Smarter Law Study Habits: An Empirical Analysis of Law Learning Strategies and Relationship with Law GPA

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ABSTRACT

Non-empirical law school study advice that emphasizes reading and briefing cases and memorizing rules, without frequent self-testing and formative self-assessment leads to a "law school learning trap." Law students fall into a law school learning trap by focusing on memorization of cases and rules for class preparation, putting off "practice" application of the law as exam preparation. Law students and legal educators misjudge the power of testing as a learning tool, and instead rely on non-empirical, anecdotal resources to guide law student study methods.

A legal educator teamed up with an educational psychologist with a particular interest in pedagogical psychology, the study of how students learn, to create a unique Law Student Study Habits Survey to better understand how law students learn. Their groundbreaking empirical research from the Law Student Study Habit Survey shows that practice application of the law through self-testing, self-quizzing, and elaborative strategies positively correlates with academic success in law school, while reading and briefing cases, weak critical reading skills, and rote memorization of rules without practice applying the law negatively correlates with academic success in law school.

Both legal educators and law students need to incorporate testing and formative assessment as a study and learning strategy to learn each new topic, not just for exam preparation. Self-testing and formative assessment are not only critical for success in law school, but help students develop successful learning strategies for the bar exam and as lifelong learners in law practice.

SAINT LOUIS UNIVERSITY LAW JOURNAL   [Vol. 62:361

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I. INTRODUCTION

Law students spend an enormous amount of time studying during their first year, relying heavily on reading and rereading.[1] Most law schools orient incoming students on basic skills of case reading and briefing. However, most law schools do not teach law students *how to study*, how to apply information from reading and briefing to learning the law concepts necessary for academic success, leaving academic preparation to non-empirical law school success resources,[2] and students' own improvised study and learning strategies. Due to a lack of research on law student learning, legal educators and law students do not actually know which law study and learning behaviors lead to success in law school and which merely waste students' time.[3]

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1. Law student reading and studying behaviors refer to many different cognitive steps and activities like reading and highlighting cases, rereading cases, summarizing and briefing cases, going to class, taking notes, outlining, memorizing rules, meeting with study groups, working through practice questions, etc. Edward L. Kimball, Larry C. Farmer & D. Glade Monson, *Ability, Effort, and Performance Among First-Year Law Students at Brigham Young University*, 1981 AM. BAR FOUND. RES. J. 671, 676 (1981) (finding first-year law students study on average fifty-three hours per week outside of class). The Law School Survey of Student Engagement asked first-year law students to estimate how many hours they spent in a typical seven-day week reading assigned textbooks, online class reading, and other course materials. First-year law students estimated they spent thirty-one to thirty-three hours per week reading assigned textbooks, online class reading, and other course materials. LAW SCHOOL SURVEY OF STUDENT ENGAGEMENT, LOOKING AHEAD: ASSESSMENT IN LEGAL EDUCATION 11 (2014).

2. The tried and true study advice in law school success resources can be summarized as: read and brief every case, go to class, take notes, make course outlines, and practice before your exams. In the past fifty years, only three empirical inquiries have targeted law student study behaviors, and two of the three are from 1968, Michael J. Patton, *The Student, The Situation, and Performance During the First Year of Law School*, 21 J. LEGAL EDUC. 10, 10 (1968), and 1975, Guy R. Loftman, *Study Habits and Their Effectiveness in Legal Education*, 27 J. LEGAL EDUC. 418, 419 (1975). In contrast, undergraduate and graduate disciplines have routinely used comprehensive study behavior research instruments since the 1930s. *See, e.g.*, Claire E. Weinstein, Stephen A. Zimmermann & David R. Palmer, *Assessing Learning Strategies: The Design and Development of the LASSI*, *in* LEARNING AND STUDY STRATEGIES: ISSUES IN ASSESSMENT, INSTRUCTION, AND EVALUATION 25 (Claire E. Weinstein, Ernest T. Goetz & Patricia A. Alexander eds., 1988); C. GILBERT WRENN, STUDY-HABITS INVENTORY (1933); Regan A. R. Gurung, Janet Weidert & Amanda Jeske, *Focusing on How Students Study*, 10 J. SCHOLARSHIP TEACHING & LEARNING 28 (2010); Wayne H. Holtzman, William F. Brown & W. G. Farquhar, *The Survey of Study Habits and Attitudes: A New Instrument for the Prediction of Academic Success*, 14 EDUC. & PSYCHOL. MEASUREMENT 726 (1954) [hereinafter SSHA]; Norman M. Locke, *The Student Skills Inventory: A Study Habits Test*, 24 J. APPLIED PSYCHOL. 493 (1940); *see also* Noel Entwistle & Velda McCune, *The Conceptual Bases of Study Strategy Inventories*, 16 EDUC. PSYCHOL. REV. 325 (2004).

3. Legal scholars have lamented the lack of empirical research in legal scholarship in general. James R. P. Ogloff, David R. Lyon, Kevin S. Douglas & V. Gordon Rose, *More than "Learning to Think Like a Lawyer:" The Empirical Research on Legal Education*, 34 CREIGHTON L. REV. 73, 99 (2001) ("Perhaps it is surprising that so little research attention has been paid to the study habits that students employ to help them navigate their way through the obstacles of law school."). *See*

Cognitive science research on study and learning strategies shows that undergraduate students *overwhelmingly* rely on passive, ineffective strategies, like reading and rereading, instead of active, effective strategies like retrieval, self-testing, and periodic review, which increase learning and gauge comprehension.[4] Undergraduate students are able to get by and matriculate using ineffective, passive learning strategies, but also develop illusions of confidence in ineffective strategies, and continue to use these ineffective learning and study strategies in law school.

This Article shows that law students unwittingly fall into a "law school learning trap"[5] by relying on passive strategies like reading, rereading, and briefing cases without testing whether they are learning through active strategies. Law students can avoid the law school learning trap by using active strategies, like retrieval, self-testing, and elaboration, which increase learning, test what students know and do not know, and provide critical formative self-assessment and opportunities for correction.[6] Few legal educators offer formative assessment such as weekly quizzes or midterm exams.[7] Law students that do not use self-testing and formative self-assessment may not realize they have fallen in to the law school learning trap until sitting for final exams.

The stakes are high for law students and legal educators. First-year law students who do well academically win coveted access to law review,

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generally Steven Friedland, *A Critical Inquiry into the Traditional Uses of Law School Evaluation*, 23 PACE L. REV. 147, 149 (2003) ("[Although] testing has been a steadfast fixture of legal education since the late 1700s . . . . comparatively few institutional resources have been devoted to the evaluation process, and both institutions and individual instructors generally hold the evaluation process with a similar lack of regard." (footnote omitted)); Peter H. Schuck, *Why Don't Law Professors Do More Empirical Research?*, 39 J. LEGAL EDUC. 323, 323 (1989); Matthew Spitzer, *Evaluating Valuing Empiricism (at Law Schools)*, 53 J. LEGAL EDUC. 328, 331 (2003) (discussing ways to promote empirical research in legal scholarship).

4. PETER C. BROWN, HENRY L. ROEDIGER III & MARK A. MCDANIEL, MAKE IT STICK: THE SCIENCE OF SUCCESSFUL LEARNING 10, 15 (2014).

5. I use the term "law school learning trap" to describe a law student study pattern where a student follows the conventional, tried and true study advice of reading and briefing cases to prepare for class, goes to class and takes notes, makes course outlines, memorizes black letter law, but does not review or engage in any retrieval or practice testing, which leads to a mistaken belief that reading and briefing for class is sufficient to learn the material in law school. Students who follow this pattern often do not test their knowledge with practice questions or hypothetical factual situations.

6. As this Article will discuss, relying on reading and rereading cases and other passive learning and study strategies in law school without engaging in active strategies like retrieval and self-testing correlates with poor academic performance. *Infra* Section IV.C. First-year law students fall into the law school learning trap because reading and briefing cases to prepare for class is time consuming, resulting in a fluency and familiarity that creates illusions of confidence with the material. *See* BROWN ET AL., *supra* note 4, at 15–17 and the discussion at *supra* note 5.

7. *See* Rogelio A. Lasso, *Is Our Students Learning? Using Assessments to Measure and Improve Law School Learning and Performance*, 15 BARRY L. REV. 73, 81–83 (2010).

scholarships, job interviews, possible transfers to more prestigious law schools, and higher bar passage rates.[8] First-year law students with poor academic performance are denied access to prestigious opportunities, lose scholarships, face academic dismissal, and experience higher bar failure rates.[9]

The law school learning trap, specifically the lack of formative assessment, unsound teaching and testing methods, and continued reliance on summative assessment, adds to the stressful, corrosive, and dehumanizing nature of the law school learning environment on law students' wellbeing, values, and motivation.[10] Legal scholars have written extensively on the dehumanizing nature of law school and the need to provide law students with self-determination and autonomy support.[11] Law students need to feel that they are

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8. Carolyn J. Nygren, *Starting off Right in Law School*, 29 STETSON. L. REV. 1121, 1121 (2000). Law school is competitive and law students are obsessed with their academic standing. Students are highly motivated to engage in behaviors that will result in higher grades, especially in light of the mandatory grade curves at most law schools. First-year law grade point average ("LGPA") will also determine whether students are eligible for merit based scholarships, whether they can retain scholarships gained upon entry, eligibility for law review and moot court, eligibility for on-campus interview spots, and whether or not they are placed on academic probation or worse, academically dismissed. Vernellia R. Randall, *Increasing Retention and Improving Performance: Practical Advice on Using Cooperative Learning in Law Schools*, 16 T.M. COOLEY L. REV. 201, 207, 214 (1999); *see also* Bruce M. Price & Sara Star, *The Elephant in the Admissions Office: The Influence of* U.S. News & World Report *on the Rise of Transfer Students in Law Schools and a Modest Proposal for Reform*, 48 U.S.F. L. REV. 621, 621–22 (2013). Several articles discuss LGPA as more predictive of higher bar passage rates than the Law School Admission Test ("LSAT"), especially for doctrinal classes. Katherine A. Austin, Catherine Martin Christopher & Darby Dickerson, *Will I Pass The Bar Exam?: Predicting Student Success Using LSAT Scores and Law School Performance*, 45 HOFSTRA L. REV. 753, 783 (2017) (demonstrating that LGPA is a statistically significant indicator of bar exam success); Nicholas Georgakopoulas, Bar Passage: GPA and LSAT, Not Bar Reviews 21 (Sept. 19, 2013) (unpublished Legal Studies Research Paper No. 2013-30, Robert H. McKinney School of Law), https://papers.ssrn.com/sol3/papers.cfm?ab stract-id=2308341 (last visited Mar. 6, 2018) (concluding that LGPA strongly correlates with bar passage); Keith A. Kaufman et al., *Passing the Bar Exam: Psychological, Educational, and Demographic Predictors of Success*, 57 J. LEGAL EDUC. 205, 217–18 (2007).

9. The American Bar Association collects data on the number of students academically dismissed from law schools. *Section of Legal Education—ABA Required Disclosures*, ABA, http://www.abarequireddisclosures.org/ [https://perma.cc/CY46-9NLG]. For 2016, law schools reported academic dismissals after the first year of law school, some as high as thirty percent of first-year students. *Id.* For example, Charlotte School of Law reported 130 academic dismissals after the first year out of 391 first-year students. *Id.* For a discussion of the experiences of academically dismissed minority law students, see Erin Lain, *Experiences of Academically Dismissed Black and Latino Law Students: Stereotype Threat, Fight or Flight Coping Mechanisms, Isolation and Feelings of Systemic Betrayal*, 45 J.L. & EDUC. 279 (2016).

10. Kenneth M. Sheldon & Lawrence S. Krieger, *Does Legal Education Have Undermining Effects on Law Students? Evaluating Changes in Motivation, Values and Well-Being*, 22 BEHAV. SCI. & L. 261, 283 (2004).

11. *Id.* at 262. "Potential negative aspects of legal education include excessive workloads, stress, and competition for academic superiority, institutional emphasis on comparative grading,

good at what they are doing—namely, studying and learning in law school—or that they can become good at it.[12]

Law schools are under increasing pressure to prove that legal education works and is worth the cost. The American Bar Association is putting more pressure on law schools to comply with accreditation requirements[13] and to assess law student learning using "formative and summative assessment methods in its curriculum to measure and improve student learning and provide meaningful feedback to students."[14] Law student enrollment continues to decline, adding to the looming threat of failing law schools.[15]

Law students also need to understand effective learning strategies to be effective lifelong learners.[16] Law learning does not stop with the bar exam. After

. . . [and] lack of clear and timely feedback . . . ." *Id.*; *see also* Michael Hunter Schwartz, *Humanizing Legal Education: An Introduction to a Symposium Whose Time Came*, 47 WASHBURN L. J. 235, 239–41 (2008); Louis N. Schulze, Jr. & A. Adam Ding, *Alternative Justifications for Academic Support III: An Empirical Analysis of the Impact of Academic Support on Perceived Autonomy Support and Humanizing Law Schools,* 38 OHIO N.U. L. REV. 999, 1005–06, 1040–41 (2011).

12. According to Sheldon and Krieger, providing information about empirically supported law study behaviors supports self-determination theory and helps to humanize legal education. Sheldon & Krieger, *supra* note 10, at 263, 281.

13. In 2016 and 2017, the America Bar Association censured Ave Maria School of Law and Valparaiso Law School for non-compliance with admissions standards and placed Arizona Summit Law School and Charlotte Law School on probation for substandard admissions policies and low bar pass rates. Ashley A. Smith, *Crackdown on For-Profit Law Schools*, INSIDE HIGHER ED (Apr. 6, 2017), https://www.insidehighered.com/news/2017/04/06/aba-cracks-down-low-performing-law-schools-wake-criticism-feds [https://perma.cc/H99V-AX5N].

14. AMERICAN BAR ASSOCIATION, ABA STANDARDS AND RULES OF PROCEDURE FOR APPROVAL OF LAW SCHOOLS 23 (2017). ("Standard 314. Assessment of Student Learning[:] A law school shall utilize both formative and summative assessment methods in its curriculum to measure and improve student learning and provide meaningful feedback to students."); s*ee also* GREGORY S. MUNRO, OUTCOMES ASSESSMENT FOR LAW SCHOOLS 26–27 (2000); Janet W. Fisher, *Putting Students at the Center of Legal Education: How an Emphasis on Outcome Measures in the ABA Standards for Approval of Law Schools Might Transform the Educational Experience of Law Students*, 35 S. ILL. U. L.J. 225, 226–27 (2011); Lasso, *supra* note 7, at 75–76.

15. Law school applications continue to decline year after year. Several law schools are either closing permanently or are in severe economic distress. In October 2016, Indiana Tech Law School announced that it would close in June 2017. *Indiana Tech Law School to Close in June 2017*, INDIANA TECH (Oct. 31, 2017), https://www.indianatech.edu/news/indiana-tech-law-school-to-close-in-june-2017/ [https://perma.cc/3ZG2-GYRN]. In April 2017, Whittier Law School announced that it would not accept incoming students for the 2017-2018 academic year, would graduate the existing students, and then close the law school. Alan Lurid, *A Message from the Whittier College Board of Trustees*, WHITTIER LAW SCHOOL (Apr. 19, 2017), https://www.law.whittier.edu/index/news/article/a-message-from-the-whittier-college-board-of-trustees [https://perma.cc/M6CZ-LHSD].

16. *See* Anthony Niedwiecki, *Teaching for Lifelong Learning: Improving the Metacognitive Skills of Law Students Through More Effective Formative Assessment Techniques*, 40 CAP. U. L. REV. 149, 151 (2012).

admission to practice, lawyers are expected to continue learning and mastering complicated material to effectively represent clients.

Legal educators and law students need empirical research to evaluate whether the law student study and learning methods actually work.[17] This Article provides empirical correlation of law student study and learning strategies to academic success in law school and finds that passive learning strategies like reading and rereading without practice applying the law is negatively correlated with law school academic success, while active learning strategies like retrieval, self-testing, and elaboration that involve practice applying the law are positively correlated with law school academic success. Part II summarizes existing cognitive science research on undergraduate study and learning strategies and existing research on law student study behaviors. Part III discusses the development and administration of the Law Student Study Habits Survey. Part IV discusses the results of the research. Part V makes recommendations based on the results.

II. COGNITIVE SCIENCE RESEARCH ON STUDY AND LEARNING STRATEGIES

Hundreds of empirical studies have examined undergraduate study and learning behaviors,[18] demonstrating a clear link between study behaviors and academic performance that are as statistically significant as the relationship between academic performance and the two most frequently used predictors: prior academic performance (grade point average, "GPA") and test scores (ACT, SAT, etc.).[19]

Undergraduate researchers have developed and used research instruments to assess which study behaviors are correlated with academic success—the study habits, skills, and attitudes themselves,[20] the depth of information processing during study, and students' metacognitive awareness while studying.[21] The

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17. *See* Kathryn Zeiler, *The Future of Empirical Legal Scholarship: Where Might We Go from Here?*, 66 J. LEGAL EDUC. 78, 80–86 (2016) (acknowledging the value of credible empirical legal scholarship, and providing recommendations for improving empirical legal scholarship).

18. *See* JOHN A. C. HATTIE, VISIBLE LEARNING: A SYNTHESIS OF OVER 800 META-ANALYSES RELATING TO ACHIEVEMENT 22 (2009).

19. Marcus Credé & Nathan R. Kuncel, *Study Habits, Skills, and Attitudes: The Third Pillar Supporting Collegiate Academic Performance*, 3 PERSPEC. ON PSYCHOL. SCI. 425, 444 (2008); *see also* HATTIE, *supra* note 18, at 22.

20. Study skills are the student's knowledge of study strategies and ability to manage time and resources to accomplish the academic task. Study habits are the degree and regularity with which the student uses specific acts of studying (e.g., reviews of material) in an appropriate environment. Study attitudes refer to a student's positive attitude toward studying and acceptance of the education goals. Credé & Kuncel, *supra* note 19, at 428–29.

21. *Id.* at 427. Early undergraduate research instruments on study behaviors include the Study-Habits Inventory developed in 1933, WRENN, *supra* note 2, at 4; the Student Skills Inventory developed in 1940, Locke, *supra* note 2, at 503; and the SSHA developed in 1954, Holtzman et al., *supra* note 2, at 726. The most widely used survey is the Learning and Study Strategies Inventory

bottom line is the time spent studying does not predict academic success.[22] The *quality* of the time spent studying, determined by the specific behaviors and strategies used by the learner, determines the academic success.[23]

A.   *Undergraduate Study and Learning Strategy Research*

Retrieval, self-testing, and periodic review are learning super foods, powering our brains for long-term learning; rereading and cramming are learning junk foods, feels good, but bad for learning. Retrieval, self-testing, and periodic review are highly correlated with academic success.[24] Yet, these active learning strategies are counter-intuitive and challenge conventional ideas about studying.[25] Despite robust research proving their efficacy, students either do not know about these effective learning strategies or do not trust them, and over-rely

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("LASSI"), which was initially developed in the late 1980s. Christine M. Schutz, Leanne Dalton & Rodger E. Tepe, *Learning and Study Strategies Inventory Subtests and Factors as Predictors of National Board of Chiropractic Examiners Part 1 Examination Performance*, 27 J. CHIROPRACTIC EDUC. 5, 5 (2013); Weinstein et al., *supra* note 2, at 28. LASSI has been widely used to measure undergraduate students' study habits as well as students' motivation and awareness of how their study habits relate to their learning. *LASSI (Learning And Study Strategies Inventory)*, H&H PUBLISHING (2017), http://www.hhpublishing.com/_assessments/LASSI/index.html [https://per ma.cc/L3UB-BWB2].

22.   Undergraduate students spend an average of thirteen hours per week studying, down from an average of twenty-four hours per week in the 1960s, and only one in four college students devote more than twenty hours a week to studying, which is relatively consistent across demographics. RICHARD ARUM & JOSIPA ROKSA, ACADEMICALLY ADRIFT: LIMITED LEARNING ON COLLEGE CAMPUSES 3–4 (2011); *see also* RICHARD ARUM, JOSIPA ROKSA & ESTHER CHO, IMPROVING UNDERGRADUATE LEARNING: FINDINGS AND POLICY RECOMMENDATIONS FROM THE SSRC-CLA LONGITUDINAL PROJECT 3 (2011); Christine P. Bartholomew, *Time: An Empirical Analysis of Law School Time Management Deficiencies*, 81 U. CIN. L. REV. 897, 9074 (2013); Sarath A. Nonis & Gail I. Hudson, *Performance of College Students: Impact of Study Time and Study Habits*, 85 J. EDUC. FOR BUS. 229, 236 (2010) (focusing not just on time spent studying but on how effectively the student spends time studying that influences academic performance, study results did not demonstrate a significant direct relationship between the amount of study time and academic performance); E. Ashby Plant et al., *Why Study Time Does Not Predict Grade Point Average Across College Students: Implications of Deliberate Practice for Academic Performance*, 30 CONTEMP. EDUC. PSYCHOL. 96, 97 (2005) ("[R]esearchers have consistently found a weak or unreliable relationship between the weekly amount of reported study time and [GPA] for college students."); Credé & Kuncel, *supra* note 19, at 426 ("Programs that focus on the acquisition of specific study skills are likely to be particularly useful in light of the consistent finding that the amount of studying (time spent studying) is largely unrelated to academic performance.").

23.   Nonis & Hudson, *supra* note 22, at 229; Plant et al., *supra* note 22, at 112.

24.   *See generally* BENEDICT CAREY, HOW WE LEARN: THE SURPRISING TRUTH ABOUT WHEN, WHERE, AND WHY IT HAPPENS 94–95 (2014); Bennett L. Schwartz et al., *Four Principles of Memory Improvement: A Guide to Improving Learning Efficiency*, 21 INT'L J. CREATIVITY & PROBLEM SOLVING 7, 7 (2011) (discussing four principles of memory improvement: (1) actively processing material, (2) retrieval practice, (3) distributed practice (i.e., spacing), and (4) metamemory); BROWN ET AL., *supra* note 4, at 201–03.

25.   *See, e.g.*, BROWN ET AL., *supra* note 4, at 201; CAREY, *supra* note 24, at 95.

on ineffective tried and true learning strategies cobbled together through common sense, intuition, and trial and error.[26]

Retrieval, self-testing, and periodic review require more effort and planning than the most commonly used study methods, rereading, and cramming.[27] Retrieval, self-testing, and periodic review also create desirable difficulties yielding deeper, more durable learning.[28] But, when students perceive studying as hard, they incorrectly believe they are not learning and resort to easier study and learning methods, like rereading and cramming. When the learning feels easy, students mistakenly believe that material is well-learned.[29] But, the learning gains are short term and quickly fade. Easy come, easy go.

Cognitive science and empirical research prove much of what we think we know about learning is wrong. When learning feels hard, it actually sticks and lasts longer.[30] Forgetting is part of learning.[31] Mistakes during learning are good because they show knowledge gaps and create opportunities for clarification and consolidation.[32] Rereading tricks us into thinking we learn more than we actually

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26. Robert A. Bjork, John Dunlosky & Nate Kornell, *Self-Regulated Learning: Beliefs, Techniques, and Illusions*, 64 ANN. REV. PSYCHOL. 417, 419 (2013); BROWN ET AL., *supra* note 4, at 8, 21. Our intuitions about how to learn are an unreliable guide as to how we should manage our learning activities. We assume that "children and adults do not need to be taught how to manage their learning activities." Bjork, *supra*, at 419. Colleges and universities are more concerned about whether incoming students have necessary background knowledge in important domains (i.e., English, math, etc.), but do not test whether students have the necessary learning skills to effectively learn. *Id.*; *see also* Jennifer McCabe, *Metacognitive Awareness of Learning Strategies in Undergraduates*, 39 MEMORY & COGNITION 462, 462 (2011); Veronica X. Yan, Khanh-Phuong Thai & Robert A. Bjork, *Habits and Beliefs That Guide Self-Regulated Learning: Do They Vary with Mindset?*, 3 J. APPLIED RES. MEMORY & COGNITION 140, 146 (2014).

27. *See, e.g.*, BROWN ET AL., *supra* note 4, at 19–20; CAREY, *supra* note 24, at 94; *see also* Jeffrey D. Karpicke, Andrew C. Butler & Henry L. Roediger III, *Metacognitive Strategies in Student Learning: Do Students Practice Retrieval When They Study on Their Own?*, 17 MEMORY 471, 478 (2010). Rereading, highlighting, underlining, and poring over notes and texts are the most commonly used study strategies. BROWN ET AL., *supra* note 4, at 15.

28. Desirable difficulties refer to learning conditions that are challenging and seem to slow down learning, but actually improve long-term learning, retention, and transfer. Bjork et al., *supra* note 26, at 434. Self-testing using retrieval and free recall is a common type of desirable difficulty, as well as periodic review, interleaving, and generating answers. *See also* Elizabeth M. Bloom, *Creating Desirable Difficulties: Strategies for Reshaping Teaching and Learning in the Law School Classroom* 11 (New England Law: Bos., Paper No. 17-04, 2017), https://papers.ssrn.com/sol3/pa pers.cfm?abstract_id=2951961 (last visited Mar. 6, 2018).

29. BROWN ET AL., *supra* note 4, at 17. Students express a bias for error-free learning, mistakenly believing that errors in learning are learning failures, instead of a part of the learning process itself. *Id.* at 7, 201.

30. *Id.* at 4.

31. *Id.* at 205.

32. *Id.* at 4, 62–63.

do.[33] Learning is messy and non-linear, less a steady incline than a series of starts, turns, dead-ends, reroutes, and explosive speed. What works best for learning may not be intuitive, but it can be explicitly taught and it assists students in becoming self-regulated, expert learners.

1. Retrieval and Self-Testing

Retrieval is an empirically proven learning tool, more powerful than reading, rereading, or any other act of memorization. Retrieving information from memory and "testing" your knowledge leads to deeper learning than the more popular study behaviors of memorization and rereading.[34] Every time information is retrieved, it better connects to other learned material, and becomes more accessible in the future because retrieval and testing creates better organization of knowledge.[35]

Retrieval is much more than an assessment of one's knowledge—*the retrieval process creates learning while gauging learning depth*.[36] The harder the information is to retrieve, the harder the brain must work to dig it up, the greater the learning.[37] Retrieving information from memory is different and harder than just *seeing* the information again, as in rereading.[38]

The testing effect is a well-established cognitive science principle that engaging in testing, a type of retrieval practice, enhances long-term retention compared to rereading or other passive studying activities.[39] Retrieval and testing also improves transfer and knowledge of new contexts.[40] Using retrieval

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33. The author's prior article described these research findings in detail. Jennifer M. Cooper, *Smarter Law Learning: Using Cognitive Science to Maximize Law Learning*, 44 CAP. U. L. REV. 551, 575 (2016).

34. BROWN ET AL., *supra* note 4, at 28; Karpicke et al., *supra* note 27, at 471.

35. *See* Franklin M. Zaromb & Henry L. Roediger III, *The Testing Effect in Free Recall is Associated with Enhanced Organizational Processes*, 38 MEMORY & COGNITION 995, 1005 (2010). Retrieval and testing creates better organization of knowledge. *Id.*

36. Jeffrey D. Karpicke & Phillip J. Grimaldi, *Retrieval-Based Learning: A Perspective for Enhancing Meaningful Learning*, 24 EDUC. PSYCHOL. REV. 401, 402 (2012).

37. CAREY, *supra* note 24, at 94.

38. *Id.* Retrieval is not just a "read-out" of stored knowledge; the act of retrieving itself creates learning. Jeffrey D. Karpicke & Janell R. Blunt, *Retrieval Practice Produces More Learning than Elaborative Studying with Concept Mapping*, 331 SCIENCE, 772, 774 (2011). The harder it is to retrieve something from memory, the more effort required to retrieve the information, creates a desirable difficulty, and makes the memory stick. BROWN ET AL., *supra* note 4, at 82.

39. *See* Henry L. Roediger III & Bridgid Finn, *The Pluses of Getting It Wrong*, 21 SCI. AM. MIND 38, 40 (2010); Zaromb & Roediger III, *supra* note 35, at 997. The testing effect promotes learning rather than just assessing learning. *Id.* at 1005.

40. Henry L. Roediger III, Adam L. Putnam & Megan A. Smith, *Ten Benefits of Testing and Their Applications to Educational Practice*, 55 PSYCHOL. LEARNING & MOTIVATION 1, 14 (2011). Repeated testing spaced over time led to improved transfer of complex material to new questions in a new domain compared to restudying material. Andrew C. Butler, *Repeated Testing Produces Superior Transfer of Learning Relative to Repeated Studying*, 36 J. EXPERIMENTAL PSYCHOL.:

practice, such as practice questions or self-quizzing, even reduces test anxiety and protects our memories from stress.[41] Retrieval and the testing effect are effective learning tools, dispel illusions of competence, and help students accurately gauge their learning progress.[42] Retrieval and testing are valuable formative self-assessment tools that students can use on their own to provide feedback on their learning progress.

Yet, rereading is by far the most commonly used study and learning strategy.[43] The vast majority of students steadfastly believe the best way to learn is to read and reread and reread again in a single study session until material is learned.[44] Students incorrectly believe that rereading creates more learning and that testing merely measures what has been learned to receive a grade.[45] Massed repetition and rereading create an illusion of competence and a false sense of learning, while retrieval and self-testing improve competence and accurately gauge what has been learned.[46]

LEARNING, MEMORY, & COGNITION 1118, 1128 (2010) (finding "test-enhanced learning" increases long-term retention and promotes transfer to new inferential questions from different knowledge domains better than restudying).

41. Amy M. Smith, Victoria A. Floerke & Ayanna K. Thomas, *Retrieval Practice Protects Memory Against Acute Stress*, 354 SCIENCE 1046, 1047 (2016) ("Whereas we did find memory retrieval impairment during the delayed stress response when information was encoded by restudying, that impairment was absent when information was encoded by retrieval practice. Thus, we argue that stress may not impair memory retrieval when stronger memory representations are created during encoding.").

42. Jeffrey D. Karpicke, *Retrieval-Based Learning: Active Retrieval Promotes Meaningful Learning*, 21 CURRENT DIRECTIONS IN PSYCHOL. SCI. 157, 157 (2012).

43. BROWN ET AL., *supra* note 4, at 15; Karpicke et al., *supra* note 27, at 475.

44. BROWN ET AL., *supra* note 4, at 15.

> The finding that rereading textbooks is often labor in vain ought to send a chill up the spines
> of educators and learners, because it's the number one study strategy of most people—
> including more than [eighty] percent of college students in some surveys—and is central in
> what we tell ourselves to do during the hours we dedicate to learning.

Id. at 8–10.

45. Karpicke, *supra* note 42, at 158. Many students believe that studying means rereading material over and over and that "practicing" or "self-testing" is only to assess what one has learned through rereading. To study for an upcoming test, students were given a choice; after you read through your notes and the text, which would you do next: (a) go back and restudy the material (all or parts), (b) try to recall the material, or (b) do some other study activity. The majority of students chose to reread their notes or the text, but very few students attempted to recall the material. The choice to repeatedly read and reread material is logical if learning is only the process of encoding or inputting information and if retrieval is only a way to assess prior learning. *Id.*

46. BROWN ET AL., *supra* note 4, at 15–16. Retrieval and self-testing help to calibrate one's learning. *Id.* at 4–5.

2.   Periodic Review

As soon as we learn something new, we start to forget it.[47] By periodically retrieving learned information, we slow the forgetting process. During periodic review or spacing study, the opposite of cramming or massing study, learners retrieve material after a period of time—days or weeks—has elapsed between study sessions to allow for forgetting before the next retrieval attempt.[48] Spacing multiple study sessions over time is far superior to massing study in any single session because retrieval practice spaced over time *stops the forgetting process*.[49]

But, spacing study *feels less effective* as students have to work harder to retrieve information from days or even weeks ago.[50] When students learn a topic and wait a week or two to review the same material, the information is hard to recall and students feel like they are relearning material they already learned.[51]

Like rereading, massing study creates illusions of competence when material that is easier to recall is judged better learned than material that is harder to recall.[52] This is counter-intuitive because massing study works, only as long as a test is *immediately after the massed study*.[53] But, what if the test is given a week or more later? Spacing study requires time between study sessions where information is forgotten, requiring students to retrieve or recall the previously

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47.   HERMANN EBBINGHAUS, MEMORY: A CONTRIBUTION TO EXPERIMENTAL PSYCHOLOGY 62 (Henry A. Ruger & Clara E. Bussenius trans., 1998) (1885). "All sorts of ideas, if left to themselves, are gradually forgotten." *Id.* After only one hour, we have forgotten fifty percent of the material we just studied; after twenty-four hours, we have forgotten seventy-five percent of the material. *Id.* at 76–79.

48.   Jonathan A. Susser & Jennifer McCabe, *From the Lab to the Dorm Room: Metacognitive Awareness and Use of Spaced Study*, 41 INSTRUCTIONAL SCI. 345, 345 (2013); BROWN ET AL., *supra* note 4, at 204. How much "space" or forgetting is helpful? Enough time so that some forgetting has occurred so that retrieval will be more effortful, but not so much space or forgetting that you have to relearn the material. Because time periods between learning helps material consolidate, which includes sleeping, at least a day in between review sessions. *Id.* at 63–64.

49.   BROWN ET AL., *supra* note 4, at 203.

50.   *Id.*

51.   Periodic retrieval of learned material also creates a desirable difficulty. *Id.* at 82.

52.   Bjork et al., *supra* note 26, at 427. Students mistakenly believe that massing *creates more learning* because it creates "*retrieval fluency*," information is easier to recall during massed study sessions, which is perceived as better learning. *Id.* In massed study, students pay *less* attention to the second presentation of an item, but pay *more* attention to the second presentation of an item in *spaced study*. In massed study, the material is familiar the second time it is presented and students are often more accurate the second time, requiring less effort the second time the material is presented. *Id.* at 426–27.

53.   BROWN ET AL., *supra* note 4, at 31.

studied material.[54] The less accessible the memory, the more learning occurs when it is recalled and restudied.[55]

One of the criticisms of retrieval is that it is only beneficial for memorization and other lower-order thinking and learning tasks.[56] However, successive retrieval-based learning spaced over periods of time helps learners develop complex knowledge structures, connect and integrate new information to prior knowledge structures, and build depth and complexity with each successful retrieval and consolidation cycle.[57] This process differentiates novices from experts in a field. When experts retrieve information, experts retrieve an entire integrated network of existing, interconnected information built over multiple retrieval and consolidation cycles spaced over years.

3. Other Highly Effective Study and Learning Behaviors

Mixing up, or interleaving, different topics when engaging in retrieval and self-testing dramatically increases the studying difficulty and also the learning returns.[58] Interleaving creates space between retrieval attempts by mixing up the subjects, putting more time between testing attempts, forcing learners to distinguish between subjects, and creating deeper understanding with material.[59] Again, this finding is counter-intuitive to the conventional method of blocked practice—concentration on the same topic or skill during a single study or practice session.[60] Learners also resist interleaving because it is much more

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54. *Id.* at 63. The spacing effect and the testing effect are similar and interrelated study methods as spaced study inevitably requires retrieval and self-testing in order to recall previously studied information. *Id.* at 63–66.

55. *Id.* at 63.

56. Roediger III et al., *supra* note 40, at 40. Repeated testing spaced over time led to improved transfer of complex material to new questions in a new domain compared to restudying material. *Id.*

57. *See* Jeffrey D. Karpicke & William R. Aue, *The Testing Effect Is Alive and Well with Complex Materials*, 27 EDUC. PSYCHOL. REV. 317, 317–18, 322 (2015).

58. Henry L. Roediger III & Andrew C. Butler, *The Critical Role of Retrieval Practice in Long-Term Retention*, 15 TRENDS IN COG. SCI. 20, 20, 25 (2011); BROWN ET AL., *supra* note 4, at 46–66; *see also* Monica S. Birnbaum et al., *Why Interleaving Enhances Inductive Learning: The Roles of Discrimination and Retrieval*, 41 MEMORY 392, 393, 400–01 (2013). Mixing up your retrieval practice by interleaving two or more subjects is also a type of spacing that helps students to discriminate between different types of problems and select the correct strategy to apply. BROWN ET AL., *supra* note 4, at 65. Interleaving means "mixing related but distinct material during study." CAREY, *supra* note 24, at 163–64. The mixing of material, skills, and concepts during study, especially over the long term, helps not only to see distinctions, but also helps to grasp individual concepts. *Id.* Interleaving or varying practice is also harder, requires more effort, and feels slower; therefore, it is unpopular and seldom used. BROWN ET AL., *supra* note 4, at 50.

59. BROWN ET AL., *supra* note 4, at 65.

60. Allison Belger, *Blocked Practice v. Random Practice: Shake Things Up in Your Training and in Your Life*, PSYCHOLOGYWOD (Aug. 18, 2013), https://psychologywod.com/2013/08/18/

difficult and feels counter-productive, even though research proves its efficacy.[61]

Elaboration is also an effective learning strategy that uses retrieval to relate newly learned information to existing knowledge by self-explanation, putting the information into "your own words," or explaining steps used during problem solving.[62] Elaboration requires retrieving newly learned material and prior knowledge and helps learners develop mastery by finding additional layers of meaning in newly learned material.[63] Different ways to incorporate elaboration as a learning strategy are to relate new material to what you already know about a subject, summarize or paraphrase by putting information in your own words, or personalize the information by relating it to your own life.[64]

Reflection is a combination of retrieval and elaboration where a learner reflects or reviews on information, a past event, or a skill, and asks themselves a series of questions to evaluate what went well and what did not.[65]

While these study and learning strategies are highly effective for undergraduate study, are they as effective and correlated with academic success for law study?

B. *Law Student Study and Learning Strategy Research*

Very little empirical, data-driven legal scholarship has analyzed which law student learning and study behaviors lead to academic success in law school.[66]

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blocked-practice-vs-random-practice-shake-things-up-in-your-training-and-in-your-life/ [https://perma.cc/X3DV-4PKM].

61. Steven C. Pan, *The Interleaving Effect: Mixing It Up Boosts Learning*, SCIENTIFIC AMERICAN (Aug. 4, 2014), https://www.scientificamerican.com/article/the-interleaving-effect-mix ing-it-up-boosts-learning/ [https://perma.cc/X57W-S4AW]; Maryellen Weimer, *Interleaving: An Evidence-Based Study Strategy*, FACULTY FOCUS (Jan. 18, 2017), https://www.facultyfocus.com/ articles/teaching-professor-blog/interleaving-evidence-based-study-strategy/ [https://perma.cc/XS G3-D2GC].

62. BROWN ET AL., *supra* note 4, at 207. *See generally* John Dunlosky et al., *Improving Students' Learning with Effective Learning Techniques: Promising Directions from Cognitive and Educational Psychology*, 14 PSYCHOL. SCI. PUB. INTEREST 4, 11 (2013).

63. A.S. Donker et al., *Effectiveness of Learning Strategy Instruction on Academic Performance: A Meta-Analysis*, 11 EDUC. RES. REV. 1, 3 (2014). Summarizing and paraphrasing are common elaborative learning strategies. An effective elaborative strategy for study is to summarize material and attempt to reduce the number of words by one quarter. *Id.* at 18. Self-explanation is a more complex elaborative strategy where a learner will explain to themselves their thought process or steps to work through a problem. Dunlosky et al., *supra* note 62, at 11–14.

64. BROWN ET AL., *supra* note 4, at 207.

65. BROWN ET AL., *supra* note 4, at 209–10.

66. In 1975, Loftman commented that, "very little literature has been discovered directly concerned with study habit effectiveness although considerable work has been done with study habits as one factor in predicting academic performance." Loftman, *supra* note 2, at 419. There are very few studies of law student study behaviors and two of the three studies are over thirty years old. Loftman, *supra* note 2, at 419; Patton, *supra* note 2, at 10; *see also* Kimball et al., *supra* note

The earliest empirical research on law student study behaviors was published in 1968 in *The Student, The Situation, and Performance During the First Year of Law School*, and found that high-performing students had more effective reading techniques, tested their understanding of the material by "note taking, outlining, group discussion and periodic reviewing," and prepared more effectively for exams by spacing reviews and testing comprehension of the material rather than just memorizing.[67]

In 1975, Guy Loftman's *Study Habits and Their Effectiveness in Legal Education* noted the "surprising lack of analysis of the effectiveness of study techniques in legal education."[68] Loftman found that class attendance and review were the most effective study techniques, that reading and briefing cases, total study hours, and use of hornbooks had less of an impact, and that reliance on law summaries had a negative impact.[69]

In 2010, Karol Schmidt, in *Learning from the Learners: What High-Performing Law Students Teach Us About Academic Support Programming*, found that high-performing students engaged in a multistep process that included "distilling or condensing" when outlining and consistently engaged in self-testing in the outlining process, whereas underperforming students did not outline or did not further distill their outlines.[70]

These findings are generally consistent with the undergraduate literature. Effective reading strategies, periodic review, self-testing, and time management

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1, at 673 ("[T]his study [was] concerned principally with the interrelationships among ability, effort, and performance."); Karol Schmidt, *Learning from the Learners: What High-Performing Law Students Teach Us About Academic Support Programming*, 4 PHOENIX L. REV. 287, 298 (2010). *See generally* Kenneth H. Barry & Patricia A. Connelly, *Research on Law Students: An Annotated Bibliography*, 1978 AM. BAR FOUND. RES. J. 751, 779, 783 (1978) ("[A] bibliography [that] includes all studies based on data elicited from law students."); Donald J. Kochan, *"Learning" Research and Legal Education: A Brief Overview and Selected Bibliographical Survey*, 40 SW. L. REV. 449, 468–71 (2011) (compiling research on the law environment and experience).

67. Patton, *supra* note 2, at 23–24, 26. Even in 1968, Patton found that many first-year law students entered law school relying on passive memorization techniques learned in college that were inappropriate for the study of law. *Id.* at 33.

68. Loftman, *supra* note 2, at 419 (citing to Patton, *supra* note 2, as the only study he found on the subject).

69. *Id.* at 445. Loftman developed a questionnaire consisting of fifteen questions on the students' pre-law performance, law school performance, and study techniques. *Id.* at 422.

70. Schmidt, *supra* note 66, at 304. Schmidt used the LASSI and the Multiple Intelligences Developmental Assessment Scales ("MIDAS"), supplemented by follow-up interviews with participants about outlining and exam taking. *Id.* at 305. The MIDAS is 119 questions on activities, skills, and interests on a six-part Leikert scale. *Id.* at 294. The LASSI was developed as an undergraduate survey instrument; its questions are not tailored to the law school learning environment. *Id.* at 298–99. Schmidt found positive correlations between selecting main ideas, time management, and test strategies with LGPA. *Id.* at 308–09.

are more common among high-performing students.[71] Conversely, over-reliance on passive strategies, like case reading and briefing, cramming, and memorization without review and self-testing, are more common among low and under-performing students.[72]

Law schools have long assumed that students come to law school primed and ready to read and dissect copious amounts of primary source material by reading and briefing judicial opinions, engage in rigorous Socratic debate, and put all of the pieces together for themselves.[73] Law schools have historically out-sourced law learning skills to law school success self-help resources using the non-empirical, anecdotal approach: "I did well in law school, so you should do what I did."[74] Even the limited empirical research from 1968 and 1975 on law student study habits found that reading and briefing cases was insufficient and that students needed to "test their comprehension" with practice instead of relying on just memorization and review.[75] Legal educators and scholars have

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71. *See* discussion *supra* Section I.A.

72. *See* discussion *supra* Section I.A.

73. Beginning law students believe many myths about law school. For example, the "Reverse Cassandra Complex" is when first-year law students believe that everyone offering information about law school knows the truth about law school, but in most cases, it is the opposite. This information comes from a variety of different sources—study aids and assistance materials, outlines, and wisdom of upperclassmen. Peter F. Lake, *When Fear Knocks: The Myths and Realities of Law School*, 29 STETSON L. REV. 1015, 1016–18 (2000).

74. *First in Class: The Ultimate Guide on How to Excel in Law School* illustrates this non-empirical, anecdotal law school success advice. A "Collection of Essays from Top Law Students from Across the Nation," *First in Class* promises to help readers achieve law school success by providing "practical guidance and candid descriptions" of what students must do to "get the 'A'" supported by the "personal experiences of entering and competing in law school" from lawyers who graduated at the top of their respective classes. FIRST IN CLASS: THE ULTIMATE GUIDE ON HOW TO EXCEL IN LAW SCHOOL loc. 124 (Cliff P. Riley & Sergio Porres eds., 2015) (ebook). *See also* KIMM ALAYNE WALTON & LAZAR EMANUEL, STRATEGIES & TACTICS FOR THE FIRST YEAR LAW STUDENT 1 (2010); BARRY FRIEDMAN & JOHN C.P. GOLDBERG, OPEN BOOK: SUCCEEDING ON EXAMS FROM THE FIRST DAY OF LAW SCHOOL, at xiii–xiv (2011); IAN GALLACHER, COMING TO LAW SCHOOL 5–7 (2010); JEREMY B. HORWITZ, LAW SCHOOL INSIDER 2 (2002); ANDREW J. MCCLURG, 1L OF A RIDE: A WELL-TRAVELED PROFESSOR'S ROADMAP TO SUCCESS IN THE FIRST YEAR OF LAW SCHOOL, at x–xix (W. Acad. Publ'g 3d ed. 2017); ALBERT J. MOORE & DAVID A. BINDER, DEMYSTIFYING THE FIRST YEAR OF LAW SCHOOL: A GUIDE TO THE 1L EXPERIENCE 1–2 (2010); JUSTIN SPIZMAN, THE INSIDER'S GUIDE TO YOUR FIRST YEAR OF LAW SCHOOL, at xiii–xiv (2007); DENNIS J. TONSING, 1000 DAYS TO THE BAR: BUT THE PRACTICE OF LAW BEGINS NOW, at ix (2d ed. 2010); PETER T. WENDEL, DECONSTRUCTING LEGAL ANALYSIS: A 1L PRIMER, at xvii–xviii (2009).

75. While there are very few empirically based comprehensive studies on law student learning behavior correlated to academic success, other legal scholars have researched other discrete skills important to law learning. *See, e.g.*, MICHAEL HUNTER SCHWARTZ, EXPERT LEARNING FOR LAW STUDENTS 3 (2005) (emphasizing self-regulated learning); RUTH ANN MCKINNEY, READING LIKE A LAWYER: TIME-SAVING STRATEGIES FOR READING LAW LIKE AN EXPERT loc. 99–119 (2d ed. 2014); Leah M. Christensen, *The Paradox of Legal Expertise: A Study of Experts and Novices Reading the Law*, 2008 B.Y.U. EDUC. & L. J. 53, 70 (2008); Andrea A. Curcio, Gregory Todd Jones

only recently started to apply cognitive science and educational psychology research to academic success and bar prep.[76]

But, how do we really know what works if the legal academy has not successfully examined which law learning behaviors truly relate to academic success in law school? The political, social, and economic climate has changed dramatically in the past ten years regarding the presumed value of a law degree.[77] Many critics argue that law school is not worth the investment and demand the legal academy justify the effectiveness of its teaching and learning methods and outcomes.[78]

By assuming students come to law school with well-developed study and learning habits, which we know from undergraduate research to be a flawed assumption, and by relying on bar passage to assess ultimate learning success, law schools are ignoring an ugly truth: law schools do not know which learning and study behaviors actually work in law school because they have not closely studied a core function of legal education—students learning the law.[79]

& Tanya M. Washington, *Does Practice Make Perfect? An Empirical Examination of the Impact of Practice Essays on Essay Exam Performance*, 35 FLA. ST. U. L. REV. 271, 271, 278, 304 (2008); Anne M. Enquist, *Unlocking the Secrets of Highly Successful Legal Writing Students*, 82 ST. JOHN'S L. REV. 609, 629 (2008); Stefan H. Krieger, *The Development of Legal Reasoning Skills in Law Students: An Empirical Study*, 56 J. LEGAL EDUC. 332, 354 (2006); Laurel Currie Oates, *Leveling the Playing Field: Helping Students Succeed by Helping Them Learn to Read As Expert Lawyers*, 80 ST. JOHN'S L. REV. 227, 251–55 (2006).

76. *See generally* Gabriel H. Teninbaum, *Spaced Repetition: A Method for Learning More Law in Less Time*, 17 SUFFOLK U. J. HIGH TECH. L., 273, 274–78 (2017) (using cognitive science to assist students in passing the bar exam); Bloom, *supra* note 28, at 2; Cooper, *supra* note 33; Kochan, *supra* note 66, at 466–71.

77. David Segal, *For 2nd Year, a Sharp Drop in Law School Entrance Tests*, N.Y. TIMES (Mar. 19, 2012), http://www.nytimes.com/2012/03/20/business/for-lsat-sharp-drop-in-popularity-for-second-year.html [https://perma.cc/3UGB-FU7Y]; David Segal, *What They Don't Teach Law Students: Lawyering*, N.Y. TIMES (Nov. 19, 2011), http://www.nytimes.com/2011/11/20/business/after-law-school-associates-learn-to-be-lawyers.html?pagewanted=all [https://perma.cc/XF84-BE W2] (criticizing the nature of law schools that reward professors' scholarship and not effective teaching, creating no real incentive for law professors to be concerned about teaching, and arguing that students do not realize that they are paying for the cost of legal scholarship, not legal education).

78. Kyle P. McEntee & Patrick J. Lynch, *A Way Forward: Transparency at American Law Schools*, 32 PACE L. REV. 1, 6, 9 (2013). Established in 2009, Law School Transparency, a nonprofit legal education policy organization, set out to improve consumer information concerning the value of legal education and to usher in consumer-oriented reforms to the current law school model. LAW SCHOOL TRANSPARENCY, http://www.lawschooltransparency.com/ [https://perma.cc/5R6U-FX NZ].

79. Steven I. Friedland, *How We Teach: A Survey of Teaching Techniques in American Law Schools*, 20 SEATTLE U. L. REV. 1, 1–2 (1996) ("[I]t is generally assumed that education is occurring in the law school classroom and that the methodology used is effective, conscious scrutiny about methods of teaching law is rare.").

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III. METHODOLOGY OF THE LAW STUDENT STUDY HABITS SURVEY

Empirically tested study habit surveys exist, but are designed for the undergraduate learning model.[80] Significant differences in the law school pedagogy, environment, and assessment methods require a specialized survey instrument.[81]

First, the law school instruction method differs substantially from undergraduate school, namely instruction through the Case Method[82] and the Socratic Method rather than a lecture format,[83] and the lack of right answers. Second, the law learning environment is more competitive than undergraduate programs: the large number of law students (most classes include seventy-five students per section with multiple sections per class) compared to other undergraduate programs with much smaller classes,[84] with mandatory curves in first-year courses, competition for grades and rank, the importance of first-semester grades,[85] and increased stress and anxiety.[86] Third, law school assessment is less frequent and more competitive than in undergraduate programs: a single, end-of-term written essay exam assigns grades; there are few, if any, midterm exams, written assignments, or evaluation of students' skills in doctrinal courses;[87] and there are mandatory grade curves and ranking of students.[88] Fourth, the demands on law students' time are much greater than

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80. *See supra* note 21.

81. Ruta K. Stropus, *Mend It, Bend It, and Extend It: The Fate of Traditional Law School Methodology in the 21st Century*, 27 LOY. U. CHI. L.J. 449, 450 (1996). Undergraduate students learn passively generally through a lecture format whereas law school requires active learning. James Jay Brown, *Forging an Analytical Mind: The Law School Classroom Experience*, 29 STETSON. L. REV. 1135, 1136–37, 1147 (1999).

82. Grant H. Morris, *Teaching with Emotion: Enriching the Educational Experience of First-Year Law Students*, 47 SAN DIEGO L. REV. 465, 471–72 (2010) (learning to think like a lawyer and the use of the Case Method in the first year significantly contributes to student anxiety because students have never experienced anything like this, it is not how they learned in undergraduate programs, and they are unprepared for this type of learning demanded immediately in law school) (citing Patton, *supra* note 2, at 37).

83. Brown, *supra* note 81, at 1135, 1152–53 (describing initial first-year student reactions to the Socratic method classroom, compared with the "predominant form of undergraduate education"); Christopher C. Langdell, *Teaching Law as a Science*, 21 AM. L. REV. 123, 123 (1887) ("[L]aw is a science, and . . . all the available materials of that science are contained in printed books."); Stropus, *supra* note 81, at 451–69, 472 (analyzing the Langdellian methodology and its strengths and weaknesses). "The need to teach these skills is more acute in today's law schools because of the modern undergraduate experience." Stropus, *supra* note 81, at 472.

84. Morris, *supra* note 82, at 471; Stropus, *supra* note 81, at 457, 464.

85. Nygren, *supra* note 8, at 1121.

86. B.A. Glesner, *Fear and Loathing in the Law Schools*, 23 CONN. L. REV. 627, 630, 637, 652 (1991).

87. Douglas A. Henderson, *Uncivil Procedure: Ranking Law Students Among Their Peers*, 27 U. MICH. J.L. REFORM 339, 403 (1994).

88. *Id.* at 404.

in undergraduate programs because of the increased workload[89] and the need to be a self-regulated learner to teach ones' self the law.[90]

A.   *Research Questions and Hypotheses*

This project began while I was working with first-year law students who were struggling academically. I was increasingly frustrated and disappointed by the lack of credible research on effective law student study behaviors. My students had followed the tried and true advice from law school success books and advice from legal educators, but were facing imminent risk of academic dismissal because of poor academic performance in the first year of law school. These students were desperate and confused. They needed to know—what really works? What should I be doing to study for my classes and prepare for exams? What should I be doing to improve my grades so I can stay in law school? I did not have any evidence-based answers for them.

B.   *Development of the Law Student Study Habits Survey*

My research question was which law student study and learning behaviors are positively and negatively correlated with academic success in law school. One of my early hypotheses was that relying too heavily on reading and briefing cases and not leaving time for review, something I perceived as a trend in law student behavior based on feedback from students, would be negatively correlated with LGPA.[91] I also hypothesized that the effective study behaviors from undergraduate research—retrieval, self-testing, and periodic review— would be positively correlated with LGPA.

Because a specialized law student study habits survey did not exist, I developed one myself.[92] I was fortunate to partner with Dr. Regan A. R. Gurung, chair of the Psychology Department at the University of Wisconsin-Green Bay and an expert in teaching and learning, who granted me permission to modify

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89. Glesner, *supra* note 86, at 655.

90. Corinne Cooper, *Letter to a Young Law Student*, 25 TULSA L. J. 275, 282 (2000). The undergraduate learning environment, where students learn passively, does not prepare students for law school. "Law is a self-teaching discipline." *Id.*

91. As defined *supra* note 8, LGPA means first-year law GPA.

92. An ideal law school survey instrument would be inexpensive and easy to administer, quickly completed, empirically valid, and capable of being used immediately by learners and facilitators. Gary J. Conti, *Development of a User-Friendly Instrument for Identifying the Learning Strategy Preferences of Adults*, 25 TEACHING & TEACHER EDUC. 887, 889 (2009). Ultimately, I learned that creating empirically valid surveys and research instruments is a time consuming and expensive endeavor. A more time and cost-effective method of creating an empirically valid research instrument tailored to the law school setting was to find a survey with a similar research question and adapt the questions to the appropriate environment, with the survey author's permission.

his undergraduate Study Behaviors Checklist[93] survey for the law learning environment. The Study Behaviors Checklist was selected for adaptation as it had been empirically tested and addressed a similar research question—"What study behaviors are associated with higher grades on exams?"[94] The researchers intended to build on previous research, and "provide a more fine-tuned view of what students do to study by assessing different behaviors in a shorter format than existing scales."[95]

The Study Behaviors Checklist included many questions directly applicable to the law school environment.[96] However, not all of the Study Behaviors Checklist questions were appropriate for the law school learning environment; therefore, it was necessary to modify the Study Behaviors Checklist questions to the law school learning environment.[97] I conducted open interviews of first-year law students using a Study Habits Questionnaire,[98] which led each student through the entire cycle of studying in an academic term and included both closed-ended and open-ended questions.[99]

Using information from the Study Behaviors Questionnaire, we modified Dr. Gurung's Study Behaviors Checklist questions and created an eighty-seven question pilot Law Student Study Habits Survey to pre-test the items in the

93. Gurung et al., *supra* note 2, at 30. After giving the Study Behaviors Checklist to 120 students in an introductory psychology class, Regan A. R. Gurung, Janet Weidert, and Amanda Jeske found support for their hypothesis that metacognitive strategies, such as self-testing, correlated positively with academic success. *Id.* at 32–33.

94. *Id.* at 28. The Study Behaviors Checklist is a thirty-five item survey designed to assess undergraduate students' use of different study techniques and correlate with students' course grades. Specifically, the Checklist assesses five types of behaviors: organizational, application, elaboration, metacognitive, and resource use on a Likert scale from one (not at all like me) to five (exactly like me). *Id.* at 30.

95. *Id.* at 29.

96. For example: "After class, I looked over my notes to check for and fill in missing information," "I created and answered questions about the material while I was reading in my notes," "I used practice exams to study," "I read the difficult material slowly," and "I related what I was reading to lecture materials and discussion." *Id.* at 31.

97. *See supra* Sections II.A, II.B.

98. Most students were at-risk students who were required to meet with me, but many students came on their own seeking assistance.

99. Questions regarded study schedules, class preparation, description of case reading process, description of case briefing process, description of note-taking process, description of post-class review, use of study groups, development and use of course outlines, use of academic resources, description of exam preparation process, use of past exams to study and practice, descriptions of supplements and study aid use, and a self-assessment of the efficacy of the student's study habits. Using the student responses, I refined the questions and created an online Questionnaire for students to complete on their own. An online version would save appointment time and allow me to target each student's weak areas and students might be more honest completing the survey on their own. I gathered 103 completed Questionnaires. The Study Habits Questionnaire was not approved by the Institutional Review Board ("IRB"), and has not been formally analyzed for data, but was used to develop patterns and questions for the Law Student Study Habits Survey.

research instrument—the questions themselves.[100] After pre-testing the pilot Law Student Study Habits Survey, we refined it to a thirty-seven question final version covering the following topics: time management, class preparation (reading and briefing cases), note-taking, class attendance, outlining, reviewing, exam preparation, and test-taking.

TABLE 1: LAW STUDENT STUDY HABITS SURVEY QUESTIONS[101]

TIME MANAGEMENT:

> I spread out my studying so I don't have to cram for exams.
> I study the same way that I did in college.
> I spend most of my time preparing for class and do not have time to review.

CLASS PREPARATION (READING & BRIEFING CASES):

> I read all the assigned cases in the casebook.
> I attend every class.
> I read each case from beginning to end.
> I do not understand the cases even after reading them more than once.
> I reread parts of the cases to make sure I understand.
> I read the "Notes & Questions" following the cases.
> I have a hard time putting the material into my own words.
> When reading, I get lost in the details and have a hard time understanding the main idea.
> I highlight important information as I read.
> I write my own case briefs.
> I look at commercial briefs to help me understand the cases.
> I use commercial briefs instead of briefing the cases myself.

NOTE-TAKING & IN-CLASS:

> I write or type only the important things the Professor says in class.
> I review my notes after class.
> I do not understand the class discussions.
> I am afraid of being called on in class.

REVIEW:

> I wait too long to start reviewing.
> I use practice questions and hypos to help me learn new material.
> I generate my own examples when I review.
> I am able to explain confusing concepts to classmates.
> I review with a study group.

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100. The pilot Law Student Study Habits Survey was an online survey based on a five-point Likert scale with eighty-seven closed-ended questions. We administered it online using Qualtrics in the 2013-2014 academic year. We collected 143 completed surveys, representing a wide range of LGPAs.

101. Students were instructed to choose one description of how each skill applied to them: Never, Rarely, Sometimes, Often, or Always.

OUTLINING COURSE MATERIAL:
> I make my own outline using my notes, briefs, etc.
> I have a hard time condensing my outline because it all seems important.
> I use an outline that I received from another student.
> I start my outline right before midterms or finals.
> I don't know how to make an outline.
> My outline is too long.

SELF-TESTING:
> I understand the material better after I work through practice questions.
> I use practice questions to study.

EXAM PREPARATION & TEST-TAKING:
> I memorize all of the rules to prepare for exams.
> I need to finish my outline before I can memorize the rules.
> I get very anxious while taking tests.
> I don't know how to organize my essay answers.

RESOURCE USE & OUTSIDE ASSISTANCE:
> If I don't understand the material, I ask someone for help.
> I met with my Professor.

C. *Administration of the Law Student Study Habits Survey*

The Law Student Study Habits Survey was administered to first-year law students following the completion of their first semester of law school at two different American Bar Association accredited law schools.[102] All first-year law students at the two law schools were invited to participate. Participation was voluntary and was solicited via email containing a link to the online survey. Law students completed the thirty-seven question Law Student Study Habits Survey online in approximately five to ten minutes.

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102. The Law Student Study Habits Survey was administered to first-year law students at Thomas Jefferson School of Law ("TJSL") and Seattle University School of Law ("SU"). IRB approval was obtained through the University of Wisconsin-Green Bay, TJSL, and SU. Demographic information (e.g., gender, race, etc.) was not requested nor analyzed. The purpose of this study is to analyze broad trends across first-year law students, looking for correlation to a single objective academic criteria—LGPA. The samples differ based on incoming student criteria—TJSL students had a median LSAT of 147 compared to SU's median LSAT of 154. Further, TJSL students had a median UGPA of 2.88 compared to SU's median UGPA of 3.36. This indicates that the TJSL students came into law school with lower levels of academic ability in general.

TABLE 2: CHARACTERISTICS OF LAW STUDENTS TAKING THE LAW STUDENT STUDY HABITS SURVEY

Dataset	Responses	LSAT	Undergraduate ("UGPA")	LGPA
SU	83	Range: 144–164	Range: 2.39–4.03	Range: 2.00–3.92
		Median: 154	Median: 3.36	Median: 3.23
TJSL	135	Range: 139–162	Range: 2.19–3.99	Range: 1.00–4.15
		Median: 147	Median: 2.88	Median: 1.98

First, using the Statistical Package for the Social Sciences, I conducted a Pearson correlation between all of the individual responses on the Law Student Study Habits Survey with LGPAs for each dataset. I have included the results of that test below in Table 3.

TABLE 3: PEARSON CORRELATION WITH LGPA

Law Student Study Habits Survey Questions	SU RESULTS		TJSL RESULTS	
	Pearson Corr. to LGPA	*Sig. (two-tailed)*	*Pearson Corr. to LGPA*	*Sig. (two-tailed)*
I spread out my studying so I don't have to cram for exams.	-.108	.332	.214*	.012
I study the same way that I did in college.	-.117	.294	-.277**	.001
I spend most of my time preparing for class and do not have time to review.	.102	.360	-.247**	.004
I read all the assigned cases in the casebook.	.047	.674	.182*	.033
I read each case from beginning to end.	-.081	.470	.152	.078
I do not understand the cases even after reading them more than once.	-.217*	.049	-.170*	.048
I read the "Notes and Questions" following the cases.	.090	.420	.146	.090
I have a hard time putting the material into my own words.	-.130	.243	-.151	.081
When reading, I get lost in the details and have a hard time understanding the main idea.	-.169	.126	-.271**	.001
I highlight important material as I read.	-.066	.555	-.188*	.029
I write my own case briefs.	.015	.892	.070	.419
I look at commercial briefs to help me understand the cases.	-.165	.137	-.196*	.023
I use commercial briefs instead of briefing the cases myself.	-.089	.424	-.188*	.028
I write or type only the important things the Professor says in class.	.063	.570	.221*	.010

I review my notes after class.	-.147	.184	.020	.814
I do not understand the class discussions.	-.157	.156	-.183*	.033
I am afraid of being called on in class.	-.134	.228	-.146	.093
I understand the material during class, but I get confused when I review my notes after class.	-.119	.285	-.160	.064
I wait too long to start reviewing.	.037	.743	-.239**	.005
I use practice questions and hypos to help me learn new material.	.139	.212	.055	.527
I generate my own examples when I review.	.105	.346	.011	.898
I am able to explain confusing concepts to classmates.	.363**	.001	.322**	.000
I review with a study group.	.109	.325	.068	.432
I make my own outline using my notes, briefs, etc.	.110	.321	.287**	.001
I have a hard time condensing my outline because it all seems important.	-.140	.208	-.276**	.001
I use an outline that I received from another student.	-.019	.863	-.243**	.005
I start my outline right before midterms or finals.	.008	.940	-.174*	.045
I don't know how to make an outline.	-.067	.545	-.228**	.008
My outline is too long.	-.258*	.019	-.290**	.001
I understand the material better after I work through practice questions.	.141	.202	.153	.077
I use practice questions to study.	.301**	.006	.275**	.001
I memorize all of the rules to prepare for exams.	.209	.061	.223**	.009
I need to finish my outline before I can memorize the rules.	.074	.505	.124	.149
I get very anxious while taking tests.	-.300**	.006	-.175*	.042
I don't know how to organize my essay answers.	-.294**	.007	-.230**	.007
I have trouble writing the rules on an exam because I didn't practice writing them out.	-.402**	.000	-.268**	.002
If I don't understand the material, I ask someone for help.	-.004	.969	.170*	.049
I met with my Professor.	.093	.403	.177*	.039

* Correlation is significant at the 0.05 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

## IV. RESULTS OF THE LAW STUDENT STUDY HABITS SURVEY

My main research question was which law student study and learning behaviors are positively and negatively correlated with LGPA.

A.   *Positive Correlation with LGPA*

The following law study and learning behaviors were *positively* correlated with LGPA in *both the SU and TJSL datasets*:[103] the ability to explain confusing concepts to classmates and using practice questions to study.

There is a statistically significant positive relationship between LGPA and a student's ability to explain concepts. The ability to explain confusing concepts to classmates is positively correlated with LGPA in both datasets: SU, r (83) = .36, p = .001; TJSL, r (135) = .32, p = .000.

TABLE 4: RESPONSES FOR "I AM ABLE TO EXPLAIN CONFUSING CONCEPTS TO CLASSMATES."
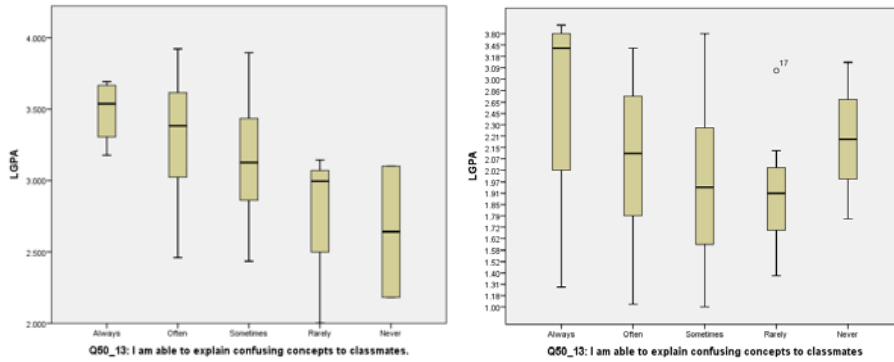
There is a statistically significant relationship between LGPA and a student's use of practice questions to study. Using practice questions to study is positively correlated with LGPA in both datasets: SU, r (83) = .30, p = .006; TJSL, r (135) = .27, p = .001.

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103. In the following charts, the Y-axis represents the LGPA and the X-axis represents the students' response on the five-point Likert scale.

TABLE 5: RESPONSES FOR "I USE PRACTICE QUESTIONS TO STUDY."
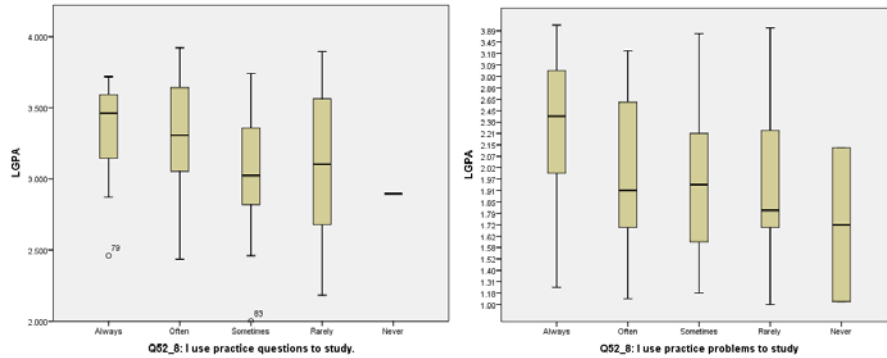

B. *Negative Correlation with LGPA*

The following law study and learning behaviors were *negatively* correlated with LGPA in both datasets: the inability to organize essay answers, difficulty writing rules on exams because of lack of practice, weak critical reading skills, and weak synthesis skills.
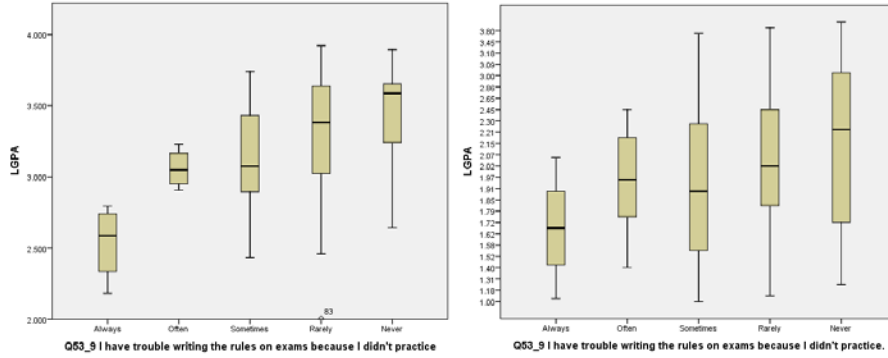
There is a statistically significant negative relationship between LGPA and a student's difficulty in organizing essay answers. Not knowing how to organize essay answers is negatively correlated with LGPA in both datasets: SU, r (83) = -.29, p = .007; TJSL, r (135) = -.23, p = .007.

TABLE 6: RESPONSES FOR "I DON'T KNOW HOW TO ORGANIZE MY ESSAY ANSWERS."
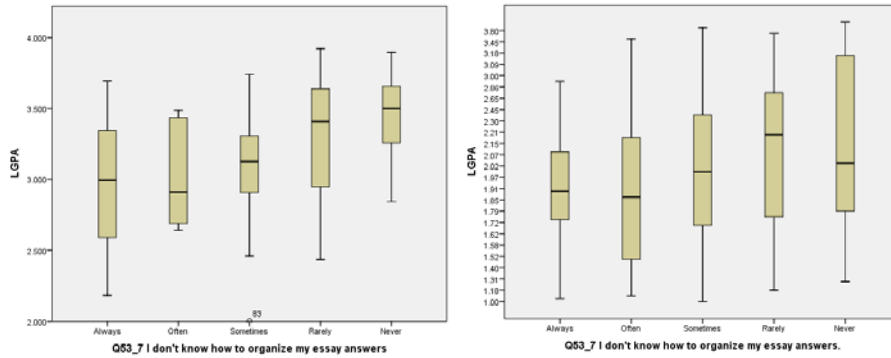
There is also a statistically significant negative relationship between LGPA and a student's difficulty in writing rules on exams due to lack of practice writing. Having trouble writing the rules on exams because a student did not practice writing them out is negatively correlated with LGPA in both datasets: SU, r (83) = -.40, p = .000; TJSL, r (135) = -.27, p = .002.

TABLE 7: RESPONSES FOR "I HAVE TROUBLE WRITING THE RULES ON EXAMS BECAUSE I DIDN'T PRACTICE."

There is also a statistically significant negative relationship between LGPA and weak critical reading skills, although demonstrated by two different survey questions. Not understanding the cases—either failing to understand despite multiple readings[104] or not understanding the main point[105]—was negatively correlated with LGPA in both datasets.

TABLE 8: RESPONSES SHOWING NEGATIVE CORRELATION BETWEEN LGPA AND WEAK CRITICAL READING SKILLS
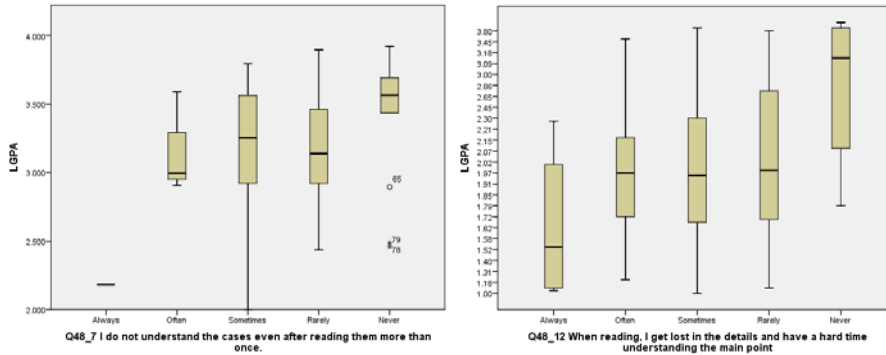
There is also a statistically significant negative relationship between LGPA and weak synthesis skills, although demonstrated by two different survey questions. Weak synthesis skills, when a student's course outline is too long[106] or the student is unable to condense the course material because he or she may

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104. "I do not understand the cases even after reading them more than once." SU, r (83) = -.22, p = .049.

105. "When reading, I get lost in the details and have a hard time understanding the main point." TJSL, r (135) = -.22, p = .001.

106. "My outline is too long." SU, r (83) = -.26, p = .019; TJSL, r (135) = -.29, p = .001. "I have a hard time condensing my outline because it all seems important." TJSL, r (135) = -.28, p = .001.

be unable to distinguish relevant from irrelevant information, was also negatively correlated with LGPA in both datasets.

TABLE 9: RESPONSES SHOWING NEGATIVE CORRELATION BETWEEN LGPA AND WEAK SYNTHESIS SKILLS
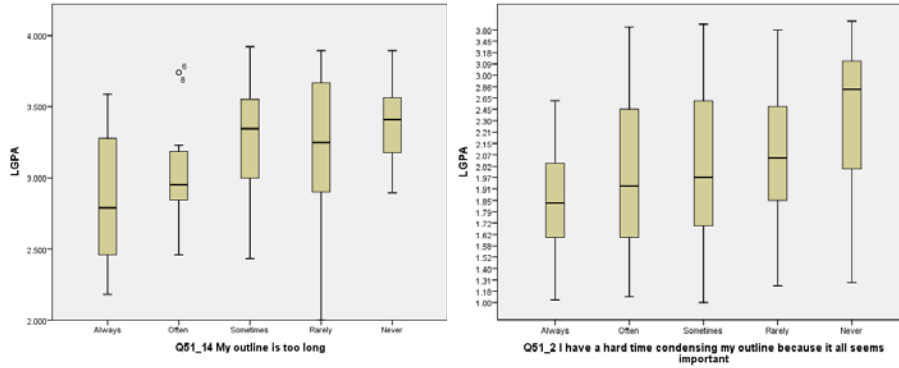
C.   Discussion of Results

The main research question of the Law Student Study Habits Survey was which law student study and learning behaviors were positively and negatively correlated with LGPA. In other words, which law student study and learning behaviors demonstrated a statistically significant relationship with academic success in law school.

My two key hypotheses were that: (1) retrieval, self-testing, and periodic review would be positively correlated with LGPA, and (2) relying solely on reading and briefing cases without review or self-testing would be negatively correlated with LGPA. Both hypotheses were supported by the survey results, although no statistically significant relationship was demonstrated between LGPA and periodic review by these results.

Retrieval and self-testing skills were positively correlated with LGPA, demonstrating a statistically significant positive relationship with academic success in law school. This finding is supported by both datasets explicitly ("I use practice questions to study") and implicitly by survey responses demonstrating negative correlation of lack of retrieval and self-testing with LGPA ("I have trouble writing the rules on exams because I didn't practice" and "I don't know how to organize my essay exams").[107] As shown in Tables 5, 6, and 7 above, students with higher LGPAs were more likely to respond that they always or often used retrieval and practice testing to learn or study materials and respond that they never or rarely had trouble writing rules on exams or difficulty organizing essay exams.[108]

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107.   *See supra* Sections IV.A, IV.B.

108.   *See supra* Tables 5, 6, 7.

Both datasets explicitly demonstrate by survey responses that elaboration is highly positively correlated with LGPA ("I am able to explain confusing concepts to classmates").[109] Table 4 shows that students with higher LGPAs were more likely to be able to explain confusing concepts to classmates.[110] The ability to explain confusing concepts to classmates illustrates several different cognitive processes and effective learning strategies.[111] The student explaining the confusing concept must engage in retrieval to recall relevant information from memory and elaborate on the information in a clear and meaningful way.[112] Elaboration is the process of putting information into your own words and connecting new information to prior knowledge.[113] Elaboration "improves your mastery of new material and multiplies the mental cues available to you for later recall and application . . . ."[114]

While this positive correlation between LGPA and elaboration was not part of my original hypothesis, it is logical and encouraging. Law school final exams are typically closed-book essay exams that present students with hypothetical problems based on material learned during the semester.[115] Students are expected to apply rules learned in the course to new factual situations, to spot the legal issues raised by the facts, and to explain how the law applies to the facts.[116] To be successful in this task, students must not only have read and understood the cases, but must have distilled the legal principles from the cases into a coherent structure of legal rules—connecting new rules to previously learned course material—and must be adept at applying this new knowledge structure to new factual situations in order to excel on final exams.

However, a more troubling finding for law students and legal educators is the negative statistically significant relationship between LGPA and relying on reading, rereading, and briefing cases without retrieval or practice application of the law.[117] Relying solely on reading and briefing cases without engaging in retrieval and self-testing is negatively correlated with LGPA and academic success in law school and leads to a law school learning trap. Because reading and briefing cases is time consuming and difficult, students often reported that

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109. *See supra* Section IV.A.

110. *See supra* Table 4.

111. *See discussion supra* Section II.A.3.

112. *See discussion supra* Section II.A.1.

113. BROWN ET AL., *supra* note 4, at 5.

114. *Id.* at 207.

115. *See* Friedland, *supra* note 3, at 164; *see also* Philip C. Kissam, *The Ideology of the Case Method/Final Examination Law School*, 70 U. CIN. L. REV. 137, 137 (2002) ("Law students typically are evaluated by end-of-the-semester, time-limited, problem-solving final examinations that are graded in ways that help establish a class ranking system based upon comparative average grades.").

116. Friedland, *supra* note 3, at 164–65.

117. *See supra* Section IV.C.

they only had time to read and brief cases to keep up for class.[118] Reading and briefing cases creates a false sense of fluency with the material, where students mistake class preparation for studying for the course.[119] This law school learning trap tricks students into believing that reading and briefing cases to prepare for class without engaging in self-testing or retrieval is sufficient for learning in law school.[120]

Relying on reading and briefing cases without retrieval or self-testing is negatively correlated with LGPA and is explicitly supported by several responses demonstrating a lack of practice applying the material: "I have trouble writing the rules on exams because I didn't practice" and "I don't know how to organize my essay answers."[121] This finding is also implicitly supported by the negative correlation to the prompt, "I use practice questions to study," which was highly statistically significant for high LGPA and academic success.[122] The results also show statistically significant negative relationships between LGPAs and weak critical reading and synthesis skills, also very troubling for law students and legal educators.[123]

Without testing their own comprehension by using retrieval, self-testing, or elaborative study strategies, students develop illusions of competence due to familiarity with material. Students also miss opportunities to refine, synthesize, and consolidate their knowledge when they do not actively engage in retrieval and self-testing. When law students wait until right before the final exam to practice, the practice itself will likely feel hard, leading students to instead engage in easier passive learning tasks like rereading outlines, rote memorization, and other massed strategies that feel easier, but create illusions of competence.[124]

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118. The first-year law students that I worked with in Academic Success were adamant that they read and briefed every case, outlined the course, memorized the rules, and understood the material. But, when asked if they had tried to apply the new information by working through practice questions or hypotheticals, they reported that they barely had enough time to read and brief cases for class and did not have time to practice applying the material. These students did not understand how critical practice testing was for learning, developing comprehension, or calibrating their own understanding of the material.

119. *See supra* notes 5–6 and accompanying text.

120. This illusion is often dispelled when students are offered course midterms, whether graded or ungraded. Midterms force students to engage in more learning activities than just reading and briefing cases, but also often reveal large understanding and knowledge gaps as well as exam writing deficits.

121. *See supra* Section IV.B.

122. *See supra* Section IV.A.

123. *See supra* Section IV.B.

124. Many of the low performing students that I worked with in Academic Support described their law school routine as: read and brief cases for class, go to class and take notes, immediately start reading and briefing cases for the next class, start course outline right before exams, read and study outline, use flashcards to memorize rules, rewrite their outline or even rewrite their notes,

V. RECOMMENDATIONS

Law students need to know what material to learn, what material they have learned, and what they have not yet learned *weeks or months*, not days or hours, before an exam.[125] The Law Student Study Habits Survey results align with findings from cognitive science and question the accuracy of the non-empirical tried and true study advice found in law school success resources.[126] Law students need to spend less time relying on passive learning strategies and more time incorporating active learning strategies that yield formative self-assessment.

A.   Recommendations for Legal Educators

This research proves that formative assessment, through practice application of the law, is critical to law student learning and academic success in law school. Ideally, legal educators would incorporate frequent formative assessment in the law school curriculum to assist students in learning material and gauging their own understanding with frequent low-stakes quizzing, including suggested hypotheticals and practice questions in the course syllabus and graded midterms.[127]

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and read through the professor's past essay exams and mentally issue spot, but not write out answers.

125. Many law school success guides incorrectly stress the importance of reading and briefing cases without emphasizing the importance of testing students' comprehension and application of the concepts extracted from reading and briefing. Some explicitly tell students not to look at a professor's past exams until beginning test preparation late in the semester. One even warns law students that:

> Early in the semester, when you haven't covered much of what will appear on an exam, you'll become discouraged if you read an exam that covers the entire course. Your belief in your ability to succeed on exams is crucial, . . . looking at old tests before you have the knowledge to tackle them can deflate your self-confidence, so it's better not to do it too early.

WALTON & EMANUEL, *supra* note 74, at 21.

126. Law school success resources devote the vast majority of time on reading, briefing, and outlining, and introduce practice as test preparation before exams, not as a learning strategy during the term.

127. Carol Springer Sargent & Andrea A. Curcio, *Empirical Evidence That Formative Assessments Improve Final Exams*, 61 J. LEGAL EDUC. 379, 380–81 (2012). Carol Springer Sargent and Andrea Curcio used formative assessments both in class and outside of class, including short-essay and short-answer ungraded quizzes, a graded midterm, and self-reflective exercises. *Id.* The authors found that these formative assessments helped law student performance on a cumulative final exam. *Id.* at 394; *see also* Elizabeth M. Bloom, *A Law School Game Changer: (Trans)formative Feedback*, 41 OHIO N.U. L. REV. 227, 230–31 (2015) (encouraging legal educators to help students take responsibility for their own learning through development of self-teaching skills and providing concrete suggestions to legal educators to create formative assessments to enable students to become self-regulated learners).

Yet, law faculty may be daunted by providing individual feedback to large sections of students or the prospects of critiquing and grading multiple essay assignments per term. But, law faculty do not need to provide individual comments on student papers in order to provide effective feedback to large sections. In *A Law School Game Changer: (Trans)formative Feedback*, Elizabeth Bloom discusses several options for providing effective feedback and formative assessment in large group sections with structured cooperative learning exercises using rubrics and sample answers (both weak and strong), self-assessments, and multiple low-stakes assessments beginning early in the course.[128]

Formative assessment does not need to be in essay form to be effective for student learning. Multiple-choice and short-answer questions are effective for providing formative assessment and doubles student learning over relying on reading and rereading.[129] Faculty can leverage teaching and research assistants, as well as hypotheticals provided in teachers' manuals of assigned casebooks for writing hypothetical essay or multiple-choice questions that cover single topics.

Due to the critical nature of formative assessment and practice application of the law to student learning, students will require resources outside of assigned casebooks. When law faculty tell students not to use anything except their assigned casebook or materials, they limit students' autonomy, self-regulated learning, and ability to gauge learning and understanding. Instead, law faculty should recommend resources that complement the assigned materials and make more practice questions and resources available.

B.   *Recommendations for Law Students*

Law students also need to incorporate early and frequent formative self-assessment using retrieval and self-testing to calibrate their understanding, form deeper connections to material, synthesize information, develop complex knowledge structures, and better prepare for exams.

Reading and briefing cases, going to class and taking notes, and outlining course material are not sufficient for academic success in law school. Relying solely on reading and briefing cases and going to class without testing one's knowledge creates the same fluency and illusions of competence as rereading.[130] Without testing comprehension with practice questions and hypothetical questions, law students are falling into the same learning trap that researchers found in undergraduate students.

Law students must incorporate retrieval and self-testing at every learning step to develop deep understanding, build complex knowledge structures, and

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128.   Bloom, *supra* note 127, at 241–47, 250–55.

129.   Megan A. Smith & Jeffrey D. Karpicke, *Retrieval Practice with Short-Answer, Multiple-Choice, and Hybrid Tests*, 22 MEMORY 784, 797 (2014).

130.   *See supra* notes 5–6 and accompanying text.

most importantly, to understand what they know and what they *do not* know. Using practice questions to study and learn doubles students' performance over just relying on reading and rereading.[131] Multiple-choice practice questions are just as effective as short-answer questions.[132] For retrieval and self-testing to be the most beneficial for student learning, feedback must also be available in the form of a correct answer or an answer with an explanation after the student works through the practice question herself.[133]

Smarter law learning is using empirically proven study strategies to learn, like retrieval, self-testing, and elaboration. Smarter law learning requires students to read and brief cases to prepare for class *and* immediately engage in retrieval and self-testing to gauge their understanding of the material. Smarter law learning involves elaboration. For example, when reading and briefing cases to prepare for class, students should make the effort to put the case material into their own language without looking at the text or their notes, rather than relying on passive copy and paste into one's brief. Students should also use the same elaborative strategies to synthesize multiple case rules, synthesizing multiple individual case rules into one synthesized rule, and developing their course outlines.

Law students can use several commercially available study aids for practice questions to self-test their knowledge and comprehension as they learn each topic. For example, the *Examples & Explanations* series provides both narrative summaries of substantive law organized by topic and hypothetical questions accompanied with detailed explanations that allow students to test their comprehension.[134] The *Questions & Answers* series does not include narrative summaries, but features many multiple-choice and short-answer questions arranged by topic as well as practice essay questions with explanations and correct answers.[135] Other commercial series provide outlines or checklists as well as multiple-choice, short-answer, and essay practice questions.[136]

These commercial materials do have limits in their effectiveness. They may fail to identify the nuances highlighted by the doctrinal professor or even contradict the professor's materials. They may also focus more on black letter law and fail to cover policy and theory that may be very important to the

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131. Smith & Karpicke, *supra* note 129, at 797.

132. *Id.* at 799.

133. *Id.*

134. The *Examples & Explanations* series is published by Wolters Kluwer and features titles for every first-year law subject, i.e., Contracts, Civil Procedure, Torts, Property, Criminal Law, and Constitutional Law.

135. The *Questions & Answers* series is published by LexisNexis and covers all of the first-year subjects. The *Questions & Answers* series does not include a narrative summary.

136. The *Gilbert Law Summaries* and *Emmanuel Law Outlines Series* are black letter law outlines that also contain some practice questions. The *Exam Pro Series* and *Acing Series* are published by West Academic and also cover the first-year subjects.

particular professor. These commercial resources are supplements, not replacements, to in-class materials, a student's own notes, and materials provided by the professor. Law students may find that a more effective solution is to blend commercial materials with their professor's assignments and materials to make their own hypotheticals that more effectively mirror what they are learning in the classroom.

Law students should also seek out their professors' past exams early in the term. There may be some limitations on using professors' past exams to study. First, the professor's past exam may not cover every topic the student has learned. Second, the professor may not provide a rubric, grading criteria, or model answer. The professor may only provide a sample student answer that may contain errors or may not provide any answer at all. Law students can still get feedback when using a professor's past exam by working through the past exam (retrieval and self-testing) and asking the professor to review the practice exam in office hours. Nevertheless, professors' past exams are a valuable asset to students' learning and should be exploited after the student has covered enough material in the course.

Another source of hypotheticals is the Notes & Questions section in most casebooks after cases or topics. These are written by the casebook authors to highlight important issues or information in the cases or topics. Some law professors go through the Notes & Questions in detail or may use them to generate questions. These provide excellent opportunities to test out students' understanding, but students will need to meet with their professor in office hours to discuss the answers because correct answers and explanations are not typically provided in the law student version of the casebook.

Effective learning is difficult and often involves mistakes and setbacks. These are part of the learning process and are signs of effort, not failure. If you are trying through retrieval and self-testing strategies and make mistakes, do not despair. Each mistake is a learning opportunity. Get feedback, find the correct answer, analyze why you made the mistake, and correct your misunderstanding. Still confused? Get help. Ask your study partner, find more information in a treatise or study aid, ask the teacher's assistant, visit your academic success department, or visit your professor in office hours.

C.   *Future of the Law Student Study Habits Survey*

The Law Student Study Habits Survey is a preliminary tool in understanding which study and learning strategies law students actually use and which strategies are correlated to academic success for law students. The results above are based on only two administrations of the survey at two law schools, yielding a small sample of student data. A next goal is to make the survey available to other law schools to administer to their students, across regions and tiers. The ultimate goal is to collect data on law student study habits to better understand law student study habits, to identify students needing assistance, to develop

meaningful interventions, and to provide sound, evidence-based advice to law students.

Legal educators need more reliable data on effective law student study and learning behavior, for individual institutions as well as across the academy. This is a call to action to any law school interested in administering the Law Student Study Habits Survey to its students. The Law Student Study Habits Survey is available to interested law schools. Survey administration is online and takes students five to ten minutes to complete. Law schools would need to provide the author a letter of institutional support and engagement for the IRB approval. Each institution would be responsible for providing the required academic data for each student that submits a survey response, which researchers would then correlate with the survey responses.[137] If interested in participating in the Law Student Study Habits Survey, please contact Jennifer M. Cooper at jcoope9@tulane.edu.

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137. Academic data includes academic and objective test scores (e.g., LSAT, UGPA, LGPA, course grades).