Grantee Research   AccessLex-Funded Research

6-2023

The Influence of Metacognitive Skills on Bar Passage: An Empirical Study

Jennifer A. Gundlach
Maurice A. Deane School of Law at Hofstra University

Jessica R. Santangelo
Hofstra University

Recommended Citation

THE INFLUENCE OF METACOGNITIVE SKILLS ON BAR PASSAGE: AN EMPIRICAL STUDY

Jennifer A. Gundlach* and Jessica R. Santangelo**

ABSTRACT

This article builds on our prior research about metacognition and its importance for law students' learning. We hypothesized that given our past findings about the relationship between metacognition and academic performance in law school, it was possible that metacognition might also play an important role in success on the bar exam.

Our current study documents law students' metacognitive skills during a final semester bar prep course and examines the relationship between those students' metacognitive skills and bar passage. We found that students are capable of gaining metacognitive knowledge and regulation skills during law school and even as late as the last semester of law school. We also found evidence that instruction and prompts to practice metacognitive regulation during the first year of law school had a long-term impact on students' continued use of those skills. This evidence is important because we also found, as we have in prior studies, that students' success in a final semester 3L bar preparation course, as well as their cumulative law school GPA, are associated with their level of metacognitive knowledge and regulation skills. While we did not find evidence of a direct relationship between metacognitive skills and bar passage, there was a relationship between bar passage and both course performance and cumulative GPA. Accordingly, we contend that metacognitive skills are an indirect support of bar passage given that they contribute to success in law school, which in turn supports success on the bar exam. We conclude that, based on the relationship between metacognitive skills, academic success in law school, and bar passage, law schools have an ethical obligation to support law faculty in explicitly and intentionally incorporating metacognitive skills instruction into the law curriculum.

I. INTRODUCTION

Declining bar passage rates over the past two decades have had an increasingly important impact on law school accreditation, reputation, and ranking, not to mention the direct negative consequences they can have for law school graduates. This trend has given birth to an array of scholarly research that seeks to understand predictors of success on the bar exam in order to inform how law schools can improve passage rates. In addition to demographic and quantitative measures such as law school grade point average ("GPA"), researchers have endeavored to explore other factors that may impact student learning during law school and, perhaps consequently, their ultimate performance on the bar exam.

Our past studies, as well as those of other legal scholars, conclude that metacognition can play an important role in law students' learning and academic performance in law school.[1] Thus, we and others have shared how to integrate the teaching of metacognitive skills across the law

---

1. *See, e.g.*, Jennifer A. Gundlach & Jessica R. Santangelo, *Understanding the Metacognitive Space and Its Implications for Law Students' Learning,* 50 HOFSTRA L. REV. 769, 797-801 (2022) (reporting on an empirical study of the break-down of first-year law students' metacognitive skills with respect to knowledge and regulation components, and the correlation with academic performance); Jennifer A. Gundlach & Jessica R. Santangelo, *Teaching and Assessing Metacognition in Law School*, 69 J. LEGAL EDUC. 156, 163-64, 176-78, 197 (2019) (reporting on an empirical study of first-year law students, finding that students who demonstrated strong metacognitive skills were more likely to perform well); Andrea A. Curcio et al., *Does Practice Make Perfect? An Empirical Examination of the Impact of Practice Essays on Essay Exam Performance*, 35 FLA. ST. U. L. REV. 271, 313 (2008) (reporting on a study suggesting that "students learn better when given opportunities to practice a skill and receive feedback on that practice" and that combining metacognitive exercises with teaching methods may help to improve all student performances); Cheryl B. Preston et. al., *Teaching "Thinking Like a Lawyer": Metacognition and Law Students*, 5 B.Y.U. L. REV. 1053, 1063, 1066, 1068-69 (2014) (discussing study of first-year law students who were given the Metacognitive Awareness Inventory and noting weak metacognitive skills of many based on their responses).

school curriculum.[2] Its impact on law students' learning suggests that metacognition could also play a role in their success on the bar exam.

With this article, we hope to contribute further to the empirical research about metacognitive skills, particularly in the context of law schools' efforts to prepare students to pass the bar exam. Our current study documents law students' metacognitive skills during a final semester, third year ("3L") bar prep course and examines the relationship between those students' metacognitive skills and bar passage. We sought to answer several questions designed to inform our ongoing research about the knowledge and regulation components of metacognition, as well as measurements for assessing those skills.

We also wanted to determine what, if any, conclusions we could draw that might be helpful to assist law students and legal educators' support of law students' learning and subsequent success on the bar exam. Law schools owe it to their students to create curricula and employ teaching methods that position students to pass the bar exam. Moreover, bar passage rates are a component of the American Bar Association ("ABA")'s assessment of law schools' program of legal education, and they are also an important factor in rankings and overall reputation. As will be discussed, our study provides useful findings from which law students, faculty, and administrators can draw in making to decisions about how to bolster students' performance on the bar exam.

Specifically, students are capable of gaining metacognitive knowledge and regulation skills during law school and even as late as the last semester of law school. We also found some evidence that early instruction and prompts to practice metacognitive regulation during the first year of law school can make a long-term impact on students' continued use and development of those skills. This evidence is important because we also found, as we have in prior studies, that students' success in a final semester 3L bar preparation course, as well as their cumulative

---

2. *See, e.g.*, Jennifer A. Gundlach & Jessica R. Santangelo, *Understanding the Metacognitive Space and Its Implications for Law Students' Learning,* 50 HOFSTRA L. REV. 769, 811-12 (2022) (discussing implications of research for law school teaching); Jaime Alison Lee, *From Socrates to Selfies: Legal Education and the Metacognitive Revolution*, 12 DREXEL L. REV. 227, 237-50 (2020) (describing instruction about the "metacognitive approach" for law students); Patti Alleva and Jennifer A. Gundlach, 65 J. LEGAL EDUC. 710, 730-31 (2016) (offering suggestions for how to integrate metacognitive instruction in civil procedure courses); Elizabeth M. Bloom, *Creating Desirable Difficulties: Strategies for Reshaping Teaching and Learning in the Law School Classroom*, 95 U. DETROIT MERCY L. REV. 115, 135-36, 141-42 (2018) (discussing use of complex learning activities that promote metacognition in the form of self-assessment and reflection skills); E. Scott Fruehwald, *How to Help Students from Disadvantaged Backgrounds Succeed in Law School*, 1 TEX. A&M L. REV. 83, 107-08, 110-12, 115-18 (2013) (discussing how to teach law students metacognitive awareness and regulatory skills to enhance self-regulated learning); Kristina L. Niedringhaus, *Teaching Better Research Skills by Teaching Metacognitive Ability*, 18 PERSPS. 113, 113, 115-17 (2010) (offering techniques for teaching metacognitive awareness in legal research classes); Robin A. Boyle, *Employing Active-Learning Techniques and Metacognition in Law School: Shifting Energy from Professor to Student*, 81 U. DETROIT MERCY L. REV. 1, 13-17, 19-20 (2003) (describing various active-learning and metacognitive techniques used in class).

law school GPA, is associated with their level of metacognitive knowledge and regulation skills. While we ultimately did not find evidence of a direct relationship between metacognitive skills and bar passage, there was a relationship between bar passage and both course performance and cumulative GPA. Accordingly, this suggests that strong metacognitive skills can help students succeed in law school, which can then position them to perform better on the bar exam.

Part II provides a brief review of the history of the bar exam and the importance of bar passage rates for law school accreditation.[3] It also traces the decline of bar passage rates, highlights critiques of the bar exam and accreditation standards, and notes recent reform efforts designed to improve the licensing process. It concludes by surveying literature that seeks to determine what factors impact bar passage and law schools' efforts to respond to declining bar passage rates during the past few decades. Part III provides an overview of metacognition, its knowledge and regulation components, and a discussion about its importance to learning and correlation with academic success.[4] Part IV discusses the empirical study, starting with our research questions, methodology, instrumentation, and coding process.[5] Part V provides a discussion of our findings.[6] Specifically, we analyze students' overall metacognitive skills, as well as specific evidence of the knowledge and regulation components demonstrated in their final semester of law school, the extent to which students' metacognition changed from their first to third year of law school, the relationship of each component as well as overall metacognitive skills with academic performance and bar performance, and the impact of instructional intervention.[7] Part V also explains the relationship between quantitative metacognition scores and quantitative variables related to academic success and performance on the bar exam, as well as the relationship between the quantitative data and the qualitative coding data.[8] We also share examples from the students' qualitative responses to provide insight about anecdotal themes that emerged that might be helpful for legal educators to consider in connection with academic support and wellness initiatives.[9] Drawing upon the study's findings, Part VI discusses the study's implications for how legal education can be further reformed to enhance academic support for law

---

3. *See infra* Part II.
4. *See infra* Part III.
5. *See infra* Part IV.
6. *See infra* Part V.
7. *See infra* Part V.
8. *See infra* Part V.
9. *See infra* Part V.

students' preparation to pass the bar exam, as well as resources for law schools to use in order to do so.[10]

II.   THE BAR EXAM, BAR PASSAGE, AND RECENT REFORM EFFORTS

A.   *The Bar Exam as a Feature of the Licensing of Lawyers*

The bar exam has long been an important component of attorney licensing in the United States. With the increasing proliferation of law schools at the turn of the last century, so too came greater regulation and ultimately the creation of written bar exams given in most states.[11] In 1921, the ABA contended that "every candidate for admission to the bar should be subject to an examination by public authority to determine his fitness."[12] Ten years later, the National Conference of Bar Examiners ("NCBE") was founded, but it was not until 1972 that a uniform written bar exam was rolled out in nineteen jurisdictions.[13] Today, nearly all state jurisdictions require successful passage of a bar exam in order to be admitted to practice.[14] The ostensible purpose of the bar exam is to protect the public by ensuring that those who are admitted can demonstrate a certain level of substantive legal knowledge and skills required for entry-level practice.[15]

In almost every state, the bar exam includes the following components: (a) the Multistate Bar Exam ("MBE")[16], which is a 200-question, multiple-choice test of six substantive areas of the law developed by the NCBE to test legal principles and reasoning applied to fact patterns; (b) the Multistate Essay Exam ("MEE")[17], which consists of six 30-min essay questions developed by the NCBE to test the ability to identify legal issues in a fact pattern, assess relevancy of material, present a reasoned analysis, and demonstrate understanding of substantive legal

---

10.   *See infra* Part VI.

11.   Daniel R. Hansen, *Do We Need the Bar Examination? A Critical Evaluation of the Justifications for the Bar Examination and Proposed Alternatives*, 45 CASE W. RES. L. REV. 1191, 1197-1202 (1995) (providing a history of legal education, licensing, and bar exams from the late Nineteenth Century in the United States) (citations omitted).

12.   Hansen, *supra* note 13, at 1201 (citations omitted).

13.   *NCBE Testing Milestones*, Nat'l Conference of Bar Examiners, https://nextgenbarexam.ncbex.org/about/ncbe-testing-milestones/#:~:text=1931-,1931,of%20state%20bar%20admission%20boards (last visited May 19, 2023).

14.   *Jurisdiction Information*, National Conference of Bar Examiners, https://www.ncbex.org/jurisdiction-information (last visited May 19, 2023).

15.   Diane F. Bosse, *Assessing Minimum Competence in a Changing Profession: Why the UBE is Right for New York*, 87 N.Y. ST. B.J. 39, 39 (2015).

16.   *MBE*, National Conference of Bar Examiners, https://www.ncbex.org/exams/mbe (last visited May 19, 2023).

17.   *MEE*, National Conference of Bar Examiners, https://www.ncbex.org/exams/mee (last visited May 19, 2023).

principles; (c) a Multistate Performance Test ("MPT")[18], which tests the ability to complete a task by using fundamental lawyering skills of a beginner lawyer in a realistic situation; and (d) the Multistate Professional Responsibility Exam ("MPRE")[19], which is a two-hour, 60 question multiple-choice exam testing knowledge and understanding of professional conduct standards administered separately by the NCBE and can be taken during law school. A majority of jurisdictions now administer the Uniform Bar Exam ("UBE")[20], which includes uniform administration, grading and scoring of the MBE, MEE, and two MPTs and allows portability of scores to transfer to other jurisdictions that have adopted it. However, each jurisdiction continues to have the freedom to set its own minimum passing, so-called "cut", scores.[21]

B.   Bar Passage Rates as a Factor for Law School Accreditation

Because of its importance for licensing attorneys, bar passage is one of the outcomes the ABA measures to ensure that law schools, pursuant to Standard 301, abide by their accreditation responsibility to "maintain a rigorous program of legal education that prepares its students . . . for admission to the bar . . . ."[22] Beginning in 2008, the ABA required, pursuant to Interpretation 301-6, that law schools demonstrate compliance with the above by indicating that seventy-five percent of a law school's graduates had to pass a bar exam within a five-year period, with additional caveats that permitted lower pass rates under certain circumstances.[23] In 2015, the ABA explicitly adopted Standard 316, which formalized those

---

18.   *MPT*, National Conference of Bar Examiners, https://www.ncbex.org/exams/mpt (last visited May 19, 2023).

19.   *MPRE*, National Conference of Bar Examiners, https://www.ncbex.org/exams/mpre (last visited May 19, 2023).

20.   *UBE*, National Conference of Bar Examiners, https://www.ncbex.org/exams/ube (last visited May 19, 2023).

21.   For example, for UBE states, the minimum passing scores range from 260-273 on a 400-point scale. *Id.* States also have a range, from 73 to 86 out of 100, of passing scores for the MPRE. https://worldpopulationreview.com/state-rankings/mpre-scores-by-state

22.   Gregory G. Murphy, *Revised Bar Passage Standard 316: Evolution and Key Points*, 88 B. EXAMR. 21 (2019) (*citing* ABA Section of Legal Education and Admissions to the Bar, ABA STANDARDS AND RULES OF PROCEDURE FOR APPROVAL OF LAW SCHOOLS 2022-03*, Standard 301* (American Bar Association, 2022).

23.   *Id.*; *see* ABA Section of Legal Education and Admissions to the Bar, ABA STANDARDS AND RULES OF PROCEDURE FOR APPROVAL OF LAW SCHOOLS 2008-09*, Interpretation 301-6* (American   Bar   Association,   2008),   found   at: https://www.americanbar.org/content/dam/aba/publications/misc/legal_education/Standards/standar dsarchive/2008_2009_standards.pdf

requirements[24] despite concerns raised by critics of such a "one-size-fits all" approach for an accreditation standard related to bar passage.[25]

The Council of the Section of Legal Education and Admissions to the Bar ("Council") of the ABA recently proposed a revision to Standard 316 that was ultimately adopted by the ABA House of Delegates in May 2019. This more stringent version of the Standard, which now requires seventy-five percent of a law school's graduates who sit for a bar examination to pass *within two years* of their date of graduation[26], places further pressure on law schools to ensure that their graduates are prepared for success in this important licensing step by changing their admission policies, their programs of education, or both.[27] And, of course, many of the same concerns raised about the prior version of Standard 316 become even more pronounced with this amendment.[28]

C.   *Bar Passage Rates on Decline*

In the past few decades, bar passage rates have been on the decline,[29] and various theories have been offered to explain this trend. In the 1990s, many states raised their cut scores, which meant that a larger percentage of test-takers did not pass.[30] States that did so were accused of attempting to limit the admission of too many lawyers in their jurisdictions.[31] One

---

24. ABA Section of Legal Education and Admissions to the Bar, ABA STANDARDS AND RULES OF PROCEDURE FOR APPROVAL OF LAW SCHOOLS 2014-15*, Standard 316* (American Bar Association, 2014), https://www.americanbar.org/content/dam/aba/administrative/legal_education_and_admissions_to_t he_bar/council_reports_and_resolutions/201406_revised_standards_clean_copy.authcheckdam.pdf

25. William Wesley Patton, *A Blueprint for a Fairer ABA Standard for Judging Law Graduates' Competence: How a Standard Based on Students' Scores in Relation to the Nat*ional Mean MBE Score Properly Balances Consumer Safety with Increased Diversity in the Bar, 24 WASH. & LEE J. CIVIL RTS. & SOC. JUST. 3, 12 (2017) (discussing, for example, the unfair disadvantages for law schools in jurisdictions that have higher cut scores in relation to other ABA law schools).

26. ABA Section of Legal Education and Admissions to the Bar, ABA STANDARDS AND RULES OF PROCEDURE FOR APPROVAL OF LAW SCHOOLS 2022-23*, Standard 301* (American Bar Association, 2022).

27. Gregory G. Murphy, *supra* note 24, at, 23.

28. *See, e.g.*, Nicola A. Boothe, *Black and Barred: The Bar Exam's History of Exclusivity and the Threat of Further Exclusion Posed by ABA Standard 316*, 74 S.C. L. REV. 179, 181, 185-89 (2022) (noting recent statistical evidence showing racial disparities in bar exam passage rates, as well as concerns raised about the impact on institutions that have a higher number of minority students).

29. *See* National Conference of Bar Examiners, *Ten-Year Summary of Bar Passage Rates, 2004-2013*, B. EXAMR, March 2014, at 22, 25; National Conference of Bar Examiners, *Ten-Year Summary of Bar Passage Rates, Overall and First-Time, 2009-2018*, B. EXAMR., https://thebarexaminer.ncbex.org/statistics/2018-statistics/ten-year-summary-of-bar-passage-rates-overall-and-first-time-2009-2018/; Pass-Rates for First-Time Test Takers 2020-2022, https://www.americanbar.org/groups/legal_education/resources/statistics/.

30. *See* Committee on Bar Admissions and Lawyer Performance and Richard A. White, *AALS Survey of Law Schools on Programs and Courses Designed to Enhance Bar Examination Performance*, 52 J. LEGAL EDUC. 454 (2002) (noting that at least ten states had raised their passing scores and others were considering doing the same).

31. Marsha Griggs, *Building a Better Bar Exam*, 7 TEX. A&M L. REV. 1, 23 (2019).

reason that jurisdictions raised their cut scores stemmed from perceived concerns about decreased competency of law graduates in the prior few decades, and the potential increase for lawyer malpractice and discipline.[32]

Alternatively, the NCBE has blamed the decline in bar passage rates on the corresponding drop in law school applications that began in 2011 during the Great Recession, which forced many schools to dig deeper into the applicant pool and lower their GPA and/or LSAT standards for incoming students.[33]

Separate from these external factors, the NCBE also made significant changes to the bar exam. In 2009, the NCBE added six doctrinal subjects to the MEE, which meant test-takers had to have a broader degree of competency.[34] Civil Procedure, one of the more challenging courses in law school[35], was also introduced as a new subject on the MBE in 2015. Notably, the most consistent decline in overall annual bar passage rates began that year.[36]

D. Recent Reforms to the Bar Exam

Rather than focusing on the reasons that might account for an increasing number of students' failure to pass, there have been calls to reform the nature of the licensing process itself, including getting rid of the bar exam altogether. Some commentators have challenged the format and content of the bar exam, arguing that it is not a good measurement of the competency skills needed to practice law in today's world.[37]

---

32. Deborah J. Merritt et. al., *Raising the Bar: A Social Science Critique of Recent Increases to Passing Scores on the Bar Exam,* 69 U. CIN. L. REV. 929, 929, 936-41 (2001) (discussing that some states have indicated that they need to raise their cut-scores because law graduates are less competent than prior generations); s*ee also* Robert Anderson IV & Derek T. Muller, *The High Cost of Lowering the Bar*, 32 GEO. J. LEGAL ETHICS 307, 314-22 (2019) (relying on data suggesting that lowering of bar exam passing scores could increase malpractice, misconduct and discipline of lawyers).

33. Mark Hansen, *Bar Fight: Exam Passage Rates Have Fallen, but Rattles Over Why and What It Means Are Roiling Legal Education*, 102 A.B.A. J. 48, 49 (2016) (citing remarks by Erica Moeser, then president of the NCBE);*but see* Scott Johns, *Testing the Testers: The National Conference of Bar Examiners' LSAT Claim and a Roller Coaster Bar Exam Ride*, 35 MISS. C. L. REV. 436, 444-62 (2017) (relying on empirical evidence from data at the University of Denver Sturm School of Law to dispute the NCBE's claims that law schools' acceptance of applicants with lower LSATs is the reason for declining bar passage rates).

34. Marsha Griggs, *Building a Better Bar Exam*, 7 TEX. A&M L. REV. 1, 31 (2019).

35. Patti Alleva & Jennifer A. Gundlach, *Learning Intentionally and the Metacognitive Task*, 65 J. LEGAL EDUC. 710, 714-19 (2015) (discussing challenges of teaching and learning Civil Procedure).

36. Marsha Griggs, *Building a Better Bar Exam*, 7 TEX. A&M L. REV. 1, 30 (2019) (suggesting that the addition of this new challenging subject may have increased cognitive load of test-takers).

37. *See, e.g.*, Ben Bratman, *Improving the Performance of the Performance Test: The Key to Meaningful Bar Exam Reform*, 83 UMKC L. REV. 565, 603-09 (2015) (calling for improvement and expansion of the Multi-State Performance Test ("MPT") through adoption by more jurisdictions, the addition of more than one MPT administered on a bar exam, and increasing the weight of the MPT);

Alternatively, reformers have suggested that the professional licensing process should include testing of foundational skills and/or knowledge during law school, as well as residency, practice-based training requirements, and limited licensing for specific practice areas.[38] Others have pointed to the disparate impact on minority test-takers' performance and resulting exclusion or delayed admission to the bar, including empirical research supporting those findings, and have recommended lower and/or uniform adoption of cut scores for passage.[39]

In recent years, many states have attempted to respond to these concerns by adding more than one MPT and/or adopting the UBE, which eliminated state-specific content and only tests knowledge of uniform codes and generally accepted principles of common law.[40] Some states continue to adjust cut scores, contending that it is necessary to ensure competency of lawyers admitted to practice.[41] Others have created or are considering new pathways to licensing that do not involve a bar exam at all, by creating apprenticeship or public service programs or diploma

---

Andrea A. Curcio, *A Better Bar: Why and How the Existing Bar Exam Should Change*, 81 NEB. L. REV. 363, 373-83 (2002); Kristin B. Glen, *When and Where We Enter: Rethinking Admission to the Legal Profession*, 102 COLUM. L. REV. 1696, 1698 (2002); Steven Barkan, *Should Legal Research Be Included on the Bar Exam? An Exploration of the Question*, 99 LAW LIBR. J. 403, 405-06 (2007); Lawrence M. Grosberg, *Should We Test for Interpersonal Lawyering Skills?*, 2 CLINICAL L. REV. 349, 374 (1996); Sally Simpson & Toni Massaro, *Students with "CLAS": An Alternative to Traditional Bar Examinations*, 20 GA. ST. U. L. REV. 813, 823-24, 837 (2004); Kristin B. Glen, *Thinking Out of the Bar Exam Box: A Proposal to "MacCrate" Entry to the Profession*, 23 PACE L. REV. 343, 355-81 (2003).

38.   Judith Welch Wegner, *Rethinking Law Licensing,* 90 SEPT. N.Y. ST. B.J. 24 (2018); Joan W. Howarth and Judith Welch Wegner, *Ringing Changes: Systems Thinking About Legal Licensing*, 13 FIU L. REV. 383 (2019).

39.   *See, e.g.*, Christina Shu Jien Chong, *Battling Biases: How Can Diverse Students Overcome Test Bias on the Multistate Bar Examination*, 18 U. MD. L. J. RACE, RELIGION, GENDER & CLASS 31, 36-61 (2018) (surveying studies showing that minorities underperform on the bar exam, discussing a range of factors that can impact the validity of the exam and can minorities' performance on it, and identifying test biases inherent in bar exam questions); Edna Wells Handy, *Blacks, The Bell Curve & The Bar Exam*, 10 NAT'L B.A. MAG 24, 24 (1996) (discussing historical evidence of disparate passage rates for minority test-takers in New York and other states); Michael B. Frisby et. al., *Safeguard or Barrier: An Empirical Examination of Bar Exam Cut Scores*, 70 J. LEGAL EDUC. 125, 126-129 (2020) (discussing exclusionary nature of bar exam cut scores).

40.   For example, in 2016, New York adopted the UBE and added a second MPT, in addition to the New York Law Exam. *See Uniform Bar Examination, New York Law Course & New York Law Exam*,   N.Y.   BD.   EXAM., https://www.nybarexam.org/ube/ube.html#:~:text=Uniform%20Bar%20Examination%2C%20New %20York,New%20York%20State%20bar%20examination (last visited May 22, 2023)

41.   *See* Deborah J. Merritt et al., *Raising the Bar: A Social Science Critique of Recent Increases to Passing Scores on the Bar Exam,* 69 U. CIN. L. REV. 929, 929 & 936-941 (2001) (noting that "at least a dozen states have raised the score required to pass their bar exams during the last decade, with several more evaluating proposed increases" and discussing that some states have indicated that they need to raise their cut-scores because law graduates are less competent than prior generations).

privileges for graduates from in-state law schools.[42] However, many of the same critiques persist.[43]

The NCBE has recently announced pilot testing for "the Next Gen Bar Exam" to begin in 2026, which will purportedly test more skills and less substantive law.[44] In addition to legal writing, issue spotting, and legal analysis, which are currently tested, the new bar exam will include new question types focused on legal research, investigation and evaluation, client counseling and advising, negotiation and dispute resolution, and client relationship and management skills.[45] Yet, it remains unclear the impact, if any, these changes will have on passage rates.

E.   Law Schools' Efforts to Improve Students' Bar Passage Results

For the test-takers, failure to pass the bar exam can impact future employment opportunities, which can in turn impose financial hardship and impact their mental health.[46] Decreasing bar passage rates can also create greater accreditation risk for the test-takers' law schools, given the requirements of Standard 316 discussed above. Moreover, declines in bar passage rates can have negative implications for the schools' reputation among members of the bench, bar, current students, and potential future

---

42.   *See* Beverly Moran, *The Wisconsin Diploma Privilege: Try It, You'll Like It*, 2000 WIS. L. REV. 645, 648 (2000); William M. Sullivan, *Align Preparation and Assessment with Practice: A New Direction for the Bar Examination*, 85 N.Y. St. B.J. 41, 43 (2013) (discussing Daniel Webster Scholars Program at University of New Hampshire, wherein students participate in a skills-intensive program of legal education and are assessed based on a variety of performance criteria throughout in lieu of taking a bar exam). *See also* Eileen Kaufman, *The Lawyers Justice Corps: A Licensing Pathway to Enhance Access to Justice,* 18 U. ST. THOMAS L.J. 159 (2022) (calling for an alternative route to practice that would allow graduates who commit to one year of serving underrepresented individuals and communities to be certified to practice by supervisors without taking the bar exam); Kristin Booth Glen, *Thinking Out of the Bar Exam Box: A Proposal to "MacCrate" Entry to the Profession,* 23 PACE L. REV. 343 (2003) (proposing an experiential, performance-based public service alternative to the bar exam).

43.   *See, e.g.*, Scott Devito et. al., *Examining the Bar Exam: An Empirical Analysis of Racial Bias in the Uniform Bar Examination*, 55 U. MICH. J.L. REFORM 597 (2022) (discussing results of empirical study indicating that law schools with higher proportions of Black and Hispanic students were associated with lower first-time bar passage rates for their graduates in in UBE jurisdictions); Scott Johns, *Putting the Bar Exam on Constitutional Notice: Cut Scores, Race & Ethnicity, and the Public Good*, 45 SEATTLE U. L. REV. 853 (2022) (reviewing data showing racial disparities on the bar exam and asserting constitutional challenges).

44.   *See NCBE Publishes Preliminary Content Scope Outlines for New Bar Exam*, NAT'L CONF. Bar EXAM'R. (Mar. 22, 2022), https://www.ncbex.org/news/ncbe-publishes-preliminary-content-scope-outlines.

45.   *Id.*

46.   Keith Kaufman, V. Holland LaSalle-Ricci, Carol R. Glass, and Diane B. Arnkoff, *Passing the Bar Exam: Psychological, Educational, and Demographic Predictors of Success*, 57 J. LEGAL. EDUC. 205 (2007); Committee on Bar Admissions and Lawyer Performance and Richard A. White, *AALS Survey of Law Schools on Programs and Courses Designed to Enhance Bar Examination Performance*, 52 J. LEGAL EDUC. 454, 455 (2002).

applicants.[47] Disparate passage rates, as noted above, can also impact diversity in the legal profession and can discourage law schools from admitting minority students. The COVID pandemic added more fuel to the fire because it exacerbated already existing economic and psychological burdens on test takers.[48]

Consequently, law schools across the country have endeavored to discover the "silver bullet" that will unlock the secrets to improving bar passage rates of their graduates. Annual conferences, workshops, and scholarly symposia draw deans and academic success faculty engaged in this quest. Law school administrations have dramatically increased expenses for new bar support initiatives, and foundations such as AccessLex have offered grants to researchers such as us to engage in empirical study of the issue.

The range of research studies and reform efforts is dizzying. There is research suggesting that LSAT scores and/or undergraduate GPAs can predict success in passing the bar,[49] suggesting that schools would benefit from imposing greater restrictions on admissions requirements for incoming and/or transfer-in students.[50] Other research has focused on predictors from the law school experience to determine whether there is a relationship between bar passage and a number of factors, including (1) specific doctrinal, bar-subject[51] or experiential coursework,[52] (2)

---

47. *See* Committee on Bar Admissions and Lawyer Performance and Richard A. White, *AALS Survey of Law Schools on Programs and Courses Designed to Enhance Bar Examination Performance*, 52 J. LEGAL EDUC. 454, 454-55 (2002) (discussing range of implications for a law school if its graduates' bar passage rates decreased). In addition, lower bar passage rates may result in a drop of the law school's U.S. News & World Report rankings, which includes a school's bar passage rates in weighing a school's placement success (26% of a school's overall rank); Robert Morse et. al., *Methodology: 2023-2024 Best Law Schools Rankings, U.S. News* (May 10, 2023), https://www.usnews.com/education/best-graduate-schools/articles/law-schools-methodology.

48. Cassandra Burke Robertson, *How Should We License Lawyers?*, 89 FORDHAM L. REV. 1295, 1295-96 (2021) (discussing impact of COVID pandemic on test-takers).

49. *See, e.g.*, Brian Sites, *Informed Studying Through Predictive Modeling: An MBE Regression Analysis of Bar Preparation and Curriculum Assessments*, 39 QUINNIPIAC L. REV. 461 (2021) (reporting on study showing relationship between bar passage, LSAT, cumulative law school GPA, final semester MBE courses, commercial program diagnostic exams, and completion metrics).

50. *See, e.g.,* Rory Bahadur et. al., *Reexamining Relative Bar Performance as a Function of Non-Linearity, Heteroscedasticity, and a New Independent Variable*, 52 N.M. L. REV. 119, 157-203 (2022) (reporting on statistical analysis of law school data demonstrating that academic attrition and net-transfer rates likely affect law school graduates' performance on the bar exam relative to entering credentials of matriculants).

51. *See, e.g.*, Robert R. Kuehn & David R. Moss, *A Study of the Relationship Between Law School Coursework and Bar Exam Outcomes*, 68 J. LEGAL EDUC. 623, 642-46 (2019) (discussing results of empirical study to determine the relationship between bar-subject courses and bar passage for students from two law schools, and finding slight correlation particularly for students in the bottom half and bottom quartile for law school GPAs, respectively).

52. *See, e.g.*, Scott Johns, *A Statistical Exploration: Analyzing the Relationship (If Any) Between Externship Participation and Bar Exam Scores,* 42 OKLA. CITY U.L. REV. 281, 294-307 (2018) (analyzing whether University of Denver Sturm College of Law students' participation in externships was associated with performance on the Colorado bar exam, and finding no statistically significant evidence that it improves or hurts performance when controlling for other variables);

academic performance in the 1L year and/or cumulative GPA[53], (3) new course offerings that "teach to the test" with respect to content and/or skills that are heavily tested on the bar exam, and (4) simulating bar exam testing conditions during law school coursework.[54] Based on the above findings, law schools have followed suit by creating new required courses, such as "bar prep"[55] and other academic support classes, new methods of assessment, and have adjusted GPA requirements for students to remain in law school.[56]

On a broader level, legal scholars over the past few decades have sought to understand what factors can impact law students' learning, drawing on findings about how people learn, and how to develop long-term, self-regulated learning to support bar-ready and practice-ready

Robert R. Kuehn & David R. Moss, *supra* note 52, at , 638-41 (discussing results of empirical study to determine the relationship between experiential courses and bar passage for students from two law schools, and finding none).

53. Brian Sites, *Informed Studying Through Predictive Modeling: An MBE Regression Analysis of Bar Preparation and Curriculum Assessments*, 39 QUINNIPIAC L. REV. 461, 478-81 (2021) (reporting on study showing predictive effect on bar passage of LSAT and cumulative law school GPA, as well as final semester MBE courses, commercial program diagnostic exams and completion metrics).

54*. Id.* (reporting on study showing that LSAT and cumulative law school GPA, as well as final semester MBE courses, commercial program diagnostic exams and completion metrics); Sara J. Berman, *Integrating Performance Tests Into Doctrinal Courses, Skills Courses, and Institutional Benchmark Testing: A Simple Way to Enhance Student Engagement While Furthering Assessment, Bar Passage, and Other ABA Accreditation Objectives,* 42 J. LEGAL PROF. 147, 151-53 (2018) (calling for the integration of MPTS into law school courses to comply with ABA Standards for assessment and bar passage); Raul Ruiz, *Leveraging Noncognitive Skills to Foster Bar Exam Success: An Analysis of the Efficacy of the Bar Passage Program at FIU Law*, 99 NEB. L. REV. 141, 181-88 (2020) (discussing integration of non-cognitive skills that impact academic performance into Florida International University Law School's Bar Exam Success Program); Denise Riebe, *Readers' Expectations, Discourse Communities, and Effective Bar Exam Answers*, 41 GONZ. L. REV. 481, 486-503 (2006) (discussing benefits of and recommending that law students be taught the "reader expectation approach" to writing to improve their performance on the bar exam); Emmeline Paulette Reeves, *Teaching to the Test: The Incorporation of Elements of Bar Exam Preparation in Legal Education*, 64 J. LEGAL EDUC. 645, 646 (2015) (arguing for increased emphasis on "bar exam skills" and nurturing motivation, persistence and resilience in law students); Sabrina DeFabritiis and Kathleen Elliott Vinson, *Under Pressure: How Incorporating Time-Pressured Performance Tests Prepares Students for the Bar Exam and Practice*, 122 W. VA. L. REV. 107 (2019).

55. *See, e.g.*, Denise Riebe, *A Bar Review for Law Schools: Getting Students on Board to Pass Their Bar Exams*, 45 BRANDEIS L.J. 269, 275-341 (2007) (surveying studies about bar passage and proposing range of bar support initiatives, including required bar prep course); Donald H. Zeigler et. al., *Curriculum Design and Bar Passage: New York Law School's Experience*, 59 J. LEGAL. EDUC. 393, 399-406 (2010) (discussing the creation and implementation of New York Law School's Comprehensive Curriculum Program designed to respond to low bar passage rate, and assessing results); Scott Johns, *Empirical Reflections: A Statistical Evaluation of Bar Exam Program Interventions*, 54 U. LOUISVILLE L. REV. 35, 36-69 (2016) (discussion Bar Passage Program at University of Denver Sturm College of Law and empirical analysis of its impact on bar passage).

56. *See, e.g.*, Katherine A. Austin et. al., *Will I Pass the Bar Exam? Predicting Student Success Using LSAT Scores and Law School Performance*, 45 HOFSTRA L. REV. 753 (2017) (reporting on statistical analysis of entering undergraduate GPA and LSAT score, final law school GPA, 1L GPA, performance in specific law school courses, and participation in applied skills as well as extracurricular opportunities predicted bar exam success at Texas Tech Law School).

graduates.[57] In addition to demographic and educational influences, one study examined the variables of worry, test anxiety, personality, and time management.[58] Educational and social sciences scholarship has also informed legal scholarship exploring the role of motivation, growth mindset, well-being, grit, and metacognition on learning in law school and offering pedagogical and curricular reforms.[59] These findings can carry important implications for not only what to teach, but how to teach students to position them for success in law school and on the bar exam. Narrowing in on any one factor may be fraught with complications, given the complexity of learning and the myriad interacting factors that can influence learning. But through our work we have attempted to focus on metacognition as an influential factor among others.

III.   METACOGNITION AND ITS IMPORTANCE FOR LEARNING

A. Introduction to Metacognition and Its Components

Cognition involves the skills that constitute the learning process itself, such as encoding, memorizing, and recalling.[60] In contrast,

---

57. *See, e.g.,* Elizabeth Adamo Usman, *Making Legal Education Stick: Using Cognitive Science to Foster Long-Term Learning in the Legal Writing Classroom*, 29 GEO. J. LEGAL ETHICS 355, 360-80 (2016) (discussing findings about how people learn that are important for legal education).

58. Keith Kaufman et. al., *Passing the Bar Exam: Psychological, Educational, and Demographic Predictors of Success*, 57 J. LEGAL. EDUC. 205, 215-20 (2007) (finding that test anxiety and neuroticism in particular had a significant relationship with performance on the bar exam).

59. *See, e.g.*, Megan Bess, *Grit, Growth Mindset, and the Path to Successful Lawyering*, 89 UMKC L. REV. 493, 501-515 (2021) (surveying studies of growth mindset and grit as skills important to academic success in law school and in the legal profession); Elizabeth Adamo Usman, *Making Legal Education Stick: Using Cognitive Science to Foster Long-Term Learning in the Legal Writing Classroom*, 29 GEO. J. LEGAL ETHICS 355, 360-80 (2016) (discussing findings about how people learn that are important for legal education); Kaci Bishop, *Framing Failure in the Legal Classroom: Techniques for Encouraging Growth and Resilience*, 70 ARK. L. REV. 959, 978-1005 (2018); Debra S. Austin, *Positive Legal Education: Flourishing Law Students and Thriving Law Students,* 77 MD. L. REV. 649, 684-709 (2018) (arguing for various well-being initiatives in legal education); E. Scott Fruehwald, *How to Help Students From Disadvantaged Backgrounds Succeed in Law School*, 1 TEX. A&M L. REV. 83, 85 (2013) (proposing changes to legal education focused on teaching and instilling growth mindset, motivation to learn, metacognitive thinking, self-regulated learning, and improved study habits); Raul Ruiz, *Leveraging Noncognitive Skills to Foster Bar Exam Success: An Analysis of the Efficacy of the Bar Passage Program at FIU Law*, 99 NEB. L. REV. 141, 163-174 (2020) (discussing range of non-cognitive skills that impact academic performance); Victor D. Quintanilla and Sam Erman, *Mindsets in Legal Education*, 69 J. LEGAL EDUC. 412, 430-39 (2020) (discussing need for various psychologically attuned interventions drawing on social psychological research); Patti Alleva & Jennifer A. Gundlach, *Learning Intentionally and the Metacognitive Task*, 65 J. LEGAL EDUC. 710, 721, 723-24, 726, 730-31 (2015) (discussing why the teaching of metacognitive skills can improve learning for law students generally and, more specifically, within the context of a Civil Procedure course, and offering suggestions for how to integrate such instruction); Louis N. Schulze, *Using Science to Build Better Learners: One School's Successful Efforts to Raise Its Bar Passage Rates in an Era of Decline*, 68 J. LEGAL EDUC. 230, 232-37 (2019) (discussing positive impact on Florida International University's bar passage rates from integration of metacognitive and self-regulated learning exercises, such as forced recall practice and spaced repetition).

60. *See* Gregory Schraw et al., *Promoting Self-Regulation in Science Education: Metacognition as Part of a Broader Perspective on Learning*, 36 RSCH. SCI. EDUC. 111, 112 (2006); JOHN S. KENDALL ET AL., THINKING & LEARNING SKILLS: WHAT DO WE EXPECT OF STUDENTS? 2, 7-9 (2008) (cognition involves the actual component skills that constitute the learning process, such as retrieval, comprehension, analysis, and knowledge utilization), http://eric.ed.gov/?id=ED544689.

metacognition is "one's knowledge concerning one's own cognitive processes and products or anything related to them, e.g., the learning-relevant properties of information or data."[61] Another way to think about metacognition is that it involves an understanding of how the learning task was performed.[62] Both cognition and metacognition are essential for self-regulated learning.[63] For our research purposes, we have focused on two interdependent components of metacognition: (1) metacognitive knowledge and (2) metacognitive regulation.[64]

Metacognitive knowledge is the awareness of the different learning strategies available, how to use them, and in what contexts they can be useful.[65] This knowledge involves declarative, procedural and conditional knowledge.[66] Declarative knowledge is what one knows about oneself as a learner and what factors influence one's performance.[67] Procedural knowledge is what one knows about strategies or heuristics for the learning task.[68] Conditional knowledge is knowing when and why to use declarative and procedural knowledge.[69] Thus, knowledge of a range of learning strategies, understanding their application and effectiveness, and appropriate selection of strategies for a specific learning task are all aspects of this component of metacognition.[70]

Metacognitive regulation can be described as "regulating one's problem-solving and learning activities."[71] This component has been

---

61. John H. Flavell, *Metacognitive Aspects of Problem Solving*, *in* THE NATURE OF INTELLIGENCE 231, 232 (Lauren B. Resnick ed., 1976).

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

63. *See* Gregory Schraw et al., *Promoting Self-Regulation in Science Education: Metacognition as Part of a Broader Perspective on Learning*, 36 RSCH. SCI. EDUC. 111, 112 (2006); KENDALL ET AL., *supra* note 61, at 2, 27.

64. John H. Flavell, *Metacognition and Cognitive Monitoring: A New Area of Cognitive-Developmental Inquiry*, 34 AM. PSYCH. 906, 906-08 (1979); *Assessing Metacognition and Self-Regulated Learning*, *in* ISSUES IN THE MEASUREMENT OF METACOGNITION 43, 44 (Gregory Schraw & James C. Impara eds., 2000) (discussing knowledge and regulation components of metacognition); Gregory Schraw & Rayne Sperling Dennison, *Assessing Metacognitive Awareness*, 19 CONTEMP. EDUC. PSYCH. 460, 460 (1994); Gregory Schraw, *Promoting General Metacognitive Awareness*, 26 INSTRUCTIONAL SCI. 113, 113-14 (1998).

65. Paul R. Pintrich et al., *Assessing Metacognition and Self-Regulated Learning*, *in* ISSUES IN THE MEASUREMENT OF METACOGNITION 43, 45 (Gregory Schraw & James C. Impara eds., 2000); Gregory Schraw & Rayne Sperling Dennison, *Assessing Metacognitive Awareness*, 19 CONTEMP. EDUC. PSYCH. 460, 460 (1994) (describing the metacognitive knowledge component as including declarative, procedural, and conditional knowledge).

66. Gregory Schraw & Rayne Sperling Dennison, *Assessing Metacognitive Awareness*, 19 CONTEMP. EDUC. PSYCH. 460, 460 (1994) (describing the metacognitive knowledge component as including declarative, procedural, and conditional knowledge).

67. Id.

68. Id.

69. Id.

70. John G. Borkowski et al., *A Process-Oriented Model of Metacognition: Links Between Motivation and Executive Functioning*, *in* ISSUES IN THE MEASUREMENT OF METACOGNITION 1, 5-9 (Gregory Schraw & James C. Impara eds., 2000) (discussing development of metacognitive knowledge); *see also* Paul R. Pintrich et al., *Assessing Metacognition and Self-Regulated Learning*, *in* ISSUES IN THE MEASUREMENT OF METACOGNITION 43, 46-48 (Gregory Schraw & James C. Impara eds., 2000) (discussing aspects of metacognitive knowledge).

71. *See* Marcel V. J. Veenman, Bernadette H.A.M. Van Hout-Wolters, and Peter Afflerbach, *Metacognition & Learning: Conceptual and Methodological Considerations*, 1 METACOGNITION & LEARNING 3, 4 (2006).

described as involving a range of processes around planning, monitoring and evaluating one's learning, making decisions about strategies to use and when to change strategies that aren't working, controlling and regulating time, effort, and pace of learning, as well as control of motivation, emotion, and environment.[72] Planning involves the actual selection of appropriate strategies and the allocation of resources that affect performance.[73] Monitoring is one's awareness of comprehension and task performance, such as self-testing while learning.[74] Evaluating refers to the appraisal of products and the efficiency of one's learning, such as reevaluating one's learning goals and conclusions.[75]

Students with strong metacognitive skills demonstrate both the knowledge and regulation components,[76] but understanding the relationship between the two can be complicated. There is some support for the idea that metacognitive knowledge is a foundational prerequisite to metacognitive regulation.[77] However, even if students have knowledge of strategies that are aligned with a learning task, they might not always regulate effectively.[78] It may also be the case that students possess the ability to regulate their learning, but lack knowledge about appropriate strategies and how and when to use them.[79]

B.   Methodologies for Assessing Metacognition

Given the complexity of understanding metacognition and its components, as well as its interrelationship with other factors that impact learning, it can be challenging to assess metacognitive skills and determine a correlation between those skills and academic performance

---

72.   Paul R. Pintrich, Christopher A. Wolters, and Gail P. Baxter, *Assessing Metacognition and Self-Regulated Learning*, *in* ISSUES IN THE MEASUREMENT OF METACOGNITION 43, 50-53 (Gregory Schraw & James C. Impara eds., 2000) (discussing aspects of metacognitive knowledge); Gregory Schraw & Rayne Sperling Dennison, *Assessing Metacognitive Awareness*, 19 CONTEMP. EDUC. PSYCH. 460, 460 (1994) (describing metacognitive regulation as having five components: planning, information management strategies, comprehension monitoring, debugging strategies, and evaluation).

73.   Gregory Schraw, *Promoting General Metacognitive Awareness*, 26 INSTRUCTIONAL SCI. 113, 115 (1998).

74.   *Id.*

75.   *Id.*

76.   *Id.*

77.   *See* Gregory Schraw, *Promoting General Metacognitive Awareness*, 26 INSTRUCTIONAL SCI. 113, 115 (1998); Julie Dangremond Stanton et al., *Differences in Metacognitive Regulation in Introductory Biology Students: When Prompts Are Not Enough*, 14 LIFE SCI. EDUC. 1, 7, 9 (2015) (when focusing on 'metacognitive-regulation skills,' hypothesizing that some students do not regulate due to lack of knowledge); Jessica Santangelo et al., *Developing Student Metacognitive Skills Using Active Learning with Embedded Metacognition Instruction*, 22 J. STEM EDUC. 51, 52, 58 (2021) (discussing development of a continuum of metacognition).

78.   Gregory Schraw, *Promoting General Metacognitive Awareness*, 26 INSTRUCTIONAL SCI. 113, 121 (1998).

79.   Julie Dangremond Stanton et al., *Differences in Metacognitive Regulation in Introductory Biology Students: When Prompts Are Not Enough*, 14 LIFE SCI. EDUC. 1, 11 (2015).

and/or bar passage.[80] However, validated quantitative and qualitative instruments have been developed to assess metacognitive knowledge and regulation.

Researchers often use self-report questionnaires to measure students' metacognition. One commonly used quantitative instrument is the Motivated Strategies for Learning Questionnaire ("MSLQ")[81], which assesses metacognitive regulation by posing statements using a Likert scale with five or seven response options.[82] For example, a student would be prompted to answer the extent to which "I ask myself questions to make sure I understand the material that I have been studying."[83] While quantitative instruments are easy to administer to large groups and can be rapidly scored, reliance on students' self-reporting, particularly when it doesn't occur at the same time as the learning task, may increase the potential for inaccurate responses.[84] Quantitative instruments may also be more appropriate for measuring metacognitive knowledge, which is a more static component than metacognitive regulation.[85]

Researchers have employed various qualitative tools for assessing metacognition, such as surveys with open-ended prompts or personal interviews.[86] Additionally, researchers have recorded firsthand observations of students engaging in a learning task, or have used think-aloud protocols, which have the benefit of being more accurate, but the presence of the observer may still impact what the student would do under

---

80. *See, e.g.*, Marcel V. J. Veenman, Bernadette H.A.M. Van Hout-Wolters, and Peter Afflerbach, *Metacognition & Learning: Conceptual and Methodological Considerations*, 1 METACOGNITION & LEARNING 3, 8-9 (2006) (surveying various forms of assessing metacognition and recognizing the challenge of accuracy with any one method).

81. Paul R. Pintrich & Elisabeth V. De Groot, *Motivational and Self-Regulated Learning Components of Classroom Academic Performance*, 82 J. EDUC. PSYCH. 33, 34 and App. (1990).

82. Some versions of the MSLQ use a seven-point Likert scale. While literature suggests that some scale lengths may be preferable to maximize reliability and validity in certain situations, a five-point Likert scale is customary and most often used. Jon A. Krosnick & Stanley Presser, *Question and Questionnaire Design*, *in* HANDBOOK OF SURVEY RESEARCH 263, 268-75 (Peter V. Marsden & James D. Wright eds., 2d ed. 2010) (discussing different studies about scale lengths and use of 5-point Likert scale more specifically).

83. *See* Paul R. Pintrich & Elisabeth V. De Groot, *Motivational and Self-Regulated Learning Components of Classroom Academic Performance*, 82 J. EDUC. PSYCH. 33, 40 (1990).

84. *See* Paul R. Pintrich, Christopher A. Wolters, and Gail P. Baxter, *Assessing Metacognition and Self-Regulated Learning*, *in* ISSUES IN THE MEASUREMENT OF METACOGNITION 43, 86 (Gregory Schraw & James C. Impara eds., 2000) (discussing issues with instruments that ask students to self-report); Linda Baker & Lorraine C. Cerro, *Assessing Metacognition in Children and Adults*, *in* ISSUES IN THE MEASUREMENT OF METACOGNITION 99, 103-06 (Gregory Schraw & James C. Impara eds., 2000) (discussing concerns with verbal reports).

85. *See* Paul R. Pintrich, Christopher A. Wolters, and Gail P. Baxter, *Assessing Metacognition and Self-Regulated Learning*, *in* ISSUES IN THE MEASUREMENT OF METACOGNITION 43, 61 (Gregory Schraw & James C. Impara eds., 2000) (discussing issues with instruments that ask students to self-report).

86. *See generally* Julie Dangremond Stanton et al., *Differences in Metacognitive Regulation in Introductory Biology Students: When Prompts Are Not Enough*, 14 LIFE SCI. EDUC. 1, 2-3 (2015) (discussing use of questionnaires); Barry J. Zimmerman & Manuel Martinez Pons, *Development of a Structured Interview for Assessing Student Use of Self-Regulated Learning Strategies*, 23 AM. EDUC. RSCH. J. 614, 617-19 (1986).

natural circumstances.[87] Qualitative methods that seek students' narrative responses can be easy to administer, even in large classes, and can provide more nuanced information, particularly with respect to metacognitive regulation, but they require significant time and resources for coding and analyzing.[88] And, because they also rely on self-reporting, narrative responses carry a similar risk that students' statements may be erroneous or incomplete.[89]

A mixed-method research approach for studying metacognition, wherein the results of qualitative and quantitative data are compared to obtain triangulated results, may offer a broader and more complete picture for drawing conclusions about students' actual metacognitive skills used during their learning processes.[90] In our prior studies, we have used both quantitative and qualitative tools to look for evidence of metacognitive skills. Our results have been somewhat inconsistent in finding a clear relationship between the two methods. In an earlier study, we found a relationship between quantitative and qualitative scores, albeit not a strong one, while in a later study we found no such relationship.[91] However, we have seen similar patterns with respect to quantitative and qualitative instruments as they related to academic success, indicating that both measures can provide important information about the impact of metacognitive skills.[92]

C. The Relationship Between Students' Metacognitive Skills and Academic Success in Law School

Over the past several years, legal educators have grown more interested in understanding the role that metacognitive skills might play

---

87.   *See* Paul R. Pintrich, Christopher A. Wolters, and Gail P. Baxter, *Assessing Metacognition and Self-Regulated Learning*, *in* ISSUES IN THE MEASUREMENT OF METACOGNITION 43, 60 (Gregory Schraw & James C. Impara eds., 2000).

88.   *See* Paul R. Pintrich, Christopher A. Wolters, and Gail P. Baxter, *Assessing Metacognition and Self-Regulated Learning*, *in* ISSUES IN THE MEASUREMENT OF METACOGNITION 43, 60 (Gregory Schraw & James C. Impara eds., 2000)

89.   *See* Paul R. Pintrich, Christopher A. Wolters, and Gail P. Baxter, *Assessing Metacognition and Self-Regulated Learning*, *in* ISSUES IN THE MEASUREMENT OF METACOGNITION 43, 86 (Gregory Schraw & James C. Impara eds., 2000).

90.   JOHN W. CRESWELL & VICKI L. PLANO CLARK, DESIGNING AND CONDUCTING MIXED METHODS RESEARCH 68-69 (Helen Salmon et al. eds., 3d ed. 2018) (discussing how convergent-design mixed-methods research can be used to provide a more complete understanding of a problem, to validate one set of findings with another, or to determine whether participants respond in different ways to predetermined scales and open-ended prompts).

91.   *See* Jennifer A. Gundlach and Jessica R. Santangelo, *Teaching and Assessing Metacognition in Law School*, 69 J. LEGAL EDUC. 156, 177-78 (2019) (finding evidence of a relationship between quantitative scores and qualitative scores at the end of the semester). *But see* Jennifer A. Gundlach and Jessica R. Santangelo, *Understanding the Metacognitive Space and Its Implications for Law Students' Learning,* 50 HOFSTRA L. REV. 769, 806-07 (2022) (suggesting that the narrow distribution of scores using the quantitative and qualitative instruments likely limited the ability to discern a relationship between the two).

92.   Jennifer A. Gundlach and Jessica R. Santangelo, *Understanding the Metacognitive Space and Its Implications for Law Students' Learning,* 50 HOFSTRA L. REV. 769, 807 (2022).

in improving law students' learning.[93] It stands to reason that the knowledge and regulation components of metacognition would be important for the critical thinking skills required of lawyers.[94] In fact, early studies found a relationship between metacognitive skills and law students' academic performance.[95]

We too have reported on our studies showing a correlation between law students' metacognitive skills and academic success in the first semester of law school.[96] In our first study, we analyzed the impact of teaching metacognitive skills to first-year law students, and whether there was a correlation between our quantitative and qualitative measures of students' metacognitive skills and their academic performance in law school.[97] We found a relationship between law students' metacognitive skills and academic performance, but, likely due to the small size of our pool, there was no statistically significant evidence that the teaching of metacognitive skills during the first semester of law school immediately impacted students' development of those skills.[98] However, instruction did have the positive impact of increasing the number of active learning

---

93. *See, e.g.,* Alleva & Gundlach, *supra* note 4, at 723-24 (discussing why the teaching of metacognitive skills can improve learning for law students generally and, more specifically, within the context of a Civil Procedure course, and offering suggestions for how to integrate such instruction); 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, 155 (2012) (asserting that "[t]he most important skills law schools can teach students to make them better lifelong learners are metacognitive strategies."); *cf.* Nelson P. Miller, *Mapping Lawyer Competencies onto the Law School Curriculum to Confirm that Graduates Are Prepared for Law Practice* (June 30, 2011), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2461037 (listing metacognition as a lawyer competency).

94. *See* Cheryl B. Preston, Penée Wood Stewart, and Louise R. Moulding, *Teaching "Thinking Like a Lawyer": Metacognition and Law Students*, 2014 5 B.Y.U. L. REV. 1053, 1057-62 (2014) (noting that "metacognition is important for the execution of higher-level thinking skills, such as analysis and synthesis" and describing how metacognition enhances basic lawyering skills, relieves anxiety, and boosts confidence); Ruth Vance & Susan Stuart, *Of Moby Dick and Tartar Sauce: The Academically Underprepared Law Student and the Curse of Overconfidence*, 53 DUQ. L. REV. 133, 148, 160 (2015) (asserting that "[m]etacognition is critical to advancing the skills basic to being a lawyer, critical thinking and problem solving" and "[l]awyering requires accurate self-assessment").

95. *See, e.g.,* Andrea A. Curcio et al., Does Practice Make Perfect? An Empirical Examination of the Impact of Practice Essays on Essay Exam Performance, 35 FLA. ST. U. L. REV. 271, 313 (2008) (reporting on a study suggesting that "students learn better when given opportunities to practice a skill and receive feedback on that practice" and that combining metacognitive exercises with teaching methods may help to improve all student performances); Cheryl B. Preston, Penée Wood Stewart, and Louise R. Moulding, *Teaching "Thinking Like a Lawyer": Metacognition and Law Students*, 2014 5 B.Y.U. L. REV. 1053, 1063, 1066, 1068-69 (2014) (discussing study of first-year law students who were given the Metacognitive Awareness Inventory and noting weak metacognitive skills of many based on their responses).

96. *See* Jennifer A. Gundlach and Jessica R. Santangelo, *Understanding the Metacognitive Space and Its Implications for Law Students' Learning,* 50 HOFSTRA L. REV. 769, 777-78 (2022); Jennifer A. Gundlach and Jessica R. Santangelo, *Teaching and Assessing Metacognition in Law School*, 69 J. LEGAL EDUC. 156, 157-158 (2019) (finding that first-year law students with strong metacognitive skills were more likely to perform well in their first semester Civil Procedure course).

97. *See* Jennifer A. Gundlach and Jessica R. Santangelo, *Teaching and Assessing Metacognition in Law School*, 69 J. LEGAL EDUC. 156, 159, 165 (2019).

98. *Id.* at 159.

strategies that students reported using. In addition, students reported that the questionnaires we distributed and the professor's feedback for students on their midterms were useful pedagogical tools to encourage metacognitive practice.[99]

In a later study, we examined the interplay of the metacognitive components of knowledge and regulation and their impact, individually and collectively, on law students' academic performance in a first-year, first-semester Civil Procedure course.[100] Specifically, we set out to learn what level of metacognitive knowledge and regulation law students demonstrate when they enter law school, whether their skill levels change during the first semester, the impact of each component on their academic performance, and again, whether instructional intervention had an immediate impact on students' metacognitive skills over the course of a semester.[101]

With respect to metacognitive knowledge, we concluded that while almost all entering law students could generally explain how various learning strategies support specific learning tasks, the majority were unaware of active learning strategies[102] that support academic success in law school.[103] While most students did not come to law school with comprehensive metacognitive knowledge, most law students' metacognitive knowledge increased during the first semester of law school, regardless of whether these strategies were explicitly taught by their professor or not.[104] Notably, as discussed in the prior section about the interplay between the two components of metacognition, we found that metacognitive knowledge on its own was not associated with students' academic performance.[105]

With respect to metacognitive regulation, we found that after students received feedback on their first graded assessment, all

99.   *See id.* at 176-91.

100.   Jennifer A. Gundlach and Jessica R. Santangelo, *Understanding the Metacognitive Space and Its Implications for Law Students' Learning,* 50 HOFSTRA L. REV. 769, 795-810 (2022).

101.   Jennifer A. Gundlach and Jessica R. Santangelo, *Understanding the Metacognitive Space and Its Implications for Law Students' Learning,* 50 HOFSTRA L. REV. 769, 779-80 (2022).

102.   There are a range of active learning strategies found to be effective in law school, such as creation of visual aids and rubrics to synthesize and connect concepts, self-testing through practice multiple-choice and essay questions, and talking through and teaching the material with peers. See, e.g., Jennifer M. Cooper & Regan A. R. Gurung, *Smarter Law Study Habits: An Empirical Analysis of Law Learning Strategies and Relationship with Law GPA*, 62 ST. LOUIS UNIV. L. J. 361, 367-74 (2018) (surveying studies that have shown such links and reporting on consistent findings from law school empirical study); Robin A. Boyle, *Employing Active-Learning Techniques and Metacognition in Law School: Shifting Energy from Professor to Student*, 81 U. DETROIT MERCY L. REV. 1, 13-17, 19-20 (2003) (describing various active-learning and metacognitive techniques used in class).

103.   Jennifer A. Gundlach and Jessica R. Santangelo, *Understanding the Metacognitive Space and Its Implications for Law Students' Learning,* 50 HOFSTRA L. REV. 769, 795 (2022).

104.   Jennifer A. Gundlach and Jessica R. Santangelo, *Understanding the Metacognitive Space and Its Implications for Law Students' Learning,* 50 HOFSTRA L. REV. 769, 795-96 (2022).

105.   Jennifer A. Gundlach and Jessica R. Santangelo, *Understanding the Metacognitive Space and Its Implications for Law Students' Learning,* 50 HOFSTRA L. REV. 769, 796 (2022).

demonstrated at least some metacognitive regulation, and by the end of the first semester of law school, a little over one-third of the students showed increases in metacognitive regulation, almost two-thirds remained the same, and few regressed.[106] Only the reported use of active strategies, one qualitative measurement of metacognitive regulation, was associated with students' academic performance in the course, and students who added an active strategy during the semester were better situated to earn a higher grade than those who did not use an active strategy.[107] Students who evidenced full regulation, and particularly those who made multiple adjustments to their learning strategies, had the greatest academic success.[108] Although we again found no evidence that instructional intervention impacted metacognitive regulation, continuous reinforcement to practice with specific active strategies did result in more students' reporting use of these strategies.[109]

Thus, our studies have repeatedly shown a correlation between law students' metacognitive skills, particularly with respect to regulation, and their academic performance in a first semester, first-year law school course. And although we have seen evidence of students improving in overall metacognitive skills during their first semester of law school, we have not yet seen clear evidence that instructional intervention can improve metacognitive skills over the course of a semester.[110]

IV. EMPIRICAL STUDY OF THE METACOGNITION SKILLS OF THIRD-YEAR LAW STUDENTS

A.   Research Questions

In this study, we are following up on our prior work by exploring multiple aspects of metacognition. We benefited here from drawing on data we collected in connection with our previous study because a substantial number of students in the current cohort were also part of the cohort in that study during their first year of law school.

Specifically, we were now interested in understanding whether metacognitive skills can change during students' time in law school and/or

---

106. Jennifer A. Gundlach and Jessica R. Santangelo, *Understanding the Metacognitive Space and Its Implications for Law Students' Learning,* 50 HOFSTRA L. REV. 769, 797 (2022).

107. Jennifer A. Gundlach and Jessica R. Santangelo, *Understanding the Metacognitive Space and Its Implications for Law Students' Learning,* 50 HOFSTRA L. REV. 769, 797-801 (2022).

108. Jennifer A. Gundlach and Jessica R. Santangelo, *Understanding the Metacognitive Space and Its Implications for Law Students' Learning,* 50 HOFSTRA L. REV. 769, 800 (2022).

109. Jennifer A. Gundlach and Jessica R. Santangelo, *Understanding the Metacognitive Space and Its Implications for Law Students' Learning,* 50 HOFSTRA L. REV. 769, 801-02 (2022).

110. Jennifer A. Gundlach and Jessica R. Santangelo, *Understanding the Metacognitive Space and Its Implications for Law Students' Learning,* 50 HOFSTRA L. REV. 769, 802-04 (2022).

during their enrollment in a final semester, third-year bar preparation course. We also wanted to analyze the impact, if any, of the 1L intervention on students' metacognitive skills demonstrated in the 3L year. In addition to determining whether there is any relationship between metacognitive skills and success in the course, we also wanted to examine any relationship between metacognitive skills and success in law school, and/or bar passage. We also wished to compare these findings by analyzing other metrics that might be associated with bar passage, such as course performance, LSAT score and cumulative law school GPA. From the research practitioner perspective, we also wanted to continue to understand the utility and informativeness of using a relatively rapid Likert-style metacognition instrument, the MSLQ, relative to a more time intensive qualitative coding approach, to assess metacognitive skills and prediction of academic success.

B.   Methodology and Instrumentation

1.   Participants

This study was conducted during 2021-22 with third-year law students at the Maurice A. Deane School of Law at Hofstra University ("Law School"). All of the 252 students were enrolled in one of four sections of a course entitled Perspectives in Legal Writing and Analysis ("Perspectives"). One small section of 25 students was taught during the fall semester of the third year and included students who graduated or were finishing their course work in December of their third year and would sit for the February bar exam. The remaining 227 students were enrolled in sections offered during the spring semester of the third year, with 79, 58, and 90 students, respectively.

Perspectives is required for almost all third-year law students, as only a small percentage of people are permitted to opt out of taking it based on their high rank in the class. The course is designed to prepare students for the bar exam by focusing on developing successful exam and law practice skills. It involves in-depth skill instruction on rapid reading comprehension, issue identification, rule mastery, critical thinking, including the recognition of distractors, and legal analysis all in the context of working bar exam-style problems. It also provides instruction and review of highly tested doctrines, with emphasis on how to develop, use, and apply a flexible but strong analytical framework to solve bar exam problems.

Given that the students were enrolled in the course in their final semester before sitting for the bar exam, we felt it offered the best timing

to assess what, if any, relationship there was between their metacognitive skills in that course and their performance on the bar exam. Moreover, we did not want to negatively impact their bar preparation outside of law school by asking them to respond to a series of surveys to collect our data, and if we had done so, we would likely have significantly decreased the response rate. In addition, because some of these students participated in our most recent study when they were first-year law students, we could explore the extent to which a subset of these students had retained, gained, or lost metacognitive skills demonstrated during their first year of law school.

Hofstra University's Institutional Review Board declared this study exempt. Students in all sections were informed about the study and were offered the opportunity to consent (or not) to participate and have their data included. Instructors did not know which students consented to participate nor were instructors given access to student survey responses. All responses were de-identified prior to analysis. Of the 252 students enrolled across the four sections, 225 consented to participate in the study.

2.   Instrumentation and Instructional Intervention

We used the shortened version of the MSLQ[111] as our quantitative survey instrument, with a simplified five-point Likert scale for responses.[112] We paired this with questionnaires[113] modified slightly from past research studies[114], which provided us with narrative responses that we used for qualitative data analysis.

The MSLQ and the first questionnaire were electronically completed by all participating students during the first day of the course, prior to any instruction.[115] The first questionnaire was a Learning Strategies Plan ("LSP"), wherein students were asked to list up to 15 learning strategies they intended to use in connection with the course, explain why each strategy would be effective.[116] This questionnaire provided baseline data about students' metacognitive knowledge prior to any instructional intervention in the course so we could assess: (1) awareness of effective

---

111.   *See* Paul R. Pintrich & Elisabeth V. De Groot, *Motivational and Self-Regulated Learning Components of Classroom Academic Performance*, 82 J. EDUC. PSYCH. 33, 34 and App. (1990) (using shortened version of MSLQ); *see infra* App. A.
112.   Students could select one of the following answers: (1) Almost never true of me, (2) Rarely true of me, (3) Sometimes true of me, (4) Often true of me, (5) Almost always true of me. *See infra* App. A.
113.   *See infra* App. A.
114.   Jennifer A. Gundlach and Jessica R. Santangelo, *Teaching and Assessing Metacognition in Law School*, 69 J. LEGAL EDUC. 156, 168-171 (2019) (discussing use of qualitative instruments distributed to law students); Jennifer A. Gundlach and Jessica R. Santangelo, *Understanding the Metacognitive Space and Its Implications for Law Students' Learning,* 50 HOFSTRA L. REV. 769, 781-87 (2022).
115.   *See infra* Table 1.
116.   *See infra* App. A.

learning strategies relevant to the course and bar preparation, and (2) understanding of why and how those strategies support learning. Immediately following completion of the MSLQ and LSP, students listened to a lecture that provided an overview of effective learning strategies and an introduction to metacognition.[117]

Table 1: Overview of Instruments and Instruction.

Intervention	Assessment	Instrument	Description	Distribution Timing
		MSLQ (All Students)	Quantitative instrument to determine students' metacognitive knowledge & regulation before intervention	First Day of Class
		LSP Questionnaire Prompt (All Students)	Prompt to determine students' metacognitive knowledge before intervention	First Day of Class
Lecture			Overview of Effective Study Strategies and Introduction to Metacognitive Skills	First Day of Class
	MIDTERM			Mid-Semester
Survey #1 Post-Midterm Questionnaire		Survey #1 Post-Midterm Questionnaire	prompts to determine students' metacognitive knowledge of study strategies and regulation before intervention	In class before instructional intervention/ after midterm is returned
In-Class Discussion			feedback on midterm and revisiting effective learning strategies & metacognitive skills, reflections about changes to make with study strategies	In class after midterm is returned
Survey #2 Post-Midterm Questionnaire		Survey #2 Post-Midterm I Questionnaire	Prompts focused on ID of any additional strategies with explanations post-discussion to determine if further metacognition is shown	In class after Survey #1 and midterm review & discussion are completed

---

117. Students were instructed about a range of effective learning strategies for law school, with primary emphasis on active learning strategies such as creation of visual aids and rubrics to synthesize and connect concepts, self-testing through practice multiple-choice and essay questions, and talking through and teaching the material with peers.

Survey #3		Survey #3 Post-Essay Assessment Questionnaire	Prompts to determine students' metacognitive knowledge and regulation	In class after essay assignment is returned
	FINAL EXAM			End of Semester
		Final Reflective Questionnaire	Prompts to determine students' metacognitive knowledge and regulation and future plans for bar prep	End of semester, after final exam is taken
		Final MSLQ	Quantitative instrument	End of semester, after final exam is taken
		Consent Form		End of semester, after final exam is taken

During the semester, the students completed three additional questionnaires during class time. Survey 1 was completed after students received feedback from the first graded assessment and prior to that assessment being discussed in class. The questionnaire asked them to:

- review each strategy they had listed on their LSP;
- identify any of those strategies used to prepare for the graded assessment;
- provide additional insights to explain how any of those strategies helped with learning the material;
- list any additional strategies used and for each, explain how it helped (or did not help) prepare for the graded assessment;
- identify areas for improvement based on their review of the feedback on the graded assessment; and
- describe any plans to make changes to their learning strategies going forward, identifying any new strategies and why they thought they would improve their performance; or, if they did not plan to make any changes or were unsure about making any changes, it asked them to explain why.[118]

The students' responses provided data about their metacognitive knowledge of effective study strategies at this point in the semester, as well as evidence of their metacognitive regulation, i.e., did they execute

---

118. *See infra* App. A.

on their planned strategies, use effective strategies, understand areas for improvement, and identify appropriate changes, if any, to make. It also gave us information about whether and to what extent students retained what they heard from the instructional intervention they received at the beginning of the semester.

Immediately following completion of Survey 1, the professor provided feedback to the class about the graded assessment and revisited the concepts about effective learning strategies and metacognitive skills introduced during the orientation session earlier in the semester. Survey 2 was completed immediately following that in-class lecture. Survey 2 asked students to:

- indicate whether, based on what they heard, they planned to make any changes to their learning strategies; and
- if so, list strategies they planned to use to improve their performance and explain why those strategies would help.[119]

These questions were designed to provide data about whether students' metacognitive knowledge and regulation increased immediately after the instructional intervention.

Survey 3 was completed after the professor provided feedback to the class about their performance on another graded assessment later in the semester, again reminded students about effective learning strategies and metacognitive skills, and encouraged them to reflect on their performance. Survey 3 was almost identical to Survey 1, except that it included prepopulated information about learning strategies identified by the students in Survey 1 or Survey 2 that had not been previously identified on the LSP.[120] This questionnaire provided us with similar data about students' metacognitive knowledge and regulation as Survey 1.

At the end of the semester, following completion of the final exam, students were asked to complete a Final Reflective Survey ("FRS") and the same short version of the MSLQ. Here we asked for students to provide the responses to the following:

- review each strategy listed on prior surveys and identify which, if any, were used to prepare for the final exam;
- provide any additional insights about how each strategy helped with learning;

---

119. *See infra* App. A.
120. *See infra* App. A.

- identify any additional strategies used and explain how each helped (or did not help) the student prepare for the final exam;
- report any changes made to their learning strategies during the semester and explain why, or if no changes were made, explain why;
- if they used a study group, provide details about the methods they used with that group; and
- explain how they planned to prepare for the bar exam and why they would take that approach.[121]

These questions were designed to provide data about students' metacognitive knowledge of study strategies by the end of the semester, as well as evidence of metacognitive regulation, that is, did the students understand their learning challenges and did they select appropriate strategies and follow through with them by that point in time. We included the question about their use, if any, of study groups because we have found that students' work in these groups can elicit further information about strategies they are using and just indicating that they were using a study group didn't provide sufficient information for us to determine what strategies were employed in the group.

C.   The Coding Process

For this study, we relied on a slightly modified version of a prior codebook that we developed in connection with our previous research[122] to review students' responses to the questionnaires and assess their reported levels of metacognitive knowledge and regulation at various points during the semester. The codebook included descriptions of the evidence needed to demonstrate the skills associated with metacognitive knowledge and regulation.[123]

1.   Evidence of Metacognitive Knowledge

As noted *supra* in Part III, metacognitive knowledge involves the awareness of different learning strategies, how to use them, and in what

---

121.   *See infra* App. A.

122.   Jennifer A. Gundlach and Jessica R. Santangelo, *Teaching and Assessing Metacognition in Law School*, 69 J. LEGAL EDUC. 156, 171-76 (2019) (discussing codebook and coding process); Jennifer A. Gundlach and Jessica R. Santangelo, *Understanding the Metacognitive Space and Its Implications for Law Students' Learning,* 50 HOFSTRA L. REV. 769, 787-95 (2022) (discussing codebook and coding process).

123.   *See infra* App. B.

contexts they can be useful.[124] Therefore, our codebook dictates that to demonstrate metacognitive knowledge, students must know effective learning strategies for bar preparation, and understand when, where, and why such strategies are important.

Our first task was to identify what students need to be able to do to accomplish the learning task, namely success on the bar exam. As noted *supra* in Part II, the bar exam, like many law school exams, is designed to assess (1) knowledge of substantive legal principles, (2) the ability to apply that substantive knowledge by identifying legal issues in a fact pattern, assessing and analyzing the material, and using legal reasoning to draw conclusions, as well as (3) completing a task by using fundamental lawyering skills of a beginner lawyer in a realistic situation.[125] The knowledge and skills for passing the bar exam are consistent with the learning outcomes expected in law school.[126]

Based on these learning expectations, we drew on our research and that of others to compile a list of effective strategies for success in law school and on the bar exam, including both "active" and "passive" methods.[127] Active strategies are those that require students to "manipulate and process information in his or her own way in order to fully understand it."[128] In the law school setting, active strategies such as answering practice multiple-choice questions can help with long-term retention and promote critical thinking skills, such as analysis, synthesis, and evaluation.[129] Alternatively, passive strategies such as rereading or

---

124. Paul R. Pintrich et al., *Assessing Metacognition and Self-Regulated Learning*, *in* ISSUES IN THE MEASUREMENT OF METACOGNITION 43, 45 (Gregory Schraw & James C. Impara eds., 2000); Gregory Schraw & Rayne Sperling Dennison, *Assessing Metacognitive Awareness*, 19 CONTEMP. EDUC. PSYCH. 460, 460 (1994) (describing the metacognitive knowledge component as including declarative, procedural, and conditional knowledge).

125. *See* National Conference of Bar Examiners, *MBE*, found at https://www.ncbex.org/exams/mbe/; *MEE*, found at https://www.ncbex.org/exams/mee/; *MPT*, found at https://www.ncbex.org/exams/mpt/.

126. *See* ABA STANDARDS AND RULES OF PROCEDURE FOR APPROVAL OF LAW SCHOOLS 2022-23, Standard 302 at 17 (2022-23) (American Bar Association, 2022), found at:
https://www.americanbar.org/content/dam/aba/administrative/legal_education_and_admissions_to_t he_bar/standards/2022-2023/22-23-standard-ch3.pdf

127. *See infra* Table 2.

128. Paula Lustbader, *From Dreams to Reality: The Emerging Role of Law School Academic Support Programs*, 31 U.S.F. L. REV. 839, 855 (1997).

129. *See, e.g.*, Gerald F. Hess, *Listening to Our Students: Obstructing and Enhancing Learning in Law School*, 31 U.S.F. L. REV. 941, 943 (1997); Elizabeth M. Bloom, *Creating Desirable Difficulties: Strategies for Reshaping Teaching and Learning in the Law School Classroom*, 95 U. DETROIT MERCY L. REV. 115, 135-50 (2018) (discussing active strategies to prompt metacognition, such as creating and practicing multiple-choice questions, creating visual organizers, and practicing essay questions); Robin A. Boyle, *Employing Active-Learning Techniques and Metacognition in Law School: Shifting Energy from Professor to Student*, 81 U. DETROIT MERCY L. REV. 1, 3-7 (2003) (discussing a range of active learning strategies that can be effective in law school); Jennifer M. Cooper & Regan A. R. Gurung, *Smarter Law Study Habits: An Empirical Analysis of Law Learning Strategies and Relationship with Law GPA*, 62 ST. LOUIS UNIV. L. J. 361, 385-90 (2018) (discussing a survey of law students' study habits and the positive correlation with law school GPA between reported use of practice questions and ability to explain concepts to others).

using flash cards are less effective for long-term retention when used on their own.[130]

Table 2: Strategies Aligned with Learning Expectations in Law School

PASSIVE:
Outline (with no explanation and/or no reference to supplementing/synthesizing material)
Briefing cases
Reviewing & rereading in book/notes/topics/retyping notes
Taking notes/color coding/rewriting/highlighting
Mnemonics/memorization
Research
Read for class/read ahead/complete assignments on time/study daily
Flashcards/Index Cards/Note cards
Study scheduling/time management
Listen to class podcast recordings
Create vocab sheet
Supplements/Secondary sources (no hypos mentioned)
Review sessions (no description)
Attend exam skills workshops/meet with academic support
Going to Professor's Office Hours (no discussion of what is being done, no hypos, etc.)
Study groups & talk/review with Peers (no hypos/just review cases, one-way help from others)
Analogies
Review answers they got wrong (not re-taking the question)
ACTIVE
Practicing fact patterns/hypos/problems/practice tests (inc. in supplemental sources)
Review session (hypos or creation of new material like flow charts)
Study groups doing active strategies (hypos, visual aids, etc.) and/or two-way practice
Self-testing, speaking to self, asking self what was learned & what you know/don't know
Creating flowcharts/tables/roadmaps of key concepts/study guides
Creating scripts or rubrics for approaching fact patterns
Review questions in book
Teaching to someone
Outlining or note-taking (showing synthesis, conceptualizing, annotating with own work/thoughts)
Rewriting in Own Words

---

130.   *See* James McGrath, *Planning Your Class to Take Advantage of Highly Effective Learning Techniques*, 95 UNIV. DET. MERCY L. REV. 153, 168-78 (2018) (surveying effective and ineffective learning strategies); Cooper & Regan A. R. Gurung, *Smarter Law Study Habits: An Empirical Analysis of Law Learning Strategies and Relationship with Law GPA*, 62 ST. LOUIS UNIV. L. J. 361, 388-90 (2018) (reporting on empirical findings that passive strategies like reading and rereading without practice applying the law are negatively correlated with law school academic success).

Retaking questions from a prior midterm, etc.

According to our codebook[131], we looked for evidence of the two components of metacognitive knowledge specific to law school and bar preparation in the students' questionnaire responses.[132] In addition to the individual components, we also monitored students' overall metacognitive knowledge.[133] For example, we would conclude that a student demonstrated full metacognitive knowledge if they identified "self-testing with sample multiple-choice questions" as a strategy and explained that this method would help them apply the substantive law principles. Given the short time frame between distribution of the questionnaires during the semester, we further concluded that once students demonstrated metacognitive knowledge at any point in the semester, they would not lose it.[134]

Table 3. Codebook definitions of Knowledge and Regulation.	
Knowledge	
K1	awareness of at least one active learning strategy, given the importance of active strategies to learning in law school and for bar preparation
K2	stated understanding of how specific learning strategies support specific learning tasks
Overall	None – demonstrated neither K1 nor K2 Some – demonstrated one component Full – demonstrated both components
Regulation	
R1	reported use of least one active learning strategy
R2	identification of an area of struggle with the learning task based on instructor feedback on an assessment
R3	identification of at least one strategy to improve performance that is responsive to the student's learning struggle
R4	articulation of one or more past or future changes to the student's learning strategies
Overall	None – demonstrated no components of regulation Some – demonstrated 1-3 components in any combination Full – demonstrated all 4 components Extensive – demonstrated all 4 components plus evidence of use of multiple active strategies and multiple adjustments to strategies through time

---

131. *See infra* App. B.
132. *See infra* Table 3.
133. *See infra* Table 3.
134. *Cf.* Gregory Schraw, *Promoting General Metacognitive Awareness*, 26 INSTRUCTIONAL SCI. 113, 117 (1998) (noting that as students acquire more metacognitive knowledge in a number of domains, they may have general metacognitive knowledge that they can use in a more flexible manner, particularly in new areas of learning).

2.   Evidence of Metacognitive Regulation

As noted above in Part III, the regulation components of metacognition involves making appropriate decisions about which strategies to use for a learning task, as well as monitoring and evaluating the learning process based on feedback.[135] Within the context of legal education, a law student regulates their learning by using one or more effective strategies, and then, based on formative assessment and performance feedback received from the instructor, self-assesses areas for improvement and makes adjustments to learning strategies to achieve that.

Our codebook reflects previous findings which have indicated how metacognitive regulation can be evidenced in students' narrative responses to the questionnaires.[136] For R2-R4, we alternatively found evidence of regulation if a student opted not to make any changes because they accurately identified that they had performed well as a result of their use of effective strategies.[137] Similarly, we recognized that dropping an *ineffective* strategy could be evidence of regulation if the student was able to appropriately explain why it wasn't working.[138] In addition to the individual components, we also monitored those students who evidenced overall metacognitive regulation.[139] For example, we would conclude that a student demonstrated full metacognitive regulation if they reported use of one or more active strategies such as self-testing, identified that they struggled with structuring their essay responses effectively based on feedback they received on a midterm, and indicated that they planned to start practicing hypos with essay responses. It also bears noting that unlike evidence of knowledge, students could inconsistently demonstrate *regulation* at various times throughout the semester.

3.   Qualitative Codes

The following process was applied to each survey, starting with the LSP. We coded all students' responses to the questionnaire before coding the responses on the next questionnaire that had been distributed to them.

---

135.   Gregory Schraw & Rayne Sperling Dennison, *Assessing Metacognitive Awareness*, 19 CONTEMP. EDUC. PSYCH. 460, 460 (1994) (describing metacognitive regulation as having five components: planning, information management strategies, comprehension monitoring, debugging strategies, and evaluation).

136.   Jennifer A. Gundlach and Jessica R. Santangelo, *Understanding the Metacognitive Space and Its Implications for Law Students' Learning,* 50 HOFSTRA L. REV. 769, 791 (2022) (discussing codebook relating to metacognitive regulation).

137.   *See supra* Table 3.

138.   *See* James McGrath, *Planning Your Class to Take Advantage of Highly Effective Learning Techniques*, 95 UNIV. DET. MERCY L. REV. 153, 167 (2018).

139.   *See supra* Table 3.

Based on students' anonymized questionnaire responses, each member of our research team used the codebook as a guide to individually review a subset of students' responses to a questionnaire beginning with the LSP and continuing in the order in which they were distributed to the students during the semester. We then discussed the codes we assigned, resolved disagreements, and revised the codes and codebook as necessary. Previously coded responses were re-examined with each codebook revision. Once we had assigned codes for all the students' responses for all questionnaires, we re-examined everything one final time, using our final version of the codebook for reference.

As can be the case with qualitative data, students' narrative answers were not always clear. For example, their responses did not match the question being asked, but might still provide useful data. As a result, there were times when we needed to look holistically at all responses provided by a student within a questionnaire, or across some or all a student's questionnaires during the semester. For example, if a student stated that they were not using any active strategies, but reported later in the questionnaire that they were actually using an active strategy, we accepted this as evidence of metacognitive regulation and would assign a code accordingly.[140] If we ultimately concluded that if we had insufficient information from the responses in a student's questionnaires, we would assign a code of "Can't Categorize" and remove that student's responses from the data set. Ultimately, we removed 29 students from the dataset for this reason.

For those students who indicated that they were not making changes because they believed that their methods were working, we needed to determine if their assessment of how they were doing was accurate in order to find evidence of metacognitive regulation. During the coding process, we initially assigned these students (N=41) a "double code", which included a "lower" code assuming they were inaccurately reflecting and a "higher" code assuming they were accurately reflecting. Once all coding was complete, we resolved the code by checking the relevant graded assessments or final exam score.[141]

---

140. *See* Julie Dangremond Stanton et al., *Differences in Metacognitive Regulation in Introductory Biology Students: When Prompts Are Not Enough*, 14 LIFE SCI. EDUC. 1, 3 (2015) (noting that they gave students the benefit of the doubt when they were not certain what the answers reflected).

141. *See infra* App. B. For the first graded assessment, we determined that students "performed well" if they scored _91 (A-)_ or better. For the second graded assessment, "performing well" meant that students scored _4 out of 6 points_ or better. For the final grade for the course, students "performed well" if they scored a _A-_ or better. The distribution of final grades was similar across the sections (Fisher's Exact Test N=225, p=0.184).

V.   Analysis and Results

All analyses were conducted using R statistical software.[142] When running cross tabulations, we had R auto-select a Fisher's Exact Test or a Chi-Square due to small cell sample sizes in some categories. We specify which test was used in reporting each result.

Some of the 196 students included in the dataset had missing data. For example, a student might complete all research instruments except the post-MSLQ. In other instances, a student might complete all research instruments yet provide an incomplete or unclear survey response that precluded assignment of a code for a specific component of knowledge or regulation. We opted to include students with missing data in the study, excluding from any analysis those students missing data relevant to that analysis. Therefore, sample sizes vary across analyses. This allowed us to maximize sample size for each research question.

For longitudinal questions from the 1L to 3L year, 174 of the 196 3L students included in the dataset also participated in the study as 1L students. Of the students who participated as 1Ls, 58 received the metacognition intervention and 116 did not.

As noted above, given that we used a mixed-methods study by using both quantitative and qualitative measures of metacognition, we used the qualitative and quantitative metacognition data to (1) triangulate them, and (2) relate each to other quantitative data, such as LSAT scores and cumulative law school GPA. The quantitative and qualitative metacognition data did triangulate. Full and extensive metacognitive regulation, as determined through coding of students' survey responses, correlated with students' MSLQ Scores at the end of the semester (Spearman's Correlation $r_s(194)=0.321$, $p<0.001$).[143] Specifically, MSLQ scores at the end of the semester were lower for students evidencing no and some regulation relative to those evidencing full and extensive regulation (One-way ANOVA N=196 ($F(3, 184) = 8.509$, $p < 0.001$; Tukey HSD adj $p \leq 0.029$).[144] We found no other noteworthy findings of relationships between MSLQ scores and any other quantitative or qualitative data. This is different than our prior studies where we did not

---

142.   R: A Language and Environment for Statistical Computing (R. Foundation for Statistical Computing, Vienna, Austria), located at: https://www.R-project.org/.
143.   *See infra* Figure A.
144.   *See infra* Figure A.

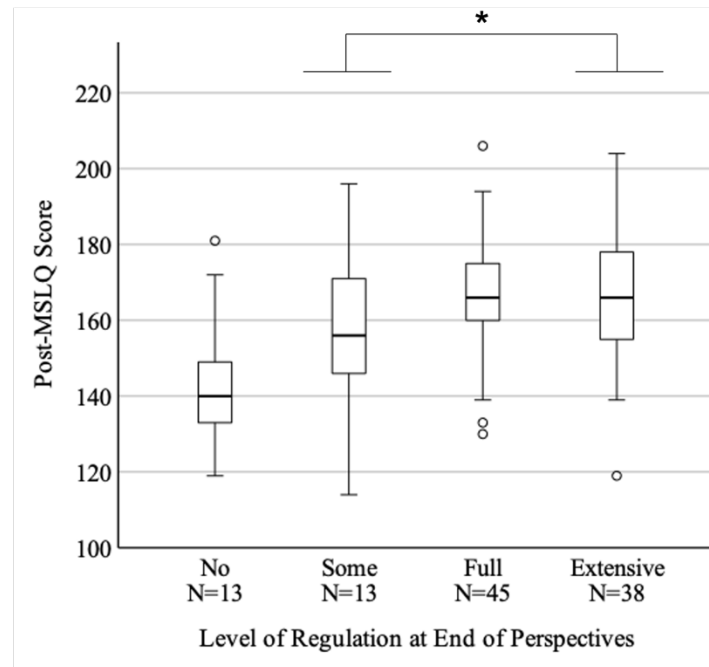find a clear relationship between our quantitative and qualitative results.[145]

Figure A. Level of regulation at the end of Perspectives as determined by coding survey responses and post-MSLQ scores. There was both a relationship between coded level of regulation and post-MSLQ score (Spearman's Correlation: $r_s(194)=0.321$, $p<0.001$) and a difference in post-MSLQ score between students evidencing full or extensive regulation and those evidencing no or some regulation (One-way ANOVA: N=196 (F(3, 184) = 8.509, p < 0.001; Tukey HSD adjusted p<=0.029).

While the MSLQ offered a relatively rapid assessment of metacognition at the beginning and end of the semester, it did not provide the depth or richness of information available via the more time-consuming qualitative coding approach. Therefore, we focus the remainder of our discussion of the results on qualitative metacognition data.

---

145. *See* Jennifer A. Gundlach & Jessica R. Santangelo, *Understanding the Metacognitive Space and Its Implications for Law Students' Learning,* 50 HOFSTRA L. REV. 769, 806-07 (2022).

A. Metacognitive Skills Can Change Through Time

1. Students Gained Metacognitive Knowledge Both During Law
   School and In Perspectives

In our prior study of students in their 1L year, we found that only 35.1% of them began law school with awareness of one active strategy that supports success in law school.[146] Awareness of active strategies provides evidence of the K1 component of metacognitive knowledge.[147] At the start of their 1L year, roughly 90% of students could accurately explain why or how the strategies they identified support specific learning tasks, evidence of the K2 component of metacognitive knowledge.[148] Thus, most students entered law school that year with some, but not full, metacognitive knowledge.

In the Perspectives course in the 3L year, 76% of Perspectives students [143 of 188] demonstrated evidence of the K1 component of metacognitive knowledge at the beginning of the semester, and by the end of the semester, 93.6% [176 of 188] had evidence of the K1 component. Additionally, 80.9% [152 of 188] of Perspectives students demonstrated evidence of K2 at the beginning of the semester, whereas 91.5% [172 of 188] showed evidence of K2 at the end of the semester. In fact, most 3L students [123 of 188 or 65%] entered Perspectives with evidence of full metacognitive knowledge.

The growth of both components of metacognitive knowledge in students from the start of law school to the beginning of the last semester suggests that law students can learn these skills during law school. Moreover, these skills can be learned during a one semester course, even in their final semester of law school. Given the substantial number of students who demonstrated metacognitive knowledge at the outset of Perspectives as compared to the start of law school, it appears that once they gain metacognitive knowledge, students tend to retain it over time.

---

146. *See* Jennifer A. Gundlach and Jessica R. Santangelo, Understanding the Metacognitive Space and Its Implications for Law Students' Learning, 50 HOFSTRA L. REV. 769, 795 (2022).
147. *See supra* Part IVC.
148. *See* Jennifer A. Gundlach and Jessica R. Santangelo, Understanding the Metacognitive Space and Its Implications for Law Students' Learning, 50 HOFSTRA L. REV. 769, 795 (2022). *See supra* Part IVC.

This is consistent with our prior findings.[149]

2. Most Students Maintained or Gained Metacognitive Regulation Both During Law School and in Perspectives

We similarly found long-term maintenance and even improvement in most students' metacognitive regulation over time. Of the 89 students for whom we could track overall metacognitive regulation level from the end of the first semester of law school to the end of the 3L year, most students (61.8%) either maintained or gained metacognitive regulation.[150]
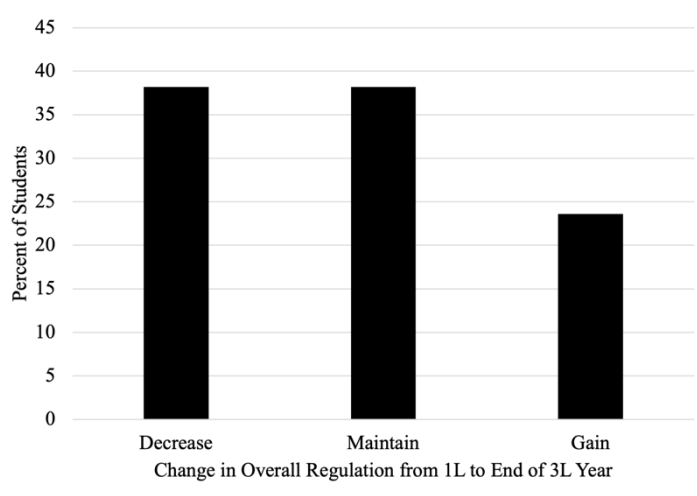
Figure B. Percent of students (N=89) who decreased, maintained, or gained regulation from the 1L year to the end of Perspectives in the 3L year.

Likewise, most students maintained or gained metacognitive regulation even during the one-semester Perspectives course in their final semester of law school. Of the 196 students in the course for whom we have regulation data at both Survey 1 (the first survey where we could

---

149. *See supra* Part IVC1. *See also* Jennifer A. Gundlach and Jessica R. Santangelo, Understanding the Metacognitive Space and Its Implications for Law Students' Learning, 50 HOFSTRA L. REV. 769, 795 (2022). *Cf.* Gregory Schraw, *Promoting General Metacognitive Awareness*, 26 INSTRUCTIONAL SCI. 113, 117 (1998) (noting that as students acquire more metacognitive knowledge in a number of domains, they may have general metacognitive knowledge that they can use in a more flexible manner, particularly in new areas of learning).

150. *See infra* Figure B.

gather evidence of metacognitive regulation) and the Final Survey, 79.1% maintained or gained regulation.[151]
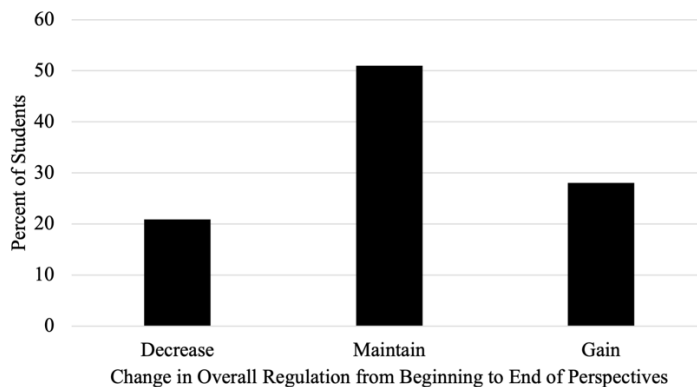

Figure C. Percent of students (N=196) who decreased, maintained, or gained regulation from the beginning to the end of Perspectives in the 3L year.

As compared to metacognitive knowledge, metacognitive regulation skills are more variable both in time and across contexts.[152] These results indicate that, like metacognitive knowledge, students can gain metacognitive regulation throughout law school. In fact, it is heartening that such skills can be learned even in a final semester bar preparation course. Given our findings that metacognitive regulation can help with academic performance[153], law faculty should be encouraged to integrate instruction and facilitation of metacognitive skills in their courses. This includes providing regular feedback on student performance through formative assessments, combined with prompts to adjust learning strategies to meet the academic expectations of law school, both of which support students' development and continued use of metacognitive regulation skills.[154]

B. The 1L Metacognition Intervention Affected Development of Some

---

151.   *See infra* Figure C.

152.   *See* Paul R. Pintrich et al., *Assessing Metacognition and Self-Regulated Learning*, *in* ISSUES IN THE MEASUREMENT OF METACOGNITION 43, 45 (Gregory Schraw & James C. Impara eds., 2000).

153.   *The infra* Part IVC.

154.   *See* Jennifer A. Gundlach and Jessica R. Santangelo, Understanding the Metacognitive Space and Its Implications for Law Students' Learning, 50 HOFSTRA L. REV. 769, 808 (2022); Jennifer A. Gundlach & Jessica R. Santangelo, *Teaching and Assessing Metacognition in Law School*, 69 J. LEGAL EDUC. 156, 191-92 (2019).

Metacognitive Skills Through Time

    1.   The 1L Metacognition Intervention Did Not Affect
           Metacognitive Knowledge

Despite students' gains in metacognitive knowledge over time as discussed above, we found no evidence that the metacognition intervention that students received during the 1L year impacted their demonstration of the K1 or K2 components of metacognitive knowledge in the 3L year. At the start of Perspectives, students who had a metacognition intervention in the first semester of the 1L year were no more likely to be aware of learning strategies that support success in law school than peers who did not receive the intervention (Chi-Square: N=166, X^2=3.055, df=1, p=0.08). Nor was there any effect of the 1L metacognition intervention on the ability of 3L students at the start of Perspectives to explain how strategies they identified contributed to learning (Chi-Square: N=166, X^2=0, df=1, p=1).

These findings are consistent with those in our prior studies.[155] Repeated exposure throughout law school about active learning strategies and how active strategies can enhance academic performance may facilitate development of metacognitive knowledge, regardless of whether students learn these skills from professors, peers, or some other source.

    2.   The 1L Metacognition Intervention Did Affect Metacognitive
           Regulation

In contrast to metacognitive knowledge, the 1L metacognition intervention was associated with one component of metacognitive regulation in particular: the use of active strategies, what we delineated as the R1 component of metacognitive regulation. Students who experienced the 1L metacognition intervention were more likely to be using active strategies at the beginning of Perspectives relative to peers who did not experience the 1L intervention (Chi-Square: N=173, X^2=6.480, df=1, p=0.011).[156] By the end of Perspectives, there was no difference in use of active strategies between those who experienced versus those who did not experience the 1L intervention (Chi-Square: N=169, X^2=0.005, df=1,

---

155. *See* Jennifer A. Gundlach and Jessica R. Santangelo, Understanding the Metacognitive Space and Its Implications for Law Students' Learning, 50 HOFSTRA L. REV. 769, 796 (2022); Jennifer A. Gundlach & Jessica R. Santangelo, *Teaching and Assessing Metacognition in Law School*, 69 J. LEGAL EDUC. 156, 183-84 (2019).

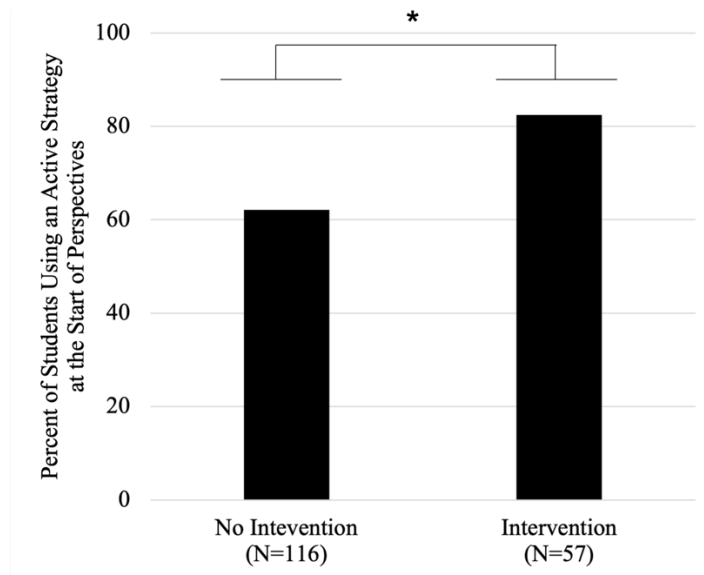156. *See infro* Figure D.

p=0.946).[157]

Figure D. Percent of students using an active strategy at the start of Perspectives in the 3L year. A larger proportion of students who received a metacognition intervention in the 1L year reported using active strategies at the start of Perspectives relative to peers who did not receive the intervention (Chi-Square: N=173, X^2=6.480, df=1, p=0.011).

The R1 component of metacognitive regulation was the only one associated with metacognitive intervention. The 1L intervention was not associated with either changes in students' overall metacognitive regulation from their first semester to their last semester of law school (Chi-Square: N=89, X^2=0.674, df=2, p=0.714), nor on students' overall level of metacognitive regulation at the beginning or the end of Perspectives (Fisher's Exact Tests: N=174, p=0.322 and 0.482, respectively).

As discussed above, metacognitive regulation is comprised of four components.[158] The intervention that some students received in their 1L Civil Procedure course provided early instruction and reminders about all four components of metacognitive regulation. Our findings indicate that the only long-term effect of that instruction was with respect to the R1 component of regulation: the use of active learning strategies. This

---

157. *See infra* Figure D.
158. *See supra* Part IVC2.

suggests that early interventions of this type have the capacity to create long-term impact. In addition, it is possible that combining early intervention with continuous instruction and reminders throughout law school may have the potential to increase students' development of the other regulation components, even in the last semester of law school.

C. There Is an Association Between Metacognitive Skills and Success in Perspectives and Law School

1. Metacognitive Knowledge at the End, But Not the Beginning of Perspectives, Is Associated with Success in Perspectives

Metacognitive knowledge at the beginning of Perspectives was not associated with success in the course, which we defined as an A- or better.[159] This was true both for the K1 component alone, i.e., knowledge of at least one active learning strategy, (Chi-Square: N=188, X^2=3.748, df=1, p=0.053), as well as for overall metacognitive knowledge (Chi-square: N=188, X^2=3.550, df=2, p=0.169). However, metacognitive knowledge at the end of Perspectives was associated with success in the course. This was true both with respect to the K1 component alone (Fisher's Exact Test: N=188, p=0.030), and with overall metacognitive knowledge (Fisher's Exact Test: N=188, p=0.021).[160]

These findings suggest that students can compensate for their lack of metacognitive knowledge at the start of the course and still finish strong if they become aware of an active strategy during the semester. This tracks our findings that students can gain metacognitive skills even during the short span of a semester, further emphasizing the benefit to students of receiving continuous reminders and reinforcement about effective learning strategies and how those strategies support success in law school.

---

159. *See infra* n. 139.
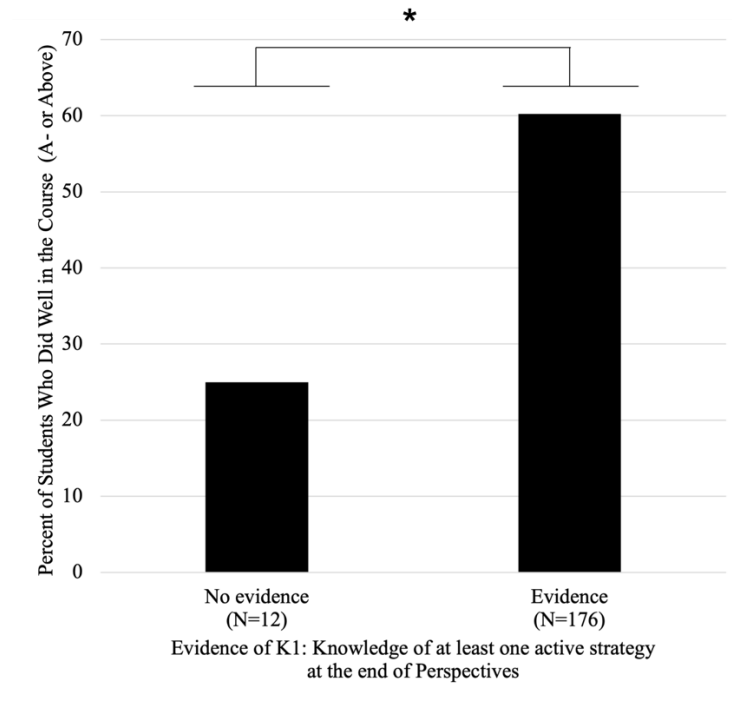160. *See infro* Figure E.

Figure E. Percent of students who did well in Perspectives (A- or better). Students with K1 (evidence of knowledge of at least one active strategy) at the end of Perspectives were more likely to do well in the course relative to peers with no evidence of knowledge of at least one active strategy (Fisher's Exact Test: N=188, p=0.030).

2.   Metacognitive Regulation Was Associated with Success in Perspectives

We considered overall regulation, as well as each of the four components of metacognitive regulation separately, to determine if there was any association with success in Perspectives. Overall regulation was associated with success in the course. Those students with full or extensive regulation, i.e., with evidence of all four regulation components, at the end of Perspectives were more likely to do well in the course relative to students with none or some regulation (Chi-Square N=188, X^2=9.768, df=3, p=0.024; Post hoc Chi-Square pairwise testing, Benjamini and Hochberg adjustment: adjusted p <0.05).[161]
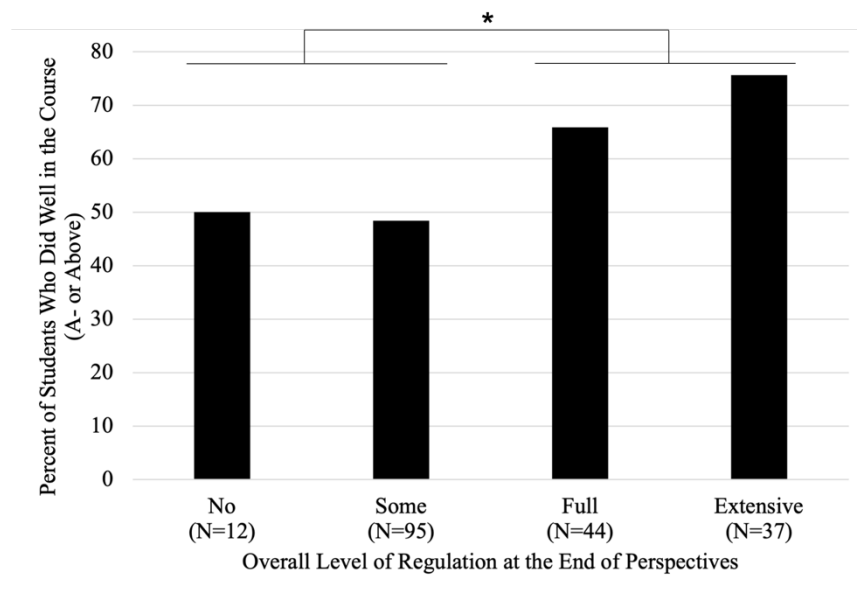
---

161. *See infra* Figure F.

Figure F. Percent of students who did well in the course as a function of overall level of regulation at the end of Perspectives. A larger proportion of students with Full and Extensive regulation did well in the course relative to students with No and Some regulation (Chi-Square N=188 X^2=9.768, df=3, p=0.024; Post hoc Chi-Square pairwise testing, Benjamini and Hochberg adjustment: adjusted p <0.05).

We also examined each of the four regulation components separately at two time points during the semester to determine if and how regulation at the beginning versus the end of Perspectives was associated with success. We used Survey 1, the first timepoint at which students could evidence regulation, and the Final Survey at the end of the semester.[162] Students who had evidence of components R1, R3, or R4 on Survey 1 were more likely to succeed in the course relative to peers without evidence of these regulation components.[163] By the end of the semester at the Final Reflective Survey, R1 was the only regulation component associated with success in the course.[164]

---

162. *See supra* Part IVB2, Table 1.
163. *See infra* Table 4.
164. *See infra* Table 4.

Table 4. Fisher's Exact Tests regarding likelihood of success in the course if evidencing each component of regulation. Sample sizes vary across each component as only students with complete, unambiguous responses related to a regulation component were included in analysis of that component. Italics indicate that students with the component were more likely to succeed relative to those without the component.

Regulation Component	Survey 1 (Reflecting on Midterm 1)		Final Survey (Reflecting on the Final Exam)	
	N	p	N	p
R1: Use of an active strategy to prepare for the exam	*187*	*0.011*	*184*	*0.03*
R2: Identified an issue they encountered on the exam	179	0.786	150	0.778
R3: Identified strategies to address an issue they encountered on the exam	*178*	*<0.0001*	152	0.153
R4: Made or planned to make adjustments to learning strategies	*187*	*0.001*	188	0.083

These findings are consistent with our prior study, in which we found that one component of regulation, R1, was associated with academic success in a 1L Civil Procedure course.[165] Here again in a final semester 3L bar preparation course, we found that R1, use of at least one active learning strategy, was associated with success in the course. Our results emphasize the importance of explicitly teaching and consistently reinforcing the use of active learning strategies. Our current results further provide new evidence about the impact on academic success of other components of regulation, specifically R3, the ability to identify strategies to address an issue encountered on the exam, and R4, making or planning to make adjustments to learning strategies.

3. Metacognitive Skills Were Associated with Success in Law School

We examined the impact of students' overall metacognitive knowledge and regulation in connection with their cumulative law school GPA, an indicator of success in law school. Students' demonstration of full or extensive metacognitive regulation at the end of the 3L year was

---

165. *See* Jennifer A. Gundlach and Jessica R. Santangelo, Understanding the Metacognitive Space and Its Implications for Law Students' Learning, 50 HOFSTRA L. REV. 769, 797-801 (2022).

associated with cumulative law school GPA (One-way ANOVA: N=196, F(3, 192)=4.07, p=0.0079), with this pattern driven by a difference between students with Extensive and Some regulation (Tukey HSD adj p=0.0064).[166] These results could be explained by the relatively small sample sizes within each regulation level and the amount of variation in cumulative law school GPA, particularly for students evidencing some regulation. In contrast, students' overall level of metacognitive knowledge at the end of the 3L year was not associated with cumulative law school GPA (One-way ANOVA: N=196 (F(2, 193) = 1.365, p=0.258).
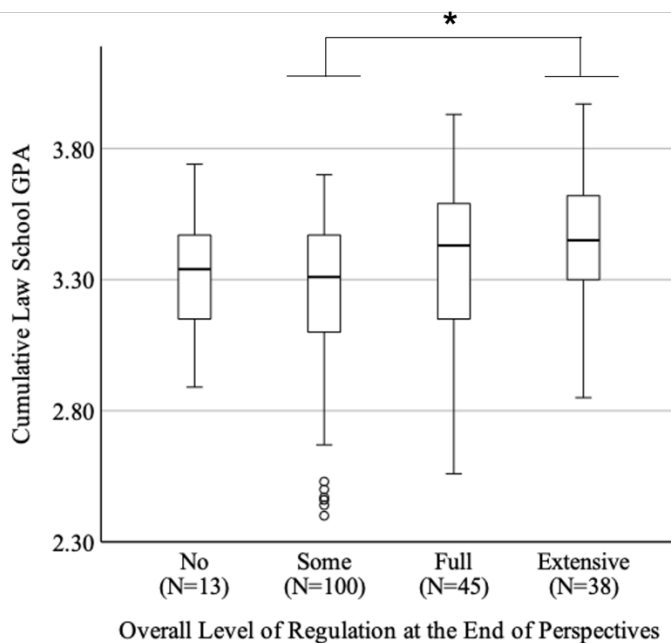

Figure G. Cumulative law school GPA as a function of overall level of regulation at the end of Perspectives. Cumulative law school GPA varies across overall level of regulation, with extensive regulation associated with higher GPA relative to some regulation (One-way ANOVA: N=196, F(3, 192)=4.07, p=0.0079; Tukey HSD adj p=0.0064).

While we interpret the results of students' overall metacognitive regulation with caution, the overall results are consistent with prior work showing that while knowledge is a prerequisite for regulation, it is the *use* of active learning strategies that matters, not simply knowledge of them.[167]

---

166. *See infra* Figure G.
167. *See* Jessica Santangelo, et a., *Developing Student Metacognitive Skills Using Active Learning Embedded with Metacognition Instruction*, 22 J. STEM Educ.: Innovations and Research 75, 75 (2021) (discussing how monitoring and knowledge are prerequisites for regulation).

D. Metacognitive Skills Were Not Associated with Bar Passage

We also examined whether there was an association between bar passage and students' overall metacognitive knowledge or regulation, as well as the individual components of each. We found no relationship with overall metacognitive knowledge nor regulation at either the beginning or end of Perspectives (Fisher's Exact Tests: Knowledge N= 178, Regulation N=178, p>0.05). Nor did we find an association between bar passage and the individual components of knowledge or regulation (Fisher's Exact Tests: K1 N=178, K2 N=176, R2 N=170, p>0.05; Chi-Square: R1 N=177, R3 N=169, R4 N=177, p>0.05). Finally, there was no difference in bar passage between students who experienced the 1L intervention and those who did not (Chi-Square: N=159, X^2=0.896, df=1, p=0.344).

These findings illustrate that metacognitive skills are not directly related with bar passage. However, our earlier findings indicate that metacognitive skills *are* related with academic performance in law school, and, in turn, academic performance in law school is directly related to performance on the bar. This apparent incongruity may be explained by the fact that metacognitive skills, particularly regulation skills, help students maximize learning during law school so that they are better positioned to succeed on the bar exam.

E. Other Metrics Were Associated with Bar Passage

In addition to metacognitive skills, we also examined other metrics that might be associated with bar passage, given the findings in other studies discussed above.[168] For example, prior research has shown that the addition of bar preparation courses offered to students in their final semester can have a positive impact on bar passage rates[169], so we examined whether the same would be true in our own study. And based on prior findings of an association between bar passage and cumulative

---

168. *See supra* Part II.E.

169. *See supra n. 54, e.g.*, Denise Riebe, *A Bar Review for Law Schools: Getting Students on Board to Pass Their Bar Exams*, 45 BRANDEIS L.J. 269, 275-341 (2007) (surveying studies about bar passage and proposing range of bar support initiatives, including required bar prep course); Donald H. Zeigler et. al., *Curriculum Design and Bar Passage: New York Law School's Experience*, 59 J. LEGAL. EDUC. 393, 399-406 (2010) (discussing the creation and implementation of New York Law School's Comprehensive Curriculum Program designed to respond to low bar passage rate, and assessing results); Scott Johns, *Empirical Reflections: A Statistical Evaluation of Bar Exam Program Interventions*, 54 U. LOUISVILLE L. REV. 35, 36-69 (2016) (discussion Bar Passage Program at University of Denver Sturm College of Law and empirical analysis of its impact on bar passage).

law school GPA and, to a lesser extent, LSAT scores, we also considered these.[170]

We did find that students who succeeded in Perspectives by getting an A- or higher had higher bar passage rates than those who did not perform well in Perspectives (Chi-Square: N=178, X^2=37.417, df=1, p<0.0001).[171] Only 50% of students who underperformed in Perspectives (N=70) passed the bar on the first attempt compared to 92% of students who did well in the course (N=108).
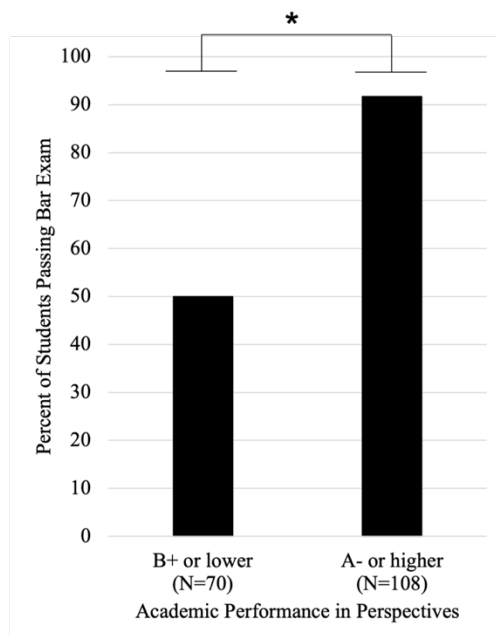

Figure H. Percent of students passing the bar exam as a function of academic performance in Perspectives. Students who did well in Perspectives had higher bar passage rates than those who did not perform well in Perspectives (Chi-Square: N=178, X^2=37.417, df=1, p<0.0001).

Consistent with prior studies, bar passage was also associated with LSAT scores (Pearson Product-Moment Correlation: r=0.31 N=164 p<0.0001) and law school cumulative GPAs (Point Biserial Correlation, r_{pb}=0.621,

---

170. *See supra n. 48, e.g.*, Brian Sites, *Informed Studying Through Predictive Modeling: An MBE Regression Analysis of Bar Preparation and Curriculum Assessments*, 39 QUINNIPIAC L. REV. 461 (2021) (reporting on study showing relationship between bar passage, LSAT, cumulative law school GPA, final semester MBE courses, commercial program diagnostic exams, and completion metrics).

171. *See infra* Figure H.
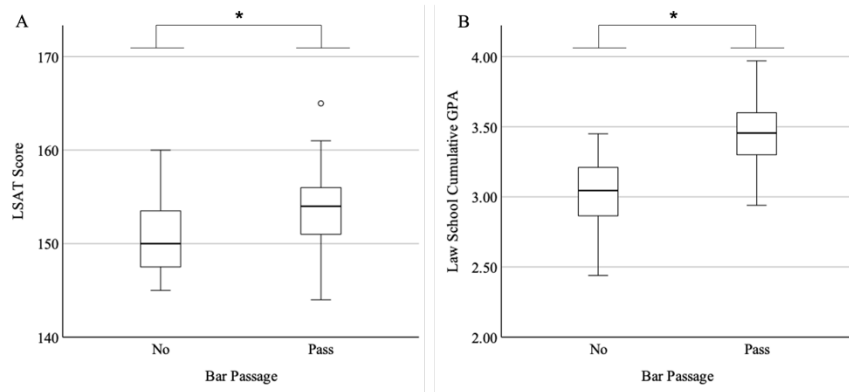
N=178, p<0.0001).[172]

Figure I. LSAT score (A) and law school cumulative GPA (B) as a function of bar passage. Bar passage was associated both with LSAT score Pearson Product-Moment Correlation: r=0.31 N=164 p<0.0001) and law school cumulative GPA (Point Biserial Correlation, r_{pb}=0.621, N=178, p<0.0001).

Given that the LSAT and bar exam are both standardized tests, those students who generally perform well on standardized tests may continue to have strong performance as they continue to take standardized tests. Law school cumulative GPA, on the other hand, is an assessment of students' overall learning during the three years of coursework. Given that the bar exam purports to assess the substantive knowledge and fundamental lawyering skills that students learn in law school, a positive relationship between law school academic success and bar passage is unsurprising.[173]

F.   Additional Observations from the Qualitative Responses

In addition to our empirical findings discussed above, we have additional observations drawn from the qualitative questionnaire responses which provide important insights about students' learning and approach to the Perspectives course and bar preparation. A few themes emerged and for each we have provided illustrative examples from students' questionnaire responses.

---

172.   *See infra* Figure I.
173.   *See supra* Part II.A.

As noted above, the vast majority of the students identified a range of effective learning strategies, passive and active, at the outset of the semester, such that their plans looked like they were off to a solid start. Specifically, 77.8% (147 of 189 students to whom we were able to assign a value for LSPK1) identified one or more active strategies that they planned to use. Of those students who planned to use an active strategy (of the 147 students with LSPK1=Yes) 12 (8.2%) did not follow through until the final and 6 (4.1%) never followed through. For example, they might recognize the need to "commit myself to my strategies" and acknowledge that "I know what works . . . I just need to commit the time", but not do so. Others discussed lack of motivation and/or lack of time to commit to the work. This is consistent with anecdotal reports from academic support and bar prep faculty and staff at various law schools that students' bar prep work drops off as the weeks progress towards the bar exam. Therefore, it would be helpful to proactively focus on that study fatigue with students to better prepare them for sustainable study practices.

We did not ask students about time management skills, although this can be a component of metacognitive regulation.[174] However, many students self-reported that they recognized that time management, given the depth and breadth of the material they would need to learn, was an important feature of their overall bar preparation strategy. For example, they would note their desire to employ "to-do" lists and "disciplined" study schedules to stay on track with their work and avoid "burning out". And yet, students reported that they struggled to maintain it, noting, for example, "I need to be a bit better about sticking to my schedule". Perhaps relatedly, students frequently commented on their desire to be freed from distractions of family and friends, as well as social media and their phones. To respond to these concerns, they discussed the need to "move into a new space away from my family" or "put my phone in a different room" or on "do not disturb." It would be helpful for academic support faculty to remind students about methods for improving their time management and ideas for reducing distractions.

Although we did not seek to elicit information about students' health and wellness, many gratuitously reported to us about the importance of maintaining physical and mental health routines. For example, students noted the importance of getting sufficient sleep to help with "focus" and "better brain functions" and the need to eat well, exercise, and "maintain a healthy environment." This may reflect the increased focus on these issues in law schools. However, we were also concerned about the range

---

174. *See supra* Part III.A.

of mental health issues reported by students, which can impact their performance in school and on the bar exam. Throughout the semester, we noted an increased number of students' responses referencing anxiety, stress, and lack of sleep. Some exhibited helplessness, such as "I'm too tired to keep trying." Using "check-in" mental health questionnaires with students during law school and/or during bar prep may be an effective tool to intervene and support students' mental health.

VI.   RECOMMENDATIONS FOR LEGAL EDUCATION AND FUTURE RESEARCH ON FACTORS THAT INFLUENCE BAR PASSAGE RATES

Our findings bear important lessons for law schools as they seek to enhance students' learning and best position students for passing the bar exam. This is a critical juncture for legal education, given the considerable pressure points that many schools are experiencing with respect to their bar passage rates and the increasing expectations imposed by changing accreditation standards for the program of legal education and learning outcomes.[175] Now is the time for greater recognition that law schools have an ethical obligation to do more to support the academic success of our students, especially those who are paying full tuition and may be more at risk.

The results of our study build on our prior work[176] and offer new insights to aid law schools' efforts to respond to these challenges. Firstly, we now have three studies that establish a relationship between metacognitive skills, particularly metacognitive regulation, and academic performance in 1L and 3L courses, as well as overall law school success.[177] Moreover, our findings establish that students can benefit from instruction and develop metacognitive skills not only within one semester, but throughout law school.[178] And we now have evidence that when students are taught metacognitive skills in their first semester of law school, particularly regulation skills, the learning "sticks" and they will continue to use those skills throughout law school.[179] Accordingly, law schools can and should enhance their students' academic success by

---

175.   *See supra* Part II.C and II.E.

176.   *See* Jennifer A. Gundlach and Jessica R. Santangelo, Understanding the Metacognitive Space and Its Implications for Law Students' Learning, 50 HOFSTRA L. REV. 769 (2022); Jennifer A. Gundlach & Jessica R. Santangelo, *Teaching and Assessing Metacognition in Law School*, 69 J. LEGAL EDUC. 156 (2019).

177.   *See supra* Parts V.C and V.D. *See also* Jennifer A. Gundlach and Jessica R. Santangelo, Understanding the Metacognitive Space and Its Implications for Law Students' Learning, 50 HOFSTRA L. REV. 769, 797-801 (2022); Jennifer A. Gundlach & Jessica R. Santangelo, *Teaching and Assessing Metacognition in Law School*, 69 J. LEGAL EDUC. 156, 179-83 (2019).

178.   *See supra* Part V.A.

179.   *See supra* Part V.B.

incorporating instruction about metacognitive skills into the first-year curriculum and continue instruction and prompts to practice metacognition during all three years of law school.

Fostering metacognitive skills to help students succeed in law school better positions them for success on the bar exam, given the relationship we found between academic success and bar passage.[180] A primary mission of all law schools is to prepare students for practice, which in most cases requires that they first pass the bar exam. The substantive law and skills they learn in law school should ideally be aligned with what is assessed on the bar exam. Therefore, having strong metacognitive skills can help students succeed in law school, which in turn helps them perform better on the bar exam.

Although many students enter law school with a solid base of metacognitive knowledge[181], they can still benefit from further instruction about the specific strategies that will help them succeed with learning the substantive law and legal skills necessary for success. Even more so, they need repeated opportunities to learn and practice metacognitive regulation throughout law school. It is therefore incumbent upon law faculty to incorporate considerably more opportunities for students to receive feedback through formative and summative assessments.[182] We caution that reliance on final grades alone, many of which are curved, is insufficient to provide the necessary feedback for students to engage in metacognitive regulation.

We recommend that law schools offer resources and training for faculty about how to incorporate the teaching of metacognitive skills across the curriculum. Law professors who have not received specialized training as educators can particularly benefit from encouragement to engage in metacognition about their teaching, and their students can benefit from this modeling.[183] Existing materials created by us and others can be drawn from to help faculty create metacognition exercises for students, ideally dovetailing with the use of formative assessments to encourage metacognitive regulation.[184] Given the responses that were

---

180. *See supra* Part V.C and V.D.

181. *See supra* Part VI.C and V.A.1. *See also* Jennifer A. Gundlach and Jessica R. Santangelo, Understanding the Metacognitive Space and Its Implications for Law Students' Learning, 50 HOFSTRA L. REV. 769, 795 (2022).

182. *See also* Jennifer A. Gundlach and Jessica R. Santangelo, Understanding the Metacognitive Space and Its Implications for Law Students' Learning, 50 HOFSTRA L. REV. 769, 808, 810 (2022).

183. *See generally* Macenzie Stephens and Jessica Santangelo, *A Continuum to Promote College Instructor Metacognition about* Teaching, 70 College Teaching 46–56 (2021). *See also* Patti Alleva & Jennifer A. Gundlach, *Learning Intentionally and the Metacognitive Task*, 65 J. LEGAL EDUC. 710, 737-39 (2015) (discussing the practice of metacognitive skills with teaching).

184. The authors have on file various materials for teachers to use for instruction about metacognitive skills. *See also* Patti Alleva & Jennifer A. Gundlach, *Learning Intentionally and the*

volunteered by various students about the impact of health and wellbeing stressors[185] on their learning during Perspectives, law schools should also remember the importance of incorporating wellness programming.[186]

Multiple factors are at play in learning, and therefore, law schools need to embrace a multi-strategy approach to facilitate student learning. Our findings establish that metacognitive skills are an important learning tool. Therefore, law schools should ensure that metacognitive skills are explicitly included in instruction provided to students. Given the ever-increasing costs of legal education, law schools owe it to their students to provide them with the broadest array of resources to position them for success not just during school, but also for entry into the profession. Our ethical obligation requires nothing less.

Metacognitive Task, 65 J. LEGAL EDUC. 710, 726-33(2015) (discussing various teaching strategies for incorporating metacognitive instruction into a first-year Civil Procedure course).

185. *See supra* at Part V.F.

186.   In connection with Standard 303(b)(3), which requires law schools to include "substantial opportunities" for "professional identity development", the ABA recently added language to Interpretation 303-5 to explicitly include "well-being practices" within the development of professional identity, and notes that "[b]ecause developing a professional identity requires reflection and growth over time, students should have frequent opportunities for such development during each year of law school and in a variety of courses and co-curricular and professional development activities." *See* ABA Section of Legal Education and Admissions to the Bar, ABA STANDARDS AND RULES OF PROCEDURE FOR APPROVAL OF LAW SCHOOLS 2022-03*, Standard 303 and Interpretation 303-5* (American Bar Association, 2022).