultz, *supra* note 4, at 65.

and modeling appropriate planning, monitoring, and evaluating techniques across the curriculum. Part II of this article details how law schools have been slow to integrate and apply learning theory to the law school classroom. Part III details the theory behind metacognition and how it differs from cognitive learning. Part IV explains how metacognition can be incorporated into the curriculum by first making students aware of their own cognitive abilities, learning preferences, and past academic experiences. This section will also detail how adult learners bring different strengths and weaknesses to law school, making the teaching of learning sometimes easier and sometimes harder. Part V will detail which cognitive skills are taught in law school and required of a lawyer. This section emphasizes the need to fully and explicitly teach the different types of reasoning required of a lawyer, which most students leave law school without fully understanding. Finally, Part VI details how law professors need to model appropriate metacognitive skills and learning across the law school curriculum in order to foster the transfer of cognitive legal skills to new situations and problems. This section also gives several suggestions on how to use technology to foster more effective metacognitive learning.

II. THE SLOW INTEGRATION OF LEARNING THEORY INTO THE LAW SCHOOL CURRICULUM

To be a law professor, there is generally no requirement that a person have any training in teaching. Law professors are most often hired because of how well they performed in law school, their potential for producing scholarship, or the practical experience they can bring to the classroom.¹¹ In my years of teaching, rarely have I seen any focus on whether a professor has been trained in how to teach, or whether a professor has any degrees in educational psychology, teaching, or learning theory. This general lack of experience and understanding of teaching and learning theory forces professors to teach like they were taught, or to make teaching decisions based on intuition instead of well-accepted learning theory.¹²

The problem of not integrating learning theory into the classroom is not just a law school problem. Surprisingly, there has not been much research on how to integrate learning theory in elementary and secondary education until the past few decades,¹³ let alone in college or graduate education. It was not until the early 1980s that educational psychologists and learning theorists

11. See Robert J. Borthwick & Jordan R. Schau, *Gatekeepers of the Profession: An Empirical Profile of the Nation's Law Professors*, 25 U. MICH. J.L. REFORM 191, 217-221, 230 (1991); Donna Fossum, *Law Professors: A Profile of the Teaching Branch of the Legal Profession*, 1980 AM. B. FOUND. RES. J. 501, 547 (1980).

12. See Anzalone, *supra* note 6, at 326.

13. See FOGARTY, *supra* note 8, at vii (stating how the "thinking skills movement" was only in its infancy in the early 1980s).

began studying how people learn to see if there were other methods for teaching.¹⁴ Most learning before the 1970s involved practicing skills through drills and repetitive experiences, much like the description of the algebra class. The idea was that learning occurred only after repetitive practice of skills. It is not until the past couple of decades that any serious attention has been given to applying learning theory to young students, and only very recently have law professors begun to discuss learning.¹⁵ Because learning theory was not prevalent in early education until recently, most law professors were taught using the repetitive practice of skills, which is how they will often teach if they have no real training in education.¹⁶

A. The New Focus on Learning Theory

Law schools and law professors are starting to follow the lead of other educators by seeing how learning theory can be integrated into the law school classroom. While law schools and professors are beginning to touch the surface of learning theory, it is usually only applied by individual professors without any real focus on how legal education needs to change and keep up with the development of educational psychology. Law schools have changed in only small increments over the past one hundred years, usually based in response to law firms' demands that students already have practice in basic lawyering skills before they come to work for the firms. The last real change in focus at many law schools came as a result of the MacCrate Report, which recommended that law schools incorporate what is now known as MacCrate skills.¹⁷ There has, however, never been a major change in the approach to legal education based on learning theory.¹⁸

14. Angela V. Cyr, *Overview of Theories and Principles Relating to Characteristics of Adult Learners: 1970s-1999* (Sept. 30, 1999), available at ERIC/EDRS, File No. ED435817, http://www.eric.ed.gov/ERICDocs/data/ericdocs2/content_storage_01/0000000b/80/10/93/44.pdf (giving a brief overview of education before educational theories were strongly developed in the 1970's through the 1990's).

15. See *infra* note 17 and accompanying text (discussing the wide range of attempts to integrate learning theory into the classroom and across the law school curriculum).

16. I do not intend to imply that repeating skills is a method that should not be used; rather, instruction should be supplemented with sound theories on how students learn today.

17. See Schwartz, *supra* note 2, at 467.

18. Although many professors have tried to integrate some learning theory into the classroom to teach to different learning styles, schools are only now beginning to try to look at ways to change the curriculum to help improve student performance in law school and on the bar exam. See Anzalone, *supra* note 6, at 326 (discussing how law professors need to reflect on their own learning styles and preferences to adapt their teaching to the multiple different learning styles that appear in law school classrooms); see also Jacobson, *supra* note 6, at 141. For example, at Nova Southeastern University, our faculty developed a Critical Skills Program that was integrated throughout the curriculum. One component of the program places first year students in a one-credit course that teaches them the basic skills of reading, studying, taking exams, and analysis. The goal is to give the students skills that they will use throughout law school as well as during the practice of law. The program was a result of a plan to improve the bar passage rate of our students.

The new focus on learning theory in some law schools and by a few law professors has probably been prompted by several factors, including fixing low bar passage rates, having to teach a more diverse student body, and addressing an increase in competition among the growing number of law schools.¹⁹ Many schools may have also been prompted by a perception that law students are less prepared out of undergraduate school, and students need to be given some basic instruction in reading, writing, and studying. The reality is that law students are different today than in the past, with the types of students going to law school changing dramatically over the past several decades.²⁰ In the past few decades, students in elementary and junior high schools have been taught reading in a way that has gone through a series of changes, as different generations are taught phonics while others are taught contextual reading.²¹ A recent study shows that the effect of this divergent approach to teaching reading may result in future students being less prepared to read for

19. Over the past several years, I have heard professors say that the way that we could improve our bar passage rate is to make our admissions standards tougher and begin admitting better students. Most schools, however, do not have the luxury of tightening their admissions standards with the increasingly competitive law school market. In Florida where I teach, three new law schools have opened in the past five years, with the possibility of more in the future. See American Bar Association, *ABA-Approved Law Schools by Year*, <http://www.abanet.org/legaled/approvedlawschools/year.html> (showing the Florida law schools admitted to the American Bar Association by year). See also Melanie Yeager, *Schools Work to Stay Diverse: State Admissions Can't consider Race*, TALLAHASSEE DEMOCRATE, Apr. 1, 2003, available at http://www.oneflorida.org/myflorida/government/governorinitiatives/one_florida/diverse.htm; Shelby Opper, *Bush Restores Florida A&M Law Program*, ST. PETERSBURG TIMES, June 15, 2000, at 7B, available at http://www.myflorida.com/myflorida/government/mediacenter/news_recent_news/am_law.html; Dianna Smith, *Law School Considers Move to Florida*, NAPLES NEWS, Dec. 28, 2004, available at <http://www.lawschool.com/floridamove.htm>.

20. See, e.g., JOHN C. BECK & MITCHELL WADE, GOT GAME: HOW THE GAMER GENERATION IS RESHAPING BUSINESS FOREVER 2 (2004).

And what our research shows is that this new generation is indeed different from the boomers—very different—in ways that matter throughout business. They have systematically different ways of working. They choose systematically different skills to learn, and different ways to learn them. They desire systematically different goals in life. The way that members of this generation think about their careers, their companies, and their coworkers is a long way from what boomers have come to expect. How hard this huge new cohort works, how they try to compete, how they fit into teams, and how they take risks—all are different in statistically verifiable ways. And those differences are driven by one central factor: *growing up with video games.*

Id.

21. Tina Mayfield & Steve Poulter, *On the Road to Success: Assuring Students Can Read and Write by the Eighth Grade* (July 8, 2002), available at ERIC/EDRS, File No: ED467287, http://www.eric.ed.gov/ericdocs/data/ericdocs2/content_storage_01/0000000b/80/27/a1/11.pdf (emphasizes that reading and writing should begin to be taught in kindergarten).

understanding, think critically, and write with clarity.²² Also, a large focus in elementary and secondary education has been on passing state-imposed tests, with the students doing less significant writing (such as terms papers) and reading literature, which results in a lack of educational experiences that are essential to legal education.²³

B. *The Resistance to a New Approach to Teaching Law Students*

I have heard many professors say that the way to fix a bar passage rate problem or have more “teachable students” is to increase admission standards. This simple “solution” misses two main points—that most students are coming to law school with very different educational experiences than most law professors had, and that only a few elite schools can really choose the most gifted students. Most schools have to accept the type of student body that comes to their school and work on ways to best educate those students. Some schools attract first generation college and graduate students, and others attract a large number of students with low LSAT scores.²⁴ Once a school has accepted a student, it has an obligation to take every possible step to help make that student succeed, which should involve integrating learning theory into every classroom and teaching students how to learn. Law schools have to get past the idea that this generation of law students are weaker than others, and develop ways to help these students.

Michael Hunter Schwartz, in his article *Teaching Students to be Self-Regulated Learners*, lays out the misguided perceptions that law professors have about current law students. He accurately portrays some of the views professors have often expressed about law students:

1. Some students have an inability to learn what they need to learn in law school;
2. We are already doing everything we can to teach the students; and

22. Garrick Davis, *Literary Reading in Dramatic Decline, According to National Endowment for the Arts Survey*, NEA NEWS ROOM, July 8, 2004, <http://www.nea.gov/news/news04/ReadingAtRisk.html>; NAT'L ENDOWMENT FOR THE ARTS, RESEARCH DIV. REPORT NO. 46, *READING AT RISK: A SURVEY OF LITERARY READING IN AMERICA 25-26* (2004), available at <http://www.nea.gov/pub/ReadingAtRisk.pdf>.

23. Davis, *supra* note 22; NAT'L ENDOWMENT FOR THE ARTS, *supra* note 22, at 25, 28; see also LISA M. ABRAMS, POLICY BRIEF FOR EDUCATION POLICY STUDIES LABORATORY, AZ. ST. U., *TEACHERS' VIEWS ON HIGH-STAKES TESTING: IMPLICATIONS FOR THE CLASSROOMS 2-3* (2004); NAOMI CHUDOWSKY ET AL., REPORT FOR CENTER ON EDUCATION POLICY, STATE HIGH SCHOOL EXIT EXAMS: A BASELINE REPORT 27, 29 (2002).

24. See, e.g., Akshat Tewary, *Legal Ethics as a Means to Address the Problem of Elite Law Firm Non-Diversity*, 12 ASIAN L.J. 1, 5-6 & nn. 34, 38 (2005) (detailing a general increase in law school admissions among minorities and women); NALP: The Association for Legal Career Professionals, *Jobs for New Law Graduates—Trends from 1994-2004* (2005), <http://www.nalp.org/content/index.php?pid=319> (July 3, 2006) (stating that in the past 11 years, the percentage of women enrolled in law school has increased from forty-three (43) percent to forty-nine (49) percent and minority graduation enrollment has increased from fifteen (15) percent to twenty (20) percent).

3. Students could do better if they just worked a great deal harder.²⁵

As Schwartz points out, the problem with this view is that it assumes that students come to law school with an inability to improve their learning, and that the school's job is not to correct past deficiencies or to correct mistakes made in the students' past educational experiences.²⁶ Arguably, these perceptions are also based on a view that law school is the top step in a hierarchical structure of education, and that only a certain number and quality of people should be admitted to law school and the practice of law; this view is "evil and false."²⁷

C. Overcoming the Resistance to Changes in Legal Education

There are a growing number of law professors and law schools that have rejected the idea that students cannot improve their learning in law school or that it is not the duty of law professors to correct the deficiencies that students bring to law school.²⁸ Many changes in this attitude are often based on the

25. Schwartz, *supra* note 2, at 449-50.

26. *Id.* at 450-51.

27. *Id.* at 450 (quoting Jay Feinman & Marc Feldman, *Pedagogy and Politics*, 73 GEO. L.J. 875, 896-97 (1985). Schwartz lays out the critique of the view that law schools cannot and should not have to improve the general learning skills of our students by reinforcing the hierarchical employment structures where legal practice is at the top:

This idea is an outgrowth of Darwinian evolutionary theory In law it is buttressed by Frankfurterian notions of meritocracy. The complex hierarchies of law schools, law students, law professors, and lawyers' practice settings are justified as reflecting real differences in the abilities of those stratified. The educational system, from the earliest grades to the law schools, is a process of continually finer sorting of students by natural ability; the function of the system is the selection of talent, rather than the development of talent across the board.

Id., at 449-50 (quoting Feinman & Feldman, *supra*, note 27, at 896-97); *see also id.* at 484-505).

28. *See, e.g.*, Robin A. Boyle, *Employing Active-Learning Techniques and Metacognition in Law School: Shifting Energy from Professor to Student*, 81 U. DET. MERCY L. REV. 1, n.18-26 (2003) (states that St. Johns University has a program which emphasizes active learning for its students); Dionne L. Koller, *Legal Writing and Academic Support: Timing is Everything*, 53 CLEV. ST. L. REV. 51, 54 (2005-2006) (explaining the University of Maryland School of Law program that incorporates both learning theory and academic support into a legal writing course); Ollivette E. Mencer, *New Directions in Academic Support and Legal Training: Looking Back, Forging Ahead*, 31 S.U. L. REV. 47, 48-54 (2003) (states that Southern University has developed a program for the school year that concentrates on students' skill development such as personal discipline and motivation); Nancy Millich, *Building Blocks of Analysis: Using Simple "Sesame Street Skills" and Sophisticated Educational Learning Theories in Teaching a Seminar in Legal Analysis and Writing*, 34 SANTA CLARA L. REV. 1127, 1128 (1994) (stating the University of Santa Clara School of Law has a seminar that teaches students metacognitive strategies to learn); Angela Passalacqua, *Using Visual Techniques to Teach Legal Analysis and Synthesis*, 3 LEGAL WRITING: J. LEGAL WRITING INST. 203, 203 (1997) (stating that Rutgers School of Law at Camden incorporates learning theory into its Learning and

reality that lawyers are constant learners, more so than other professions. The practice of law requires constant learning, from learning new law to understanding different fields and disciplines. For example, a litigation attorney working on a patent infringement case will have to learn patent law as well as the engineering of the inventions that are subject to the lawsuit. As such, lawyers never stop learning. The process of researching law, discovering facts, and conveying concepts to various audiences requires more learning than most careers. Law schools, however, fail to teach lawyers how to learn. In legal research and writing and other skills-oriented courses, professors try to teach how to practice law and develop the skills necessary to be a successful lawyer, but they fail in teaching the most important skill—how to learn. In doctrinal classes, professors use various methods to help students understand how to read and analyze cases, how to apply those cases to hypothetical situations, and how to generally “think like a lawyer,” but they fail to teach students how to “learn like a lawyer.” By integrating the understanding and application of metacognition into the law school curriculum, the law school curriculum will enhance the teaching of how to “think like a lawyer” while also teaching students how to “learn like a lawyer.”

III. METACOGNITION: WHAT IS IT AND WHY IS IT IMPORTANT?

As mentioned earlier, metacognition involves the awareness and control over one’s own thinking.²⁹ Metacognition is characterized by two components: 1) the awareness of what a person brings to the learning experience, and 2) the on-going process of actively planning, monitoring, evaluating, and creating

Research Writing Program); Cathaleen A. Roach, *A River Runs Through It: Tapping into the Informational Stream to Move Students from Isolation to Autonomy*, 36 ARIZ. L. REV. 667, n.686-693 (1994) (stating that DePaul University College of Law has an academic support program, which incorporates learning theory because law students learn when they are taught how to learn and not just what to learn); Schwartz, *supra* note 2, at 484-505 (stating that Western State University College of Law has developed a program to teach students to be self-regulated learners); Jacquelyn H. Slotkin, *An Institutional Commitment to Minorities and Diversity: The Evolution of a Law School Academic Support Program*, 12 T.M. COOLEY L. REV. 559, 561-65 (1995) (explaining California Western School of Law’s academic success program that helps minority students and at-risk students with special skills to learn the law).

29. See Hartman, *supra* note 8, at 34; FOGARTY, *supra* note 8, at viii. For more information detailing metacognition, see Amelia E. El-Hindi & Kristyn D. Childers, *Exploring Metacognitive Awareness and Perceived Attributions for Academic Success and Failure: A Study of At-Risk College Students* (Jan. 1996), available at ERIC/EDRS, File No. ED392348, http://www.eric.ed.gov/ERICDOCS/data/ericdocs2/content_storage_01/0000000b/80/125/41/28.pdf (paper presented at 1996 Annual Meeting of the Southwest Educational Research Association); Steve D. Rinehart & Jennifer M. Platt, *Metacognitive Awareness and Monitoring in Adult and College Readers*, 15 F. FOR READING 54, 54 (1984); METACOGNITION IN EDUCATIONAL THEORY AND PRACTICE 1, 1-20 (Douglas J. Hacker, John Dunlosky, & Arthur C. Graesser eds., 1998); Boyle, *supra* note 28; Robert Sternberg, *Metacognition, Abilities, and Developing Expertise: What Makes an Expert Student?*, 26 INSTRUCTIONAL SCI. 127 (1998).

pertinent learning strategies in order to complete some particular task.³⁰ The basic notion behind metacognition is the idea that thinking about one's thoughts and what specific skill sets can best be used within the learning task will yield the most efficient and reliable model of learning.³¹ Metacognition also plays a large role in learning efficiency, critical thinking, and problem solving because it also affects acquisition, comprehension, and application of what is learned.³² "Metacognition is not an automatic process," but is rather, the result of an *active and constant* manipulation of one's cognitive processes.³³

The theory behind metacognition is that those learners who apply appropriate metacognitive strategies are better self-regulated and effective learners.³⁴ Ultimately, the goal of legal education should be to make students self-regulated learners because lawyers do not have constant supervision and instruction when learning new concepts. Our goal in legal education should be to make all students expert learners. Expert self-regulated learners understand how they learn, are aware of their strengths and weaknesses, and can apply that knowledge to any new learning task. Law school, therefore, should not only focus on the amount of knowledge or skills to be taught, but rather on teaching lawyers how to evaluate and regulate their learning.³⁵ In teaching students to be better self-regulated learners, law schools must focus on both the cognitive skills required of a lawyer and general metacognitive skills. These metacognitive skills, or metaskills, include helping students: 1) understand how they learn; 2) become aware of the skills they already possess or are lacking; 3) plan appropriate strategies to actively acquire new skills without any additional formalized instruction; and 4) control, monitor, and evaluate their learning.³⁶

To more fully understand metacognition, law students, lawyers, and professors need to differentiate between *metacognition* and *cognition*. Although appearing to be one and the same, cognition primarily focuses on the skills needed to perform a task, while metacognition involves the understanding of

30. Howard T. Everson & Sigmund Tobias, *The Ability to Estimate Knowledge and Performance in College: A Metacognitive Analysis*, 26 INSTRUCTIONAL SCI. 65 (1998); Puntambekar, *supra* note 7, at 165.

31. See, e.g., Annette F. Gougey, *Tutoring Practices that Promote Cognitive and Affective Development*, (1992), reprinted in FROM ACCESS TO SUCCESS: A BOOK OF READINGS ON COLLEGE DEVELOPMENTAL EDUCATION AND LEARNING ASSISTANCE PROGRAMS 87 (Martha Maxwell ed., 1994) [hereinafter Gougey, *Tutoring*]; see also Annette F. Gougey, *Teaching Reading From a Metacognitive Perspective: Theory and Classroom Experiences*, 30 J.C. READING & LEARNING 85 (1999) [hereinafter Gougey, *Teaching*].

32. Hope J. Hartman, *Metacognition in Teaching and Learning: An Introduction*, 26 INSTRUCTIONAL SCI. 1 (1998).

33. Jacobson, *supra* note 7, at 581.

34. Hartman, *supra* note 8, at 63.

35. Gougey, *Teaching*, *supra* note 31.

36. Gougey, *Tutoring*, *supra* note 31, at 88 (citations omitted).

how a task is performed.³⁷ For example, the ability to use a digest or Westlaw/LexisNexis to find relevant case law is a cognitive skill, whereas knowing when to use a digest or Westlaw/LexisNexis involves metacognition or a metaskill.³⁸ Cognitive skills tend to involve specific subject areas and deal primarily with the direct application, manipulation, or transformation of given learning material.³⁹ Metacognitive skills, on the other hand, span multiple, often divergent subject areas and involve a greater degree of thinking about the learning process.⁴⁰ Metacognition goes beyond mere cognition because it requires individuals to plan before learning occurs, to monitor comprehension and production during learning, and to self-evaluate their learning upon completing the process.⁴¹ Whereas cognition is more of an automatic process, metacognition is far more deliberate and requires an individual to actively interact within a given learning paradigm.⁴²

A. Components of Metacognition

Metacognition is comprised of two different components: *knowledge of cognition* and *regulation of cognition*.⁴³ *Knowledge of cognition* refers to “what [an] individual[] know[s] about their own cognition or about cognition in general.”⁴⁴ Knowledge involves the ability to understand how to match a particular task with one’s own ability.⁴⁵ To make this match, learners must

37. Gregory Schraw, *Promoting General Metacognitive Awareness*, 26 INSTRUCTIONAL SCI. 113, 113 (1998).

38. Richard E. Mayer, *Cognitive, Metacognitive, and Motivational Aspects of Problem Solving*, 26 INSTRUCTIONAL SCI. 49, 53 (1998).

39. Schraw, *supra* note 37, at 116; Patricia L. Carrel, Linda Gajdusek, & Teresa Wise, *Metacognition and EFL/ESL Reading*, 26 INSTRUCTIONAL SCI. 97, 100 (1998) (quoting O’Malley et al., *Learning Strategies Applications with Students of English as a Second Language*, 19 TESOL QUARTERLY 557, 560-61 (1985)).

40. *Id.*

41. *Id.*

42. *Id.*

43. Schraw, *supra* note 37, at 114.

44. *Id.* Many educational theorists have further categorized the knowledge aspect of metacognition: *declarative, procedural, and conditional knowledge*. *Id.* *Declarative knowledge* includes “knowledge about oneself as a learner and about [those] factors [that] influence . . . performance.” *Id.* Good learners typically “appear to have more knowledge about different aspects of memory such as capacity limitations, rehearsal, and distributed learning.” *Id.* They will be aware of what skills they already possess as well as their strengths and weaknesses. *Id.* They may not know a particular label for their preferred learning style, but they understand how they best process information and learn.

Procedural knowledge focuses on an individual’s knowledge about performing pertinent tasks. *Id.* Procedural knowledge places a heavy emphasis on the strategies and heuristics a person employs when solving problems. *Id.* An example of procedural knowledge includes the methods by which an individual integrates and categorizes new information into pre-existing mental schemas. *Id.* *Conditional knowledge* refers to “knowing when and why to use declarative and procedural knowledge.” *Id.* The importance of conditional knowledge cannot be minimized, as it helps students selectively allocate resources and to use learning strategies more effectively. *Id.*

45. *Id.*

have explicit knowledge of three aspects of learning: 1) they must understand the educational task involved, 2) they must be aware of their skills, abilities, strengths, weaknesses, and particular learning styles and preferences, and 3) they must know how or when to apply this knowledge to various tasks.⁴⁶

The second main component of metacognition is the *regulation of cognition*, which concentrates on those activities “that help students control their learning.”⁴⁷ When referring to the “activities” used by students when regulating the learning process, there are usually three main skill sets that theorists point to: *planning, monitoring, and evaluation*.⁴⁸ “*Planning* involves the selection of appropriate strategies and [the] allocation of resources [that] affect performance.”⁴⁹ Examples of planning include strategy sequencing, making predictions before reading, and allocating fixed periods of time for completing a task.⁵⁰ *Monitoring* describes an individual’s continuous awareness of “comprehension and task performance.”⁵¹ The ability to “self-test,” to assess the effectiveness of certain learning strategies, is an example of monitoring.⁵² *Evaluating* refers to the process of appraising the final outcome of learning.⁵³ It involves an assessment of one’s initial goals and final conclusions by judging whether the learning strategy employed brought about the expected outcome.⁵⁴ It also affects the next time the learner plans for another learning experience.⁵⁵

B. Importance of Metacognition in Learning

Metacognition is an essential component of successful learning because it enables individuals to better manage cognitive skills, and to determine weaknesses that can be corrected through the construction of new cognitive skills.⁵⁶ There are marked differences in the metacognitive abilities of capable and less-capable learners.⁵⁷ The most effective learners are self-regulating learners because these adept learners are able to plan, monitor, and modify cognition at various stages during knowledge acquisition.⁵⁸ “Students with effective metacognitive skills accurately estimate their knowledge in a variety of domains, monitor [their] on-going learning, update [their] knowledge, and

46. Schraw, *supra* note 37, at 114.

47. *Id.*; see also Rinehart & Platt, *supra* note 29, at 54-55; Hacker, *supra* note 29, at 1.

48. Schraw, *supra* note 37, at 115.

49. *Id.*

50. *Id.*

51. *Id.*

52. *Id.*

53. Schraw, *supra* note 37, at 115.

54. *Id.*

55. *Id.*

56. *Id.* at 123.

57. Everson & Tobias, *supra* note 30, at 65.

58. Brenda A. Allen & Eleanor Armour-Thomas, *Construct Validation of Metacognition*, 127 J. PSYCHOL. 203, 203 (1993).

develop effective plans for [new] learning.”⁵⁹ Students who are able to “accurately distinguish between what they know and do not know . . . are more likely to . . . relearn imperfectly mastered materials . . . compared with those students who are less accurate in assessing the depth of their own knowledge base.”⁶⁰ Students lacking metacognitive approaches become learners without direction, without the invaluable opportunity to review “progress, accomplishments, and future directions.”⁶¹ Metacognition can help individuals become consciously aware of material previously learned, thereby increasing the likelihood of the correct application of previous learned material in an analogous situation.⁶²

Students possessing the ability to accurately distinguish between what has already been learned and mastered from what is yet to be learned have a far greater advantage, as they can be more strategic and effective learners.⁶³ Learners usually need to absorb a great deal of information in a limited amount of time.⁶⁴ Accurate and proficient monitoring of the learning process enables students utilizing effective metacognitive strategies to concentrate on ever-changing content and to properly adjust their learning goals and methods.⁶⁵ By helping individuals understand what they bring to the learning experience, and how metacognitive processes can be developed through the use of relevant learning strategies such as planning, monitoring, and regulating behavior, learning performance often dramatically improves.⁶⁶ By utilizing and modeling metacognitive processes during instruction, a student can achieve more durable and transferable learning.⁶⁷

Many law students come to law school without the knowledge or skills to properly engage in metacognitive learning. Specifically, students often come to law school with several metacognitive deficiencies. For example: 1) they don’t know when a task is easy or difficult; 2) they do not fully understand when they are confused or do not fully understand a particular concept; 3) they do not always know how long some task may take and what they need to do; 4) they do not monitor the success of what they are doing by determining when they have studied enough; 5) they do not always use all of the relevant information; 6) they often use step-by-step approaches without thinking about why they used the particular approach; and 7) they often jump to preliminary conclusions that guide their complete analysis, even when they ultimately turn out to be incorrect.⁶⁸ The over-reliance on the case method approach to teaching in doctrinal courses and the “how-to” approach in most skills-

59. Everson & Tobias, *supra* note 30, at 65.

60. *Id.* at 76.

61. Carrel, *supra* note 39, at 100 (citation omitted).

62. *Id.* (citation omitted).

63. Everson & Tobias, *supra* note 30, at 66.

64. *Id.*

65. *Id.*

66. Jacobson, *supra* note 7, at 582.

67. *Id.*

68. See Schwartz, *supra* note 25, at 472.

oriented courses foster these deficiencies. Law schools can begin to overcome these deficiencies by introducing metacognitive skills into the curriculum. Specifically, schools need to foster the understanding of what the students bring to law school—their learning preferences and styles, their particular past academic experiences, and how they can help or hinder learning in law school. Law professors also need to be more explicit in the particular cognitive skills that are being taught in law school, while not relying on implicit teaching and the “how to method” of instruction. Finally, law professors need to take a more active approach to teaching and modeling the metacognitive strategies of planning, monitoring, and evaluation one’s learning, and using technology to better foster the development of both cognitive and metacognitive skills of the students.

IV. STEP ONE OF METACOGNITION—AWARENESS OF COGNITION

The first step in helping law students and lawyers become fully self-regulated learners and incorporate the principles of metacognition into the practice of law is to assist them in understanding how they learn.⁶⁹ Law students come to school with many years of academic experience, habits, and entrenched learning styles and preferences, making the discovery of how the students learn easier. However, this also makes overcoming years of habits that may interfere with appropriate learning, more difficult.⁷⁰ Students often enter law school having an idea of how they learn best, but those habits are often over-stated or do not properly transfer to the practice of law. Because law students usually have at least sixteen years of academic learning before they enter law school, many of their ideas and preferences about learning have already been developed and are not easily changed.

69. One of the main issues that law schools will need to address is whether there should be a separate component or class to teach learning concepts, or whether it should be part of every course taught. If it is a separate course, the decision needs to be made of whether it would be integrated into a particular doctrinal course, or whether it would be a separate adjunct course. See Barbara K. Hofer, Shirley L. Yu & Paul R. Pintrich, *Teaching College Students to Be Self-Regulated Learners*, in SELF-REGULATED LEARNING: FROM TEACHING TO SELF-REFLECTIVE PRACTICE 57, 61 (Dale H. Schunk & Barry J. Zimmerman eds., 1998) (discussing an adjunct program at the University of Michigan that teaches students how to be more effective self-regulated learners). Obviously, if the school decides to incorporate metacognition or any learning theory into each class, significant training of law professors must take place because most law professors have little or no education training. Professors have to get past the idea that they need more educational and pedagogical training to improve their teaching. Without any appropriate training, professors will teach using their own learning preferences and based on how they were taught.

70. ROBERT BURNS, *THE ADULT LEARNER AT WORK: THE CHALLENGES OF LIFELONG EDUCATION IN THE NEW MILLENNIUM* 220-27 (2d ed. 2002) (1958) (detailing how adult learners differ from children in that adults bring many more learning experiences to every situation which may help or hinder the learning process).

As adult learners, law students bring a wider range of skills and experiences to every new learning situation when compared with younger and less experienced learners. Some learning theorists have distinguished between how children and adults learn, which could ultimately impact how law schools view their students. In the 1970s, a relatively new discipline called *andragogy* began to emerge.⁷¹ Although the term andragogy was first used in Germany over one hundred years ago, Malcolm Knowles began using the term in developing a theory that held that because adult learners learned differently than children, educators needed to structure adult education differently.⁷² Although criticized for generalizing that adults and children approach learning in diametrically different ways, most learning theorists have accepted some basic assumptions about adult learners.⁷³

First, adult learners are often more motivated to learn as they begin to have needs and interests that require learning.⁷⁴ As such, adult learners often begin their learning by focusing on how it will address their particular needs and interests. Second, adults come to every new learning experience with previous experience. Adults will often apply previous knowledge to every new learning

71. The concept of andragogy is defined as the “art and science of helping adults learn,” and was meant to be an alternative to pedagogy. MALCOLM KNOWLES, *THE ADULT LEARNER: A NEGLECTED SPECIES* 54 (4th ed. 1998). Pedagogy is the teaching of children, although most educators use the term to mean the broad sense of teaching. *Id.* Knowles believed that pedagogy focused on teacher-centered learning, while andragogy should involve student-centered learning. *Id.* at 54-63. Knowles later acknowledged that the two concepts, andragogy and pedagogy, were not a dichotomy but were concurrent approaches to learning. *Id.* at 63-64. He later believed that children could also learn more effectively by engaging in more active and student-centered learning, but still thought that adults brought different experiences and levels of motivation to the learning experience, thus requiring some different learning experiences and techniques. *Id.* at 59-63. See, e.g., Cyr, *supra* note 14, at 1-2 (clarifying that Knowles introduced adult education by comparing it with educating children and the development of andragogy in the 1970s); PATRICIA A. MAHER, RESEARCH STUDY PRESENTED AT AMERICAN ASSOCIATION FOR ADULT AND CONTINUING EDUCATION, CONVERSATIONS WITH LONG-TIME ADULT EDUCATORS: THE FIRST THREE GENERATIONS 2 (2002) available at ERIC/EDRS, File No. ED47/248, http://www.eric.ed.gov/ERICDOCS/data/ericdocs2/content_storage_01/0000000b/80/27/d1/92.pdf (explaining that Knowles was the foundational building block for adult learning theory and one of its three founding fathers); DONALD N. ROBERSON, JR., ANDRAGOGY IN COLOR 2-3 (2002) available at ERIC/EDRS, File No. ED465047, http://www.eric.ed.gov/ERICDOCS/data/ericdocs2/content_storage_01/0000000b/80/0d/ee/f4.pdf (stating that Knowles was the innovator of andragogy by developing the difference of adult education in comparison to educating children); Ralf St. Clair, *Andragogy Revisited: Theory for the 21st Century?*, in MYTHS AND REALITIES (2002) (arguing that Knowles’s concept of andragogy is the best known theory in adult education); Margot B. Weinstein, *Adult Learning Principles and Concepts in the Workplace: Implications for Training in HRD*, in ACAD. OF HUMAN RES. DEV. 2002 CONF. PROCEEDINGS 35-1 (T. Marshall Egan & Susan A. Lynham eds., 2002) (stating that the research study began with studying andragogy, which was developed by Knowles and transformed adult learning).

72. KNOWLES, *supra* note 71, at 51-54; MALCOLM S. KNOWLES, *THE MODERN PRACTICE OF ADULT EDUCATION: FROM PEDAGOGY TO ANDRAGOGY* (Revised and Updated ed., 1980).

73. For a discussion on how Knowles’s theories have been criticized, see BURNS, *supra* note 70, at 234-39.

74. *Id.* at 234-50.

experience that they encounter.⁷⁵ This may present initial problems to law students because they are changing discursive communities, which likely differ significantly. However, past experiences often can be used effectively as a springboard for developing the necessary legal practice skills.⁷⁶ Generally, learning can simply be an addition to the knowledge the adult has already obtained. The main problem with many law students is that they have to undo poorly developed habits while trying to learn new techniques that have never been practiced. The student may also be required to modify previous experience to account for new circumstances.⁷⁷

Another very important difference between child and adult learners is that adults have a deep need to be self-directing.⁷⁸ Therefore, the role of the professor should be more of facilitator or coach, not as the primary educator.⁷⁹ Finally, differences in learning styles, preferences, and experiences between adult learners increase with age. Adult learning, therefore, needs to account for those differences in style, pace, and cognitive development, which will help the student understand his differences and how to adapt those differences to each learning experience.⁸⁰

With these generalizations in mind, law schools need to do more to make students aware of what they bring to the table. Students may have a sense of how they learn when they come to law school, but they likely do not explicitly or actively think about how they think or learn. For example, a student may know that he likes going to class to learn, but probably does not realize that this is based on a preference for auditory learning. By making the student actively aware of his preference for auditory learning, he can begin to adapt his approach to studying by focusing on how he can use that preference to his advantage or how to strengthen other ways of learning. The key is to first make the student aware of his learning preference, and then work on strategies that incorporate or adapt those preferences to each education experience.

To facilitate my students' learning about how they learn, I have integrated two types of self-discovery activities into my legal writing classes. The first learning tool is a simple questionnaire that is divided into two parts: 1) a series of questions that focuses the students on their learning styles and preferences, and 2) specific questions about the students' past academic experiences that may affect their learning in law school.⁸¹ The second tool, which is discussed

75. BURNS, *supra* note 70, at 114-17.

76. *Id.*

77. *Id.*

78. *Id.* at 237.

79. Kristen B. Gerdy, *Teacher, Coach, Cheerleader, and Judge: Promoting Learning Through Learner-Centered Assessment*, 94 LAW LIBR. J. 59, 61 (2002).

80. BURNS, *supra* note 70, at 229-251.

81. The tool is featured in this article as Appendix A. I adapted the first part of the learning tool from M.H. Sam Jacobson's article. Jacobson, *supra* note 6, at app. B at 177. I developed the past academic experience part based on what I believed may influence a student's

more fully in my discussion on cognitive processing below, helps the students understand how they individually process information.

My assessment tools are not meant to be diagnostic, but are designed to get the students to actively think about their learning. Ideally, it opens a dialogue between the student and teacher about how to use those preferences and experiences in law school. Often, the discussion leads to how past academic experiences are hindering the students' learning in law school. For example, I have heard students say that in high school and college they did not have to attend class, but could "cram" for an exam the night before by just reading the book. This gives me a couple points to discuss. First, we can begin discussing whether the student prefers reading material instead of talking about it. If the student has a preference for reading material, then we can set up a plan to have him read each case before and after class, drawing upon his learning style preference. I also begin to break down the habit of "cramming" before an exam by explaining how it may be too difficult, given the amount and complexity of the material taught in law school. By having more information about the student, the teacher and student can begin to brainstorm and think of how to either use or overcome previous education experiences or learning preferences. In teaching students to apply metacognitive skills to their learning experiences, these learning tools develop the students' awareness of cognition and what they bring to the learning experience, focusing on the students' learning preferences and past academic experiences.

A. Awareness of One's Cognitive Abilities and Preferences

Learning theorists and educational psychologists have broken learning preferences into several different areas. Most relevant to adult learners is the individual's learning style preference and cognitive style preference. Most professors have been exposed to, and seem to generally understand, the different learning style preferences of their students. I personally have noticed a definite increase in discussion among my colleagues about how they need to incorporate different teaching techniques in class to address the wide range of preferences among students.

M. H. Sam Jacobson, in her article *A Primer on Learning Styles: Reaching Every Student*, gives a detailed discussion of the different learning styles that our students bring to the classroom. Put simply, each learner has a preference on how he absorbs information:⁸²

1. Verbal learners prefer learning through written text.⁸³ Those students who prefer to learn through reading will have a much easier time in law school because of the reliance on reading in the practice of law.⁸⁴

research, writing, and analysis skills. For my discussion on learning modalities and preferences, see *infra* notes 82 to 123.

82. Jacobson, *supra* note 6, at 150-51.

83. *Id.* at 151.

2. Visual learners have a preference for seeing images.⁸⁵ Visual learners see the big picture in their minds and often have more difficulty seeing the parts of a problem.⁸⁶ With the increasing use of computers in our society, some believe that more students are entering law school with a preference for visual learning.⁸⁷

3. Oral learners prefer to discuss ideas to learn.⁸⁸ These students tend to prefer sitting in class and learning through lecture and discussions in class.⁸⁹ Most important to these types of learners is actually participating in the discussions because it allows them to talk out their thoughts.⁹⁰ They often do not think out their ideas before talking, but rather use the discussions to flesh out their ideas.⁹¹

4. Aural learners prefer to listen to lectures, class discussions, tapes, and others to learn.⁹² They may often be the quiet students in class, and may even prefer to tape classes in order to listen to them later.⁹³

5. Tactile and kinesthetic learners prefer to learn by doing.⁹⁴ These are often the most difficult to teach in class because it involves a great deal of planning on the part of the professor to integrate role-playing or activities into the class.⁹⁵

Professors can and have changed their methods of teaching to try to reach students with different learning styles.⁹⁶ For example, in my legal skills class, I try to hand out written materials before class, use the computer to display

84. Jacobson, *supra* note 6, at 150-51. For more discussion on learning style preferences relating to how people absorb information, see Robin A. Boyle & Rita Dunn, *Teaching Law Students Through Individual Learning Styles*, 62 ALB. L. REV. 213 (1998); Barbara J. Busharis & Suzanne E. Rowe, *The Gordian Knot: Uniting Skills and Substance in Employment Discrimination and Federal Taxation Courses*, 33 J. MARSHALL L. REV. 303, 316-19 (2000) (discusses different learning styles and ways that teaching in the classroom would benefit the student that learned in such a manner); Boyle, *supra* note 28, at 20-26 (states ways in which each style of learning could be taught to students to accommodate their different needs).

85. Jacobson, *supra* note 6, at 151-52.

86. *Id.* at 152.

87. *Id.* at 151.

88. *Id.* at 154.

89. *Id.*

90. *Id.*

91. *Id.*; see also Anthony S. Niedwiecki, *Partner Briefings: Bridging the Gap Between Oral and Written Skills*, SCRIVENER (Winter 2002) (newsletter of American Society of Writers on Legal Subjects) (discussing how conferencing with students can be more beneficial to oral learners when the students are asked to talk out their conclusions before they actually discuss what the student wrote).

92. Jacobson, *supra* note 6, at 151, 155.

93. *Id.* at 155.

94. *Id.*

95. *Id.* at 155-56.

96. See, e.g., Anzalone, *supra* note 6, at 360-70 (stating that professors must teach to a law student's learning style); Busharis & Rowe, *supra* note 84, at 317-18 (explaining varied techniques in the classroom that would benefit every learning style).

different examples of good and bad writing, put students in groups to talk about assignments, and have the students write and perform different tasks during class.⁹⁷ However, just adapting a professor's individual teaching style to accommodate the different learning styles of the students is not enough.⁹⁸ This may help make the classroom more conducive to learning for all students, but it does not help the students adapt their preferences to learning outside of the class. The goal of any assessment tool should be to open a dialogue between the student and the professor on how to either adapt the student's preferences to the practice of law or how to work on strengthening his use of other modes of absorbing information. Often, just making the students aware that they have a particular preference is a good start to incorporating metacognitive skills. Knowing one's learning preference may require that he plan, monitor, or evaluate differently than another person who has a different learning style preference. For example, if a student does not prefer reading (i.e. not a verbal learner), he will have to adjust the regulation of his learning. He will have to plan strategies that make him read cases more effectively and efficiently. For example, he could highlight text with different colored markers.⁹⁹ During the monitoring stage of reading, the student may have to spend more time reading each paragraph or read aloud.¹⁰⁰ The student may have to more closely monitor his reading when he reviews a case because he knows that he does not learn best from reading. He could also take more extensive notes, or talk out the case after reading it, depending on his learning style. The key is to make the student actively aware of his preferences so he can better regulate his learning.

The second, and arguably more important, preference details a student's cognitive style. The most relevant theory in teaching adults is *Kolb's experiential learning theory*.¹⁰¹ Kolb's theory describes four learning phases that together

97. M. H. Sam Jacobson discusses the ways to accommodate the different learning styles in each class in her article. See Jacobson, *supra* note 6, at 156.

98. *Id.*

99. The goal is to plan on how to use the person's learning style preference to figure out how to best read cases. For example, if the person is a visual learner, he may want to use colorful markers to highlight important parts of the case.

100. For more discussion on metacognitive strategies for learning in law school, see *infra* Part V.

101. There are a multitude of cognitive learning style theories, but the most commonly followed is Kolb's experiential learning theory because it is based on John Dewey's theory that all education needs to be based on experience and Jean Piaget's theory that intelligence is based on the interaction of the person with the environment. See DAVID A. KOLB EXPERIENTIAL LEARNING: EXPERIENCE AS THE SOURCE OF LEARNING AND DEVELOPMENT (1984). Theories about cognitive style preferences espouse the belief that because of individual psychological differences, individuals process information differently. Rita Dunn et al., *Identifying Individual Learning Styles*, in STUDENT LEARNING STYLES: DIAGNOSING AND PRESCRIBING PROGRAMS 39, 53-54 (1979). Cognitive style preferences can be defined as "information processing habits. . . [t]hey are characteristic modes of operation which, although not necessarily completely independent of content, tend to function across a variety of content areas." Wesley R. Anderson & S. William Bruce, *A Plan for Matching Learning and Teaching Styles*, in STUDENT LEARNING, *supra* note 101, at 81, 84 (citation omitted).

form “two learning dimensions—concrete/abstract and active/reflective.”¹⁰² These two dimensions can then be further broken down into four quadrants, each reflecting four different learning styles.¹⁰³ Put more simply, there are two parts to Kolb’s theory: 1) an examination of the four different cognitive learning preferences, and 2) an examination of the very process by which people learn through experience.¹⁰⁴ Under Kolb’s theory, learners first acquire information by immediate *concrete experience* with the new data, followed by a *reflective observation* of the experienced data, organizing and examining it from different perspectives.¹⁰⁵ These two stages are then followed by the occurrence of *abstract conceptualism*, in which learners internalize and integrate their observations into generalizations and theories.¹⁰⁶ A learner then relies on these generalizations or internal theories in Kolb’s final stage of learning, *active experimentation*, by applying them in novel situations.¹⁰⁷ Ideally, we want law students to constantly go through the entire learning cycle, but they often get caught in the first or second phase.

Not only does Kolb’s learning theory describe the cyclical process of learning, it also describes how learners fall within four different cognitive learning preferences. The main thrust of Kolb’s theory is that all normal adults possess and use each of the styles, but vary in which style they prefer.¹⁰⁸ These styles match the different quadrants that Kolb says are part of the

One of the earliest and most simple tools used to assess varying information processing techniques is Witkin’s *Group Embedded Figures Test* (GEFT). *Id.* at 85. The GEFT is used to determine a student’s cognitive style, the methods by which a student perceives and processes information. *Id.* The test requires a student to find simple geometric figures hidden within complex shape patterns. *Id.* By measuring a student’s ability to separate the simple from the complex, the GEFT can classify a student as either *Field Independent* or *Field Dependent*. *Id.*

Field Dependence, also known as *global style*, is a “dimension of cognitive style that is characteristic of an individual who: tends to have difficulty separating field from ground; is inclined to respond to a stimulus as a whole; tends to be dependent on others; and is socially oriented.” *Id.* at 84 (citation omitted). Conversely, Field Independence, also known as *analytic style*, is “characteristic of an individual who: can perceive items as discrete from their background; can reorganize an already organized field; provide structure to unstructured material; tends to be articulate when describing himself and his experiences; and tends to be independent.” *Id.* (citation omitted).

102. Lesley Willcoxson & Michael Prosser, *Kolb’s Learning Style Inventory (1985): Review and Further Study of Validity and Reliability*, 66 BRITISH J. EDUC. PSYCHOL. 247, 247 (1996).

103. Robert Loo, *Confirmatory Factor Analyses of Kolb’s Learning Style Inventory (LSI 1985)*, 69 BRITISH J. EDUC. PSYCHOL. 213, 213-214 (1999).

104. See Deanna S. Cross & Elwin R. Tilson, *Tools to Assess Students’ Learning Styles*, 69 RADIOLOGICAL TECH. 89, 90-91 (1997).

105. Steven M. De Ciantis & M. J. Kirton, *A Psychometric Reexamination of Kolb’s Experiential Learning Cycle Construct: A Separation of Level, Style, and Process*, 56 EDUC. & PSYCHOL. MEASUREMENT 809, 810 (1996).

106. *Id.*

107. *Id.*

108. John M. Cornwell & Pamela A. Manfreda, *Kolb’s Learning Style Theory Revisited*, 54 EDUC. & PSYCHOL. MEASUREMENT 317 (1994).

cyclical process of learning.¹⁰⁹ As such, one type of learner may excel more in a particular phase of the learning cycle. Theoretically, the most efficient and preferred learning method employed by a student should be the one that best corresponds to the individual's primary learning style.¹¹⁰ Under Kolb's theory, however, individuals remain fluid as a given learning preference "reflects a predominant rather than absolute orientation."¹¹¹

Kolb developed a learning style preference instrument (LSI) in an attempt to quantify his experiential learning theory.¹¹² The Kolb inventory categorizes learners into four different types:¹¹³

1. *Divergers* rely on concrete experiences, learning by reflective observation.¹¹⁴ Divergers typically excel at generating ideas and interacting with people.¹¹⁵
2. *Assimilators* also utilize reflective observation, but unlike divergers rely more on abstract conceptualization than on concrete experiences.¹¹⁶ Assimilators are less people-oriented than divergers and tend to focus more on the strength of an idea or theory.¹¹⁷
3. *Convergers*, like assimilators, depend on abstract conceptualization, but transform these conceptualizations into learning through active experimentation.¹¹⁸ Convergers are thought to be less emotional than most others, and represent those students searching for "one correct answer."¹¹⁹
4. *Accommodators* employ the most hands-on learning style, converting their concrete experiences into learning through active experimentation.¹²⁰ Students categorized as accommodators tend to be risk takers who flourish in situations where adaptation and problem solving are required.¹²¹

109. Cornwell & Manfredi, *supra* note 108 at 317-18.

110. *Id.*

111. Christine R. Brew, *Kolb's Learning Style Instrument: Sensitive to Gender*, 62 EDUC. & PSYCHOL. MEASUREMENT 373, 375 (2002).

112. *Id.* at 373.

113. See Cross & Tilson, *supra* note 104, at 90.

114. *Id.*

115. *Id.*

116. *Id.*

117. *Id.*

118. See Cross & Tilson, *supra* note 104, at 90.

119. *Id.*

120. *Id.*

121. *Id.* Another, more recent tool used to assess cognitive style is the instrument known as the *Gregoric Style Delineator*. Terrance P. O'Brien, *Construct Validation of the Gregoric Style Delineator: An Application of Lisrel 7*, 50 EDUC. & PSYCHOL. MEASUREMENT 631, 631 (1990). Based heavily on Kolb's model of experiential learning, this instrument attempts to "measure the mediation (cognitive) abilities of perception and ordering," with "[p]erception . . . represented as a bipolar continuum ranging from abstractness to correctness," and "[o]rdering . . . represented by a bipolar continuum ranging from sequence to randomness." *Id.* These continuums are subsequently combined to form four basic cognitive inclinations: "Concrete Sequential," "Abstract Sequential," "Abstract Random" and "Concrete Random." *Id.* The test

I have incorporated the use of Kolb's learning style inventory into my legal skills class.¹²² After the students have learned research, I give them the inventory to determine their cognitive preference. Once the students determine their preferences, I put them into groups based on that preference. I then ask them to develop a plan for how they would have preferred to learn legal research. Each group then puts its plan on the board, and the students are often amazed at how different each group's plan is. I use this activity to explain that the students need to be aware of these preferences so they can adapt their learning in the future. For example, if a group would prefer a demonstration of research before they read about how to research, they need to do the same when they are learning new tasks later in their legal education. I appreciate this exercise because it does not make any particular judgments on the best way to learn, but rather focuses the students on how each person learns differently and how those differences can be adapted to individual learning tasks. Again, this information provides the students with another dimension of their cognitive preferences so they can regulate their own metacognitive strategies during law school and in the practice of law.¹²³

is based on the premise that while all individuals possess some base level of ability in each of these dimensions, most learners tend to strongly gravitate towards one particular end on the continuum, and usually rely exclusively on one of the four inclinations during the learning process. *Id.*

122. I use an inventory that was adapted from the Kolb Learning Style Inventory by Kathryn Mercer at Case Western Reserve University. Kathryn Mercer, Modified Inventory Based on Kolb's Learning-Style Inventory (2002) (on file with Author). The document was given to me at the Legal Writing Institute Conference in Knoxville, TN on June 1, 2002.

123. The above two types of learning preferences—absorbing information and cognitive style preferences—focus solely on a singular approach to learning. More modern approaches to learning are focusing on the multidimensional theories of learning which recognize the subtle interplay of a large variety of factors that likely affect an individual's capacity for learning. MANUEL MARTINEZ-PONS, *THE PSYCHOLOGY OF TEACHING & LEARNING A THREE STEP APPROACH* 83-84 (2001). The Multidimensional theory of learning combines features found in the aforementioned theories, mixing and matching the best each theory has to offer. *Id.* at 84. Multidimensional theorists assert that learning is a multidimensional process, encompassing a wide "range of variables," both cognitive and non-cognitive. Rosalind Murray-Harvey, *Conceptual and Measurement Properties of the Productivity Environmental Preference Survey as a Measure of Learning Style*, 54 *EDUC. & PSYCHOL. MEASUREMENT* 1002, 1003 (1994). Perhaps the most influential work under this theory and in the entire field of learning style is *the Dunn and Dunn Model of Learning Style*. Martinez-Pons, *supra*, note 123, at 83-84. The Dunn Model advocates the beliefs that individuals vary greatly in their learning styles and that the "environmental, emotional, sociological, physical, and psychological preferences of an individual" must be ascertained in order to accurately determine their most successful learning style. *Id.* at 84.

The *Productivity Environmental Preference Survey* (PEPS) developed by Price, Dunn & Dunn is the instrument most often cited to identify those factors exerting the greatest influence over a given student's success in acquiring knowledge. Murray-Harvey, *supra* note 123, at 1003. The theory behind PEPS is that "students possess biologically based physical and environmental learning preferences that, along with well-established trait-like emotional and sociological preferences, combine to form an individual learning style profile." *Id.* PEPS purports to integrate "numerous [learning] style dimensions" that were usually separately considered by

B. Awareness of Past Academic Experiences

Law students, as adult learners, carry a wide range of academic and social experiences that will directly impact every learning situation:

[A]dults carry within themselves a huge reservoir of learning resources Of course, experience is not always positive. Experience can cause the development of biases and habits that close minds to fresh ideas and alternatives. . . . Therefore a core methodology for adult education is the analysis of experience. . . . But because of the range of experiences and varying rates of development adults are more heterogeneous than children and more sensitivity is required by the teacher to locate each person's particular experimental position and make the learning and problem solving relevant.¹²⁴

Each law student brings to law school varying degrees of academic experience because most law schools do not require a background in any particular discipline. Law students come to law school with undergraduate degrees ranging from theater to political science to mathematics. In addition, law students also come with a wide range of degrees, with some students only receiving one undergraduate degree and some students holding doctorate or medical degrees. With such a wide range of academic experiences, every student brings skills, habits, and ideas that may hinder, support, or help the learning experience in law school. Specifically, students bring differing levels of vigor and experience with logic, reasoning, writing, researching, and problem solving.¹²⁵ For example, a student who majors in mathematics may

learning theory researchers. *Id.* As a diagnostic tool, PEPS is a survey containing one hundred questions that yield scores on twenty different "elements" that are grouped together as follows:

1. "[I]mmediate Environment (noise level, light, temperature, seating design);"
2. "Emotionality (motivation, persistence, responsibility, need for externally imposed structure versus flexibility);"
3. "Sociological needs (self or peer oriented, authority oriented, learning in several ways versus need for consistent patterns);"
4. "Physical needs (perceptual modalities [auditory, visual, tactile, kinesthetic], Time of Day energy levels, need for intake and mobility)."

Id.

124. See BURNS, *supra* note 70, at 232. For a discussion on the differences between adults and children, see *supra* notes 71-80.

125. For example, at Florida State University, students are required to have a C- or higher in calculus and two other courses in mathematics or a laboratory-science as prerequisites to becoming mathematics majors, Fla. St. Univ., FSU Undergraduate Academic Program Guide (2005-2006): Mathematics, <http://www.academic-guideoffsu.edu/mathematics.htm>. The students must also fulfill the requirements to be part of the Arts and Sciences College, which are "a minimum of six hours each in written communication, humanities, and natural science, and three hours each in history and mathematics." *Id.* Also, students need to fulfill a foreign language through the intermediate level. *Id.* Mathematics majors must complete all their upper-level courses with a C- or higher. *Id.* All upper-level courses include advanced mathematics courses and laboratory sciences. *Id.* The students must fulfill 36 hours of liberal studies, 24 hours of prerequisite coursework, 36 to 70 hours of major coursework, 12 to 15 hours of minor

have much more experience with deductive reasoning and logic than most other majors, whereas a student who studies English may have more experience writing than others.¹²⁶ In an analysis of several studies, researchers Mark Graham and Bryan Adamson found that students with differing undergraduate and graduate backgrounds bring differing abilities to engage in legal reasoning.¹²⁷ In their own study of law students, they found that mathematics and engineering students were the most proficient in deductive reasoning skills:

The undergraduate major of law students is related to their performance on general deductive reasoning problems, even after their LSAT scores are considered. Law students with mathematics, engineering, and philosophy majors had, to a statistically significant extent, more correct answers than economics, English/literature, history, and political science majors on these general deductive reasoning tasks. Law students with an economics or

coursework, 4 to 12 hours of other coursework, and 4 to 19 hours of electives to fulfill the required 120 hours of study to graduate with a mathematics degree. *Id.* Political Science majors must fulfill a required two courses in political science in order to be admitted to the political science major, as well as have 52 hours of study with a 2.0 GPA and half of the hours devoted to Liberal Studies, including freshman English and mathematics. Fla. St. Univ., FSU Undergraduate Academic Program guide (2005-2006): Political Science, http://www.academic-guide.fsu.edu/political_science.htm. The major requires that 30 hours of upper-level political science classes be fulfilled with grades of C- or higher. *Id.* A political science major must fulfill 36 hours of liberal studies, 30 hours of major coursework, 12 hours of minor coursework, and 42 hours of electives to fulfill the 120 hours of study to graduate. *Id.*

At the University of Virginia, students must complete a calculus sequence of three hours with an average GPA of 2.200 in the classes as prerequisites to being mathematics majors. Univ. of Va. Dept. of Mathematics, Information for Undergraduates: Major in Mathematics, http://www.math.Virginia.edu/undergrad_major.htm (last modified June 21, 2006). The students must take a required computer course in order to graduate. *Id.* Nine required mathematics courses, which equal about 28 hours of credits, must be completed with minimum grades of C in seven of those courses and C- in two of the courses. *Id.* Students majoring in government must fulfill 30 hours of courses in the Department of Politics and 12 hours of related coursework. Univ. of Va. Dept. of Politics, Requirements for Major in Government (2005), http://www.Virginia.edu/politics/undergrad_program/maj_rqmts_gov.html. The only prerequisites to major in Government are three credits in any government course with a grade of C or higher and an average GPA of 2.0. *Id.* Government majors have a distribution requirement between American Politics, Comparative Politics, International Relations, and Political Theory. *Id.* Students must fulfill at least 15 hours of 300 level courses and 6 hours of 400 or 500 level courses. *Id.* The students must also fulfill 12 hours of other disciplines, such as history, philosophy, and the social sciences. *Id.* All the required courses for the major must be passed with a C or higher. *Id.*

126. See Mark Graham & Bryan Adamson, *Law Students' Undergraduate Major: Implications for Law School Academic Support Programs (ASPs)*, 69 UMKC L. REV. 533, 550-53 (2001) (discussing how different majors affect a student's ability to engage in legal reasoning).

127. *Id.* at 547-50. Although the examination of the studies could not draw a direct correlation between undergraduate and graduate major to a person's ability to engage in deductive reasoning, the authors began their own study that showed that different majors produced different levels of performance on deductive reasoning skills. *Id.* at 550-54.

English/literature major had, to a statistically significant extent, more correct answers than those who had been history or political science majors during their undergraduate careers.¹²⁸

Past academic experience can also impact the organization of a student's writing. In her article, *How Individual Differences Affect Organization and How Teachers Can Respond to These Differences*, Mary Barnard Ray details how different undergraduate majors may influence how a student organizes his writing.¹²⁹ For example, she explains how political science majors are taught to go from "a specific situation to broader philosophical applications," while lawyers need to do the exact opposite.¹³⁰

In the assessment tool that I give my students, I ask them about their undergraduate and graduate majors, the number of significant papers they have written, how much time they spent studying, what types of research have they done, and how they approached major projects. This assessment gives me an opportunity to draw parallels to or distinguish previous academic experiences with what is expected in law school. It also gives me a chance to discuss how the types of reasoning may differ between law school writing and writing in other disciplines.¹³¹ This assessment and explicit discussion about reasoning helps in the planning stage of my students' regulation of cognition, the second phase of metacognition.¹³²

Again, making the students aware of what experiences they bring to law school can help them in regulating their cognition by helping them to understand which past experiences they can effectively draw upon and which may hinder their development.¹³³ The first step is to make the students aware of these differences and then set up a plan to use or alter the different skills that are brought to every learning experience.

C. Awareness of the Cognitive Skills Required of a Lawyer

Although understanding what experiences, biases, habits, and learning preferences each person brings to law school is important, it is only the first step in making a student engage in metacognition and become a self-regulated learner. The student also has to have knowledge of the cognitive skills required of a lawyer so the student can match skills, or the lack thereof, to the

128. Graham & Adamson, *supra* note 126 at 553.

129. Mary Barnard Ray, *How Individual Differences Affect Organization and How Teachers Can Respond to These Differences*, 5 LEGAL WRITING: J. LEGAL WRITING INST. 125, 128 (1999).

130. *Id.* at 129.

131. A simple example involves telling my students that legal writing is similar to a proof that may be done in a science class. A scientist may start with a hypothesis and then write a paper that proves that particular hypothesis. I tell my students that the same type of organization takes place in legal writing—start with a conclusion and then prove that conclusion. Political science and English majors often have more difficulty because their writing often works towards conclusions.

132. I discuss how to help students in the planning stage of metacognition at *infra* Part V, notes 156-57.

133. See Ray, *supra* note 129, at 127-34.

particular tasks. This is exactly where law professors may be the most deficient because of their reliance on implicit teaching and the “how to method” of instruction.¹³⁴ Professors do highlight the critical skills of reading, writing, analysis, and synthesis in the classroom, but there is a lack of emphasis on the explicit teaching of the different types of reasoning used in the practice of law. To foster more effective learning, therefore, it is essential that the professors explicitly explain and model the types of legal reasoning that lawyers must use.

1. Understanding the Reasoning Required of a Lawyer

In addressing the diverse legal scenarios that invariably arise everyday, lawyers rely on a wide range of different skill sets when engaged in problem solving. Regardless of practice area, there are at least three fundamental reasoning skills that all good lawyers absolutely must employ if any degree of success is to be achieved: inductive reasoning, deductive reasoning, and analogical reasoning.¹³⁵ In addition, a lawyer must be able to think critically, read critically, and communicate clearly and effectively. The ability to use deductive, inductive, and analogical reasoning are important skills that support the ability to think, read, and communicate effectively. Deductive, inductive, and analogical reasoning enable lawyers to contemplate, process, understand, and communicate information.¹³⁶ All three logic types play pivotal roles in a lawyer’s ability to first comprehend the meaning of new information and to then successfully apply the correct body of law to a given fact scenario.¹³⁷ I often explain to my students that lawyers play the role of student and teacher

134. See *supra* notes 3-5 for a discussion on how the use of the Socratic method in doctrinal classes relies heavily on implicit teaching and how there is a heavy focus on the “how to method” in skills-based courses.

135. Graham & Adamson, *supra* note 126, at 533. Deductive reasoning is used by lawyers to move from the general or universal to the particular, while inductive reasoning is utilized to move from the particular to the general or from the particular to the particular in the form of an analogy. RUGGERO J. ALDISERT, *LOGIC FOR LAWYERS: A GUIDE TO CLEAR LEGAL THINKING* 48-49 (3d ed. 1997). Analogical reasoning takes place by comparing, contrasting, and weighing particulars of various different cases. *Id.* at 51. There are fundamental differences between inductive and deductive reasoning that are important to bear in mind. *Id.* at 49.

[T]he core of the difference between deductive and inductive reasoning lies in the strength of the claim that is made about the premises and its conclusion. In the deductive argument, the claim is that if the premises are true and valid, then the conclusion is true and valid. In the inductive argument, the claim is merely that if the premises are true, the conclusion is more probably true than not.

Id. (citation omitted).

136. For a thorough discussion on the differences between inductive, deductive, and analogical reasoning, see Graham & Adamson, *supra* note 126, at 535-37.

137. *Id.* at 538.

throughout their careers. For example, litigation attorneys play the role of students when they need to learn the law, discover relevant facts, and understand the relevance of those facts. They then become teachers when they have to explain their analysis to their clients or to the court. Each of these steps requires a strong foundation in understanding and applying deductive, inductive, and analogical reasoning.

In his article explaining the importance of the expertise required of a lawyer, Gary Blasi details the essence of what it means to be a lawyer. He explains that lawyering means problem solving and helping one's clients achieve effective solutions to their problems.¹³⁸ An effective lawyer must be able to operate effectively in any condition, familiar or unfamiliar, to diagnose deficiencies and to facilitate the successful resolution of a given problem.¹³⁹ Although a client's problem may be resolved through some legal solution, many problems lawyers confront often involve a substantially unfamiliar non-legal component which the lawyer must also fully understand to better apply the relevant legal principles.¹⁴⁰ There is a great emphasis on "a lawyer's ability to integrate factual and legal knowledge and to exercise good judgment in light of that integrated understanding."¹⁴¹ Successful lawyers are able to tackle new problems of any nature with confidence and skill by relying on and applying the reasoning and learning skills developed and sharpened in law school and practice.¹⁴²

Almost every aspect of a lawyer's job is powered by the use of deductive, inductive, and analogical reasoning.¹⁴³ When discerning a general rule from a series of related cases, lawyers reason inductively.¹⁴⁴ When reading "judicial opinions to determine whether the facts set forth warrant the application of a particular legal principle, [lawyers] employ deductive reasoning skills."¹⁴⁵ In addition, when lawyers "compare a new set of facts to a [previously studied] case," they rely on analogical reasoning.¹⁴⁶

For example, one of the most important skills a lawyer must possess is the ability to synthesize large and varied sources of information into a singular cohesive proposition.¹⁴⁷ This skill is taught in both the doctrinal and skills-based classes. Legal synthesis involves inductive, deductive, and analogical reasoning.¹⁴⁸ Synthesis begins with analogical reasoning, researching and relying on previous cases with similar or relevant fact patterns. A lawyer will

138. Gary L. Blasi, *What Lawyers Know: Lawyering Expertise, Cognitive Science, and the Functions of Theory*, 45 J. LEGAL EDUC. 313, 327 (1995).

139. *Id.* at 326; see also James L. Winokur, *Qualities of a Lawyer: Skills of Lawyering* (2002), http://www.law.du.edu/winokur/Generic%20Course%20files/Skills_of_Lawyering.html.

140. Winokur, *supra* note 139.

141. Blasi, *supra* note 138, at 326.

142. *Id.*; see also Winokur, *supra* note 139.

143. See Graham & Adamson, *supra* note 126, at 538.

144. See *id.*

145. *Id.*

146. See *id.*

147. *Id.* at 541.

148. *Id.* at 542.

then examine the chosen cases, and use the process of induction to develop a legal rule that arises from the several authorities.¹⁴⁹

While inductive reasoning is used to infer a general principle from a particular fact pattern, lawyers also employ inductive reasoning to draw analogies or distinguish facts. An analogy requires reasoning from the particular to the particular, instead of from the particular to the general.¹⁵⁰ To draw an analogy between two or more entities is to ascertain the respects in which they are similar.¹⁵¹ It is a comparison of resemblances.¹⁵² Analogies allow lawyers to argue that “the legal consequence attached to one set of particular facts may apply to a different set of particular facts because of similarities in the two [fact patterns].”¹⁵³

2. The Importance of Teaching Reasoning

No matter the course—doctrinal or skills-based—professors need to do more to teach, explain, and model the different types of legal reasoning regularly. This requires that the professor discuss and explain the types of reasoning used by lawyers, explicitly state when a professor is using a particular type of reasoning in class, model the type of reasoning through questions, and detail when each type of reasoning may be required. As mentioned earlier, many law students come to law school without learning the difference and importance of each type of reasoning.¹⁵⁴ Because deductive, inductive, and analogical reasoning are essential to all skills used by lawyers, professors need to explicitly teach these skills more effectively. By explicitly explaining to the students the different types of reasoning and how those apply to each skill that is being taught, the students begin to understand how to organize material in

149. Graham & Adamson, *supra* note 126 at 542.

150. ALDISERT, *supra* note 135, at 90.

151. *Id.*

152. *Id.*

153. *Id.* For a good discussion on why the use of analogy is one of the most critical legal skills to master, see Graham & Adamson, *supra* note 126, at 544. Analogical reasoning “involves the examination of past case precedent and its application to a subsequent case or a new set of factual circumstances.” *Id.* (citations omitted).

In legal reasoning by analogy, the starting point is the holding or broad principle from a past case. After identifying the principle arising out of the precedent, facts of the presenting case are examined and compared to the facts and circumstances which gave rise to the precedent. After factual similarities and differences are noted, a determination must be made as to the *significance* of the similarities and differences. Significance, in turn, is determined by evaluating whether facts are relevant or irrelevant, disputed or undisputed, or are provable or unprovable.

Id.

154. See *supra* notes 127-28 and accompanying text

new and novel situations,¹⁵⁵ instead of the exact situation that the students are studying at any particular moment.

In a doctrinal class, for example, the professor needs to ask the student what type of reasoning is being applied, in addition to simply questioning a student about a case and applying the case to new hypothetical situations. This will allow the student to think through the problem more thoroughly and make him focus on the process of thinking instead of a particular fact scenario. The goal of using the Socratic method is to give the students practice in analyzing cases, but the skill will be more easily transferred if the students understand the reasons for the specific line of questioning by the professor (i.e., the exact reasoning that is being applied in the analysis of the case). Just like the failure to explain the underlying reason why the quadratic formula works to solve quadratic equations keeps students from ever really knowing when to apply the formula in the future, asking a series of questions in a doctrinal class without explicitly explaining the reasoning that the professor is applying will limit the students' ability to transfer what is being taught. In doctrinal classes, the importance of explicitly discussing the types of reasoning while asking questions through the Socratic method will help the students understand *when*, *why*, and *how* to ask the same questions when they confront new problems and cases on their own.

In skills-based courses, explaining the different types of reasoning and how they are used in legal documents, or in communicating the law, will also allow the student to transfer those skills to new situations. No law student is ever exposed to every type of legal document or the multiple ways to communicate and organize legal analysis. By giving the student a sound foundation in legal reasoning and explaining how that reasoning is applied in the particular skill being taught (i.e., writing a legal memorandum), the student will be able to more effectively understand any variances in the application of the skill. Without a sound foundation in the teaching of reasoning, the regulation of metacognition will be less effective because the student will not know *when* to apply particular cognitive skills.

V. REGULATION OF LEARNING—PLANNING, MONITORING, AND EVALUATING LEARNING

After the students have taken steps to become aware of the task requirements and their personal resources (cognitive knowledge), they need to begin the step of regulating their learning—the planning, monitoring, and evaluating of their learning. In the planning stage, the students need to work on making matches between the task demands and their own personal resources.¹⁵⁶ The planning activities include setting goals, selecting appropriate

155. Rinehart & Platt, *supra* note 29, at 58 (discussing how students who are skilled readers can summarize their reading, while remedial college students “find it difficult and improve with only the most explicit instruction.”).

156. Peggy A. Ertmer & Timothy J. Newby, *The Expert Learner: Strategic, Self-Regulated, and Reflective*, 24 INSTRUCTIONAL SCI. 1, 11 (1996).

strategies for accomplishing the goals, and identifying the obstacles to reaching those goals.¹⁵⁷ Monitoring requires the learner to have an active awareness of what he is doing and planning on what he will do next.¹⁵⁸ Some monitoring strategies include following the learning plan, evaluating whether those steps are still appropriate, and being aware of what he does and does not understand.¹⁵⁹ The evaluation component takes place after the task is completed. Evaluating requires that the students critically look at whether the steps they took resulted in successful learning, whether the goals were met, and whether the anticipated obstacles were avoided or managed.¹⁶⁰ In law school, the final exams and assignments in the skills-based courses give the students the basis for their evaluation.

A. *Playing the "Coach" in the Regulation of Learning*

One of the first roles that a professor or a school can do to help in fostering proper metacognitive strategies is to facilitate the planning of the students' learning.¹⁶¹ As emphasized throughout this article, the law school needs to begin the process of helping the student develop a knowledge of cognition very early in their law school careers— focusing on the task at hand, what they bring to the learning experience, and the "potential matches between the two."¹⁶² Professors, as coaches,¹⁶³ play an essential role in helping the students improve their knowledge of cognition and using that knowledge to help plan their learning.

To help a student plan his learning, professors need to take steps to open a dialogue with the student. One possible way to open the dialogue is to give the students an assessment tool that questions them on their learning. This dialogue leads to more thoughtful and thorough planning. When the students understand how their past experiences and preferences match (or do not match) the cognitive skills required of a lawyer or law student, they can more fully plan their learning. After I discuss the assessment with my students, I can help those students establish a plan for their classes or assignments. The dialogue can also lead to a written plan that sets the goals for the course or assignment, establishes a series of specific steps that the student will take to meet these goals, and details the potential obstacles that may be encountered.

157. Ertmer & Newby, *supra* note 156 at 11.

158. *Id.* at 12.

159. *Id.* at 12-13.

160. *Id.* at 13.

161. *Id.* at 11.

162. *Id.* In helping the students develop plans for learning, the knowledge of cognition component of metacognition is essential. For a discussion on how to help students develop a sound foundation of what they bring to the learning environment and what tasks are required of a lawyer, see *supra* notes 81-155.

163. For a discussion on how professors need to accept their role as coach in the learning process, see Gerdy, *supra* note 79.

For example, if through the assessment, a student tells me that he has never previously used an encyclopedia because all of his research at his undergraduate school was done on the internet, I know that I have to work with the student on how American Law Reports and digests are organized alphabetically.¹⁶⁴ Without this dialogue, I may improperly assess the problem as the student being lazy or lacking any real critical thinking skills.

After facilitating the students' knowledge of cognition, professors can then take several steps to improve the planning, monitoring, and evaluating of learning for their students.¹⁶⁵ Some of these steps include integrating technology into the learning process and modeling metacognitive strategies in class.¹⁶⁶ Other authors have already discussed useful ways that professors can facilitate the regulation of the metacognition learning component, including having students read aloud in class, while vocalizing the parts of the case that are not easy to understand.¹⁶⁷ Others have discussed the importance of the

164. This is taken from a real situation where a student did not understand that a digest volume with "Employee Relations-Federal Courts" on the binder included the topic "False Imprisonment." It was only after discussing the student's past research experience that I understood that he had no experience at any type of book research. Again, this goes with the concept that we must teach the students that we admit, not some ideal students that likely exist in very few numbers, if at all!

165. There is a wealth of material on how metacognition has been integrated into education, from kindergarten to graduate schools. See generally FOGARTY, *supra* note 8; Christopher A. Wolters, *Self-Regulated Learning and College Students' Regulation of Motivation*, 90 J. EDUC. PSYCHOL. 224 (1998); Dorothy H. Evensen, Jill D. Salisbury-Glennon & Jerry Glenn, *A Qualitative Study of Six Medical Students in a Problem-Based Curriculum: Toward a Situated Model of Self-Regulation*, 93 J. EDUC. PSYCHOL. 659 (2001); Kelly A. McGarvey Goudreau, *Self-Regulated Learning in Junior Baccalaureate Nursing Students in Selected Southern Schools of Nursing* (2000) (dissertation, University of Alabama at Birmingham) (available on microform, UMI Number: 9976844).

166. See *supra* notes 122-123 for a discussion of the assessment tools that I use in my class to help students understand what learning preferences and academic experiences they bring to law school and how those can help and hinder appropriate learning in law school.

167. See Boyle, *supra* note 28, at 16. ("The more actively the student questions his or her understanding of the material, the better he or she is likely to grasp the legal concepts."). One of the most thorough attempts to integrate learning theory into the classroom occurs at Western State University College of Law, which offers a program called STELLAR (Self-regulating Technology-equipped Expert Legal Learners Achieving Results). Schwartz, *supra* note 2. As part of the STELLAR program, the law school offered a pilot study in August 2002 called ELLS I (Expert Learning for Law Students), which is still active today. *Id.* at 484. The program provides first year students a two-week instructional course prior to the commencement of the fall semester designed to promote self-regulated learning strategies. *Id.* at 484, 486. The course, designed by Professor Michael Schwartz, focuses on developing students into self-regulated learners. *Id.* at 484-85.

First, the course begins with discussions of the benefits of the self-regulated cycle for law school, bar exam, and law practice in order to foster self-efficacy and help students make attributions about their success and failures. *Id.* at 486. Second, the instruction addresses the overall self-regulated learning cycle so that the students understand why it works. *Id.* at 487. Third, the course offers recurring activities which include "(1) a time management/self-monitoring log, (2) guided journaling, and (3) required quiz outcome predictions combined with evaluations of those predictions and their causes." *Id.* The use of the logs is critical to learning strategy selection, goal setting, self-monitoring, and attention-focusing. *Id.* Fourth, the course integrates the "think aloud technique" where the student or the professor "demonstrate[s] all of

professor modeling his own thought processes and metacognitive strategies in class.¹⁶⁸ For example, the professor could read a case in class while asking himself questions about what he is reading. He could verbalize the facts, statements, or words that may be confusing while asking himself questions about the case. This provides the students examples of what they should be asking themselves when they read cases.¹⁶⁹ By modeling the metacognitive strategies in class and verbalizing his own thought process, the professor avoids the pitfalls of “implicit teaching” that is common when using the Socratic method.

B. Using Technology to Facilitate the Planning, Monitoring, and Evaluating of Learning

For those professors who are limited in the amount of time they can spend teaching and modeling metacognitive strategies, there are several technological tools that can be used in courses to foster more effective learning. The benefits of these tools include: 1) making the students engage in active learning, while forcing them to think about how they are learning, and 2) giving the professor more insight into how the students are learning, the problems they are encountering with the material, and whether the students

[the] thinking steps. . . used in the skill being taught, and then cycled through the rest of the self-regulation phases.” *Id.* at 490. Fifth, the course uses difficult materials. *Id.* As discussed earlier, by using difficult materials, students are able to practice their information-processing in order to minimize the competing cognitive processes and promote repetition and practice in order to facilitate future use of self-regulation. William Y. Lan, *The Effects of Self-Monitoring on Students’ Course Performance, Use of Learning Strategies, Attitude, Self-Judgment Ability, and Knowledge Representation*, 64 J. EXPERIMENTAL EDUC. 101 (1996). Sixth, a chapter of the text provides students with “links to websites that allow[] them to self-assess their personality types and learning style[]” in order to allow the students to select learning strategies during the forethought phase. Schwartz, *supra* note 2, at 490-91. Seventh, students partake in recurring instructional approaches in which they “read about a skill, participate in a demonstration of the skill, practice the skill [] under supervision . . . , try the skill on materials typical of what they will have to learn in their educational program, and then receive feedback on their efforts.” *Id.* at 491. The final exam reinforces all the skills the students have learned and encourages them to apply the skills. *Id.* at 492. Results of the pilot study indicate that 90% of the students demonstrated using forethought to plan a learning strategy, case reading and briefing, and reflecting on and evaluating the efficacy of learning. *Id.* at 505. The student’s course evaluations provided that 100% of the students reported that using expert learning skills would help them do well in law school, 98% stated that the course left them better prepared, 97% stated that the course improved their learning skills, and 92% reported that they were likely to use 12 of the 15 self-regulated learning skills they learned. *Id.*

168. Hartman, *supra* note 8, at 51 (“An important strategy for developing metacognitive knowledge and skills is for teachers to provide models of metacognition in everyday-life and/or school.”).

169. For excellent discussions on how to better facilitate active reading, see RUTH ANN MCKINNEY, *READING LIKE A LAWYER: TIME-SERVING STRATEGIES FOR READING LAW LIKE AN EXPERT* (2005); Debra Moss Curtis & Judith R. Karp, “*In a Case, in a Book, They Will Not Take a Second Look!*” *Critical Reading in the Legal Writing Classroom*, 41 WILLAMETTE L. REV. 293 (2005).

are mastering the material. Listed below are some ways to facilitate the regulation of learning component of metacognition through the use technology.

1. Learning Blogs

Students can establish web logs¹⁷⁰ to use as learning blogs. Learning blogs are electronic versions of a learning journal, and can be used to get the students to focus on their learning.¹⁷¹ Learning blogs should be used to get the students to actively plan and monitor their learning by requiring them to articulate their learning process. The learning blog allows the students to take charge of their learning process, while also giving the professor more insight into the thought processes of the students.

The learning blogs can be used in several different ways and have a variety of purposes. The students can use their learning blogs to plan their learning, write about concerns or obstacles about a topic or case, discuss or “talk out” their learning processes, set goals for the class, topic, or assignment, or ask preliminary questions about a particular issue. The professor can also be more directive in how the learning blog is used. For example, the professor can set the topic for each entry or ask a series of questions for the students to answer.¹⁷² Here is an example of what an entry for a blog could look like:

What I don't Understand about the Concept of Consideration

What does “bargained for exchange” really mean?

What if I promised to make my bed for my mother? Is there consideration?
Is there consideration if she promises not to yell at me?
Is that promise enforceable? Is there enough of a promise to constitute consideration?

What if my mother promised to give me a thousand dollars for my 25th birthday and she does not give it to me? What if I already spent it because she has always given me money on my birthday?

-A. Niedwiecki,
9/15/2005 10:04 a.m

The learning blog does not require any additional resources or a great deal of technological knowledge. The website www.blogger.com is an internet site that the students can use for free. When I have used blogs in my class, I allow

170. A web log, or “blog,” are internet pages that allow authors to easily write their thoughts in a diary format. For examples of blogs, see Blogger, <http://www.blogger.com/start> (last visited Sept. 2, 2006).

171. FOGARTY, *supra* note 8, at 14.

172. Some starter questions might include: “I predict,” “A question I have is,” “This compares to,” or “What I already know about this topic is.” *Id.* at 15.

the students to design their own blogs using www.blogger.com, which is very user-friendly. After they establish their accounts, the students give me their URL addresses, which can be accessed by anyone. This allows me to monitor their blogs on a regular basis without their knowledge. I can then identify any potential issues, prevent problems, and have more insight into my students' learning. Because the blogs are available to anyone with access to the internet, I tell my students that they can make the blogs anonymous by not providing any identifying or personal information on them. To foster some unity in my classes, I have given the students the option of publishing their addresses to the entire class, allowing the students to see that they are having similar ideas, problems, or concerns about the course.

Learning blogs help facilitate the process of metacognition because they require the students to actively think about their learning. The blogs can be a great tool in the students' planning of their learning. For example, before teaching negligence, the professor may require the students to write about what they already know about negligence, what questions they may need answered, what past topics may influence their thinking about negligence, and what potential obstacles they may encounter in their learning. The students may need some direction, so the professor could start with some leading questions, like "what I know about negligence includes," "what I already have questions about," and "what I think I need to do before we start reading about negligence includes." The learning blogs could also be used to give the students an opportunity to express their concerns, questions, and ideas while actually studying the topic. This is probably the most helpful part of the learning blogs because this will give the professors more insight into the students' concerns, questions, and thought processes, while giving the students a chance to monitor their own learning.

2. Message Boards

Most schools provide message boards and chat rooms through their own computer systems. TWEN on Westlaw and Web Courses on LexisNexis also provide message boards for the students to use. A message board is an electronic tool that allows students to post messages on a webpage that corresponds to a particular topic. It is basically a virtual classroom, where the students and professor can have a written discussion outside of the normal classroom. For example, a legal writing professor may post an example of a "Question Presented" for a legal memorandum on the message board and the students can critique and discuss it. Everyone in the class can read all of the posts and comment on what others have said, often providing a lively exchange between students.

The message boards can give the professor an opportunity to gauge the learning of the class and give the students a chance to ask questions. Because the Socratic method requires the interaction of the professor and a few

students, many students become passive learners. Supplementing the classroom with message boards allows the class to be more available to everyone. In utilizing the message boards, the professor gives the students a wider opportunity to actively engage in the learning process.

The topics listed on the message board can focus on the substance of what is being taught or on the learning process. The professor can post topics or questions that focus on the students' understanding of a topic, what they are doing to solve problems, or what may not be understood in a particular case. By requiring the students to engage in a discussion in writing (as opposed to orally), the students are forced to think about their learning more actively. It is much more difficult for most students to write a question than to just stop by the professor's office to ask a question. To make the message boards more useful and involve more active participation, the professor may require that each student be involved in a certain number of discussions each week. The goal should always be to get the students to focus on their learning and to give the professor more information about the learning progress of the students.

3. Using the Comment Function on Microsoft Word

Microsoft Word allows users to insert comments into a document. The comments appear in a balloon next to a particular word or sentence. A person can insert a comment into a paper by clicking on the cursor where he wants to insert the comment, going to "Insert" on the top tool bar, scrolling down to "Comment," and then typing a comment into the balloon that appears.

There are several ways that the comment function can be used to engage the student in thinking about his learning. First, the student can insert comments into drafts of papers, assignments, or practice exams to state why he wrote a particular sentence or paragraph. For example, I have required students who are working on an IRAC format drafting exercise to type comments explaining why they wrote each sentence. By making the students explain why they wrote a particular sentence, they are required to engage in more active learning and to be more deliberate in their thought process. This process requires them to explain their decisions, giving the professor more insight into the students' learning and thought process. I have also allowed my students to insert comments or questions for me to review when I am examining an early draft of a paper.

Another option is to have the students insert comments on a document that is drafted by the professor. The students review the document and insert comments after each sentence, determining the reason for each sentence. Early in my writing course, I will give my students a model memorandum. The students insert comments after each sentence in the memo to show where there is a rule statement, a topic sentence, a fact-to-fact analogy, and so forth. Again, this requires the students to be more active when reviewing a piece of writing. I have found it more effective than just having students read a model answer, which is often done passively and without any true reflection.

4. Online Quizzes

Many software programs or internet sites allow professors to develop quizzes or polls that can test the students knowledge about a particular topic. TWEN on Westlaw and Web Courses on LexisNexis provide easy-to-use tools to develop online quizzes or polls. The quizzes can be simple multiple choice questions that test the students' understanding of cases before they come to class or reinforce a concept learned in class. They may also allow the students to answer practice exam questions or discuss short hypothetical problems, with the computer giving the students a model answer after they developed their own answer. These sites generally allow the professor to track answers and can sometimes even score quizzes for the professor.

The professor can also develop online polls that ask the students questions about any topic without giving the students any feedback. For example, if the professor wants to know whether the students believe a case was wrongly decided, he can poll the students before class and give them an opportunity to explain why. This will allow the professor to ask questions and open discussions about interesting topics that cannot be covered in class due to time constraints. It can also be used to gauge the progress or views of the class, allowing for a more focused discussion in class.

The quizzes and polls allow the students interim opportunities to evaluate their progress. Most courses in law school only give students final exams or a few writing assignments. With the very few opportunities for law students to really chart their progress during the semester, or to evaluate their understanding of the material, the quizzes give the students additional feedback. Allowing the students the constant opportunity to evaluate their progress, the students are able to more fully and consistently plan and monitor their learning. Without additional evaluation tools during the course of the semester, the student is not able to properly evaluate their learning. Online quizzes give the students more information about their progress so they are better able to plan, monitor, and adjust their learning.

VI. CONCLUSION

With the growing push to improve the bar exam passage rate or to help students who may have had less vigorous educational experiences, law schools and professors are looking for ways to help students learn more effectively. Although many professors are beginning to integrate learning theory into their classrooms, there is not enough being done to really teach students to be more self-regulated learners or how to "learn like a lawyer." With the practice of law requiring constant learning, law professors should take several steps to improve the metacognitive skills of the students, including helping the students assess their cognitive knowledge and developing strategies that facilitate the regulation of cognition. If law professors integrate metacognitive

skills into the curriculum, law students may not fall into the same trap that we did in algebra class!

APPENDIX A**

PART ONE- MODES OF LEARNING

For each of the following pairs, place an X along the continuum of how you prefer to learn.

Example: If you prefer to read over lectures, but do get some benefit from lectures, you may place the X as shown below.

	lectures		_____		_____		X		_____		reading
1. lectures			_____		_____		_____		_____		reading
2. reading			_____		_____		_____		_____		discussion
3. discussion			_____		_____		_____		_____		lecture
4. writing			_____		_____		_____		_____		discussion
5. pictures			_____		_____		_____		_____		words
6. color			_____		_____		_____		_____		print (B & W)
7. charts			_____		_____		_____		_____		written narrative
8. audiotapes			_____		_____		_____		_____		reading
9. talking			_____		_____		_____		_____		listening
10. videotape			_____		_____		_____		_____		audiotape

Indicate if the following are true or false about how you recall information:

- T F I remember the idea.
 T F I remember where the idea appears on the page or in my notes.
 T F I remember the illustration, diagram, or chart that the information was in.
 T F I remember what someone said.
 T F I remember what I read.
 T F I remember what I wrote about the information.
 T F I remember the story from which the idea arose.
 T F I remember talking about the idea.

Since coming to law school, which has been the easiest way for you to fully understand the legal material in your substantive law classes (i.e., contracts, torts, etc.)? Circle your answer. Explain your answer on the back of this paper.

- A. By reading the casebook.
 B. By listening to the lectures.
 C. By doing practice exams.
 D. By discussing the material with other people.

** Adapted from the Learning Modes Assessment by M.H. Sam Jacobson as found in M.H. Sam Jacobson, *How Law Students Absorb Information: Determining Modality in Learning Style*, 8 LEGAL WRITING: J. LEGAL WRITING INST. 175, 184 (2002).

E. By outlining the course material.

PART TWO—PAST ACADEMIC EXPERIENCE

If you need any extra space, write on the back of this paper. Make sure to include the question number or letter.

1. What was your undergraduate major?
2. Describe any course work or graduate work you have done beyond your undergraduate degree. Include areas of study or specialty.
3. The following questions relate to your undergraduate and graduate writing experience (excluding law school).
4. How many substantial papers did you write before coming to law school? Substantial papers include anything that required research, such as term or research papers.
5. Describe how you performed research for the papers mentioned in A. Describe how you began your research, if you developed or used any research plans, and the entire process of how you researched.
6. Did you develop a thesis for your papers? How? At what point in the research and writing process? (Before researching? After researching? During researching? While writing?)
7. How did you read the material before you wrote? (i.e., skim, read only pertinent parts, read entire text, or something in between). Please explain.
8. Did you organize your papers before you wrote? If so, how? (i.e., outlines, flow chart, etc.?)
9. What intermediate steps, if any, did you take after you researched but before you began writing?
10. What are your writing strengths and weaknesses?
11. Describe the differences and similarities between legal writing and your previous writing experiences.

