

Building on CREAC: Reimagining the Research Log as a Tool for Legal Analysis

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I. INTRODUCTION

Legal research has long been a shadow skill within the legal curriculum. Even as other skills began to take their prominence in law schools across the country in the wake of MacCrate and other reports that advocated the importance of practical lawyering skills,¹ research is often treated as a topic less vital to students' professional success than most others. This is due, at least in part, to false narratives that exist concerning how interesting, hard, and important legal research is—or, more critically, is not.

These false narratives exist due to any number of reasons, but their prevalence is detrimental to law students given the significant role legal research instruction should play in their law school careers and will play in their work as legal professionals. Unfortunately, these misconceptions surrounding legal research are expounded not only by word of mouth, but by the structure and assignments given in many first-year legal skills programs across the country, as well as the cognitive limits that students have. These false perceptions can have a negative impact on students' attention to the material, which ultimately leads to a lack of retention of these skills. With small changes to the first-year skills curriculum, instructors can help students expand their cognitive capacities, strengthen student learning, and overcome these false narratives.

Part II of this Article will explore three of the primary false narratives that affect students' perceptions of legal research instruction and explains why these false narratives are detrimental to students who accept them as true. Part III will look at how cognitive load, and the instructional choices instructors make to help our students overcome their limited working memories, reinforces these false narratives. Part III will also describe how professors can use scaffolding techniques to help overcome the challenges of students' limited cognitive capacity. Part IV will introduce a newly designed research log using the CREAC

1. See generally Alyson M. Drake, *The Need for Experiential Legal Research Education*, 108 L. LIBR. J. 511, 512 (2016) (explaining that new attorneys entering into the legal profession lack the practical skills necessary to act like practicing attorneys).

structure commonly used in legal writing.² Part IV will also demonstrate how legal research professors can utilize the CREAC log as a scaffolding tool to help overcome these three false narratives and ensure students gain the analytical research skills they need.

II. FALSE NARRATIVES ABOUT LEGAL RESEARCH

Some law students begin their legal education with false perceptions about legal research. These may be due to several factors—word of mouth, the legal research class being pass/fail when all other courses are graded, having performed research previously in their past education, and more. Three common false narratives surrounding legal research are that legal research is easy, boring, and unimportant. Ultimately, these narratives can cause students to give less time and attention to the material and skills they are learning in legal research class; those hiring new attorneys report that this lack of attention contributes to the lack of retention of legal research skills.³ The three fictionalized examples below, which are based on amalgamations of students over ten years of teaching, illustrate how these false narratives are formed and the impact of holding these false narratives.

A. “Legal Research Is Easy.”

Antoine is entering the first year of law school after obtaining a Master’s degree in political science from a prestigious university. He is looking forward to beginning his new degree program and suspects that his previous experience as a graduate student will give him a leg up over his law school classmates. Antoine believes legal research is easy and probably does not necessitate multiple class sessions.

Antoine’s misconceptions arise from the fact that he did a great deal of social sciences research in meeting the requirements for his undergraduate and graduate degrees. While he gained experience using a

2. CREAC is a paradigm used to help students with legal analysis, often used in legal writing to help students learn to structure their legal memos and briefs. Diane B. Kraft, *CREAC in the Real World*, 63 CLEV. ST. L. REV. 567, 567 (2015).

3. See ACAD. L. LIBRS. SPECIAL INT. SECTION TASK FORCE, A STUDY OF ATTORNEYS’ LEGAL RESEARCH PRACTICES AND OPINIONS OF NEW ASSOCIATES’ RESEARCH SKILLS (2013), https://www.aallnet.org/allsis/wp-content/uploads/sites/4/2018/01/final_report_07102013.pdf.

few select specialized databases, such as JSTOR and Ebsco, as he completed his Master's degree, he does not have any experience using the major legal databases. He is unaware that legal research has idiosyncrasies and challenges that differ from those he encountered while conducting research for his other degrees. Like many law students, Antoine likely classifies research as solely a rote, finding task that uses technology to locate sources that might be helpful for his research issues. He believes that once he can figure out how to navigate through the pertinent databases—surely a simple task given his prior experience using research databases—he will have learned everything he needs to know about legal research.

Students like Antoine do not understand that the challenge inherent to legal research is not in the gathering of sources, but in the legal analysis researchers should do during the research process. There are a number of research tasks unique to the law that are inherently analytical, including, but not limited to, synthesizing legal rules from multiple sources, analogizing the rules found to the client fact patterns to determine a case's usefulness, and unpacking the court's reasoning to determine how those rules might be applied to the client's situation.⁴ It is doing this analytical work while effectively navigating to relevant sources that makes legal research the challenging task it is, even for those students with prior experience doing comprehensive, in-depth research projects. Legal research instruction is so much more than just learning to navigate a pair of databases. These students need a thoughtfully designed legal research curriculum to help them understand the role analysis plays in research. Making the role of analysis visible to our students is critical to garnering students' attention in the legal research classroom, which will play a key role in whether they ultimately retain the skills they are learning.⁵

Legal research professors must have explicit conversations with their students about the role analysis plays in legal research.⁶

4. Alyson Drake, *Research as Analysis in the Modern Legal Academy*, LEGAL RSCH. PEDAGOGY (Mar. 2018), <https://www.legalresearchpedagogy.com/2018/03/research-as-analysis-in-modern-legal.html>.

5. See generally JAMES LANG, DISTRACTED: WHY STUDENTS CAN'T FOCUS AND WHAT YOU CAN DO ABOUT IT (2020).

6. Alyson Drake, *Using the "A" Word in Legal Research Instruction*, DIPLOMATIC DIALOGUES (Feb. 20, 2018), <https://fcilsis.wordpress.com/2018/02/20/using-the-a-word-in-legal-research-instruction/>.

Otherwise, many students erroneously believe that analysis belongs solely in the writing stage of the legal research and writing process. Correcting this misconception early in students' law school careers is especially important given that this misconception is often reinforced by both the structure of the first-year skills curriculum and the assignments given in those classes.⁷ Unfortunately, this false impression is sometimes reinforced by doctrinal and other skills professors. These professors likely never had the analytical side of research emphasized during their own legal education and see legal research as a skill set devoid of analysis. For students like Antoine, it is important that instructors use instructional strategies such as scaffolding to emphasize the analytical aspects of research in the overcrowded first year skills curriculum.⁸

B. "Legal Research Is Boring."

Maria is a first-year law student who came to law school because she believes her calling is to help the less fortunate—those without a voice—stand up for their rights. While Maria is smart and excited about law school, she is unenthusiastic when she sees that she has multiple class periods devoted to learning legal research as part of her first-year skills course.

She enters the legal research classroom with the impression that legal research is a less-than-thrilling activity that she must suffer through to reach the more exciting aspects of the legal profession—like standing up and passionately advocating for those who need help in court. While a strong student, Maria believes legal research is just “finding stuff” and assumes that she will have a paralegal whose main function will be doing her research for her. She wishes that she could spend more time in the first semester honing her oral advocacy skills instead of learning to look up cases and statutes on her computer—isn't that what Google is for?

7. See *infra* Part II.B.

8. Scaffolding is a teaching method in which teachers offer a particular support or framework to aid students as they learn or master a new skill. See *Content Scaffolding*, IRIS CTR. <https://iris.peabody.vanderbilt.edu/module/sca/cre-source/q2/p03/#content> (last visited Dec. 30, 2021). For more on scaffolding, see *infra* notes 77–101 & accompanying text.

Maria is not alone. Many first-year law students enter legal research classrooms, whether a stand-alone research course or a component of a larger legal research and writing class, wondering why so much time is spent on research, a skill they may consider boring. Perceived boredom can be severely detrimental to student learning.⁹ As James Lang argues in *Distracted: Why Students Can't Focus and What to Do About It*, students will not retain anything that they're not paying attention to.¹⁰ However, research becomes less boring and we are better able to maintain student attention when the professor can tie the learning back to the students' own personal reasons for being in law school.¹¹ As Kevin Michael Klipfel and Dani Brecher Cook note in their 2017 book, *Learner-Centered Pedagogy: Principles and Practice*, "significant learning takes place for the learner if, and only if, the learner attaches some personal meaning to the subject of inquiry and wants to learn about the subject matter. Real, genuine curiosity is central to this kind of learning."¹²

The additional problem with this false narrative is it results in students entering our classrooms with primarily extrinsic motivation. Extrinsic motivation occurs when students are motivated by an outside reward or punishment.¹³ Students who grasp on to this narrative may be motivated solely by the grades they will receive on research assignments or by the participation points they might lose if they do not show up to class ready to engage with the material.¹⁴ Intrinsic motivation, on the other hand, occurs when students are interested in the material "for its own sake."¹⁵

9. See generally Guanyu Cui, Meilin Yao, & Xia Zhang, *The Dampening Effects of Perceived Teacher Enthusiasm on Class-Related Boredom: The Mediating Role of Perceived Autonomy Support and Task Value*, 8 FRONTIERS PSYCH. 1, 2 (2017).

10. Lang explains that attention is necessary for all three stages of the learning process—attention, encoding, and retrieval from long-term memory. Lang, *supra* note 5, at 46 ("We don't learn anything that doesn't hold our attention for at least a little bit.").

11. See KEVIN MICHAEL KLIPFEL & DANI BRECHER COOK, *LEARNER-CENTERED PEDAGOGY: PRINCIPLES AND PRACTICES* 7 (2017).

12. *Id.*

13. JULIE DIRKSEN, *DESIGN FOR HOW PEOPLE LEARN* 30 (2d ed. 2016).

14. See generally *id.*

15. *Id.*

As one author rightly noted, “intrinsic motivation kicks extrinsic motivation’s ass.”¹⁶ When learners are extrinsically motivated, teachers must make much greater strides to engage their learners, seeking ways to tie content to students’ interests and find anything learners might find intrinsically motivating.¹⁷ Course design that transfers extrinsic motivation into intrinsic motivation will increase student effort.¹⁸ It is important for students like Maria that educators break the false narrative that legal research is boring to ensure that learning is deep and sustained.¹⁹ Otherwise students like Maria usually perceive research as merely a source collecting task—which it may have been when they wrote research reports in undergraduate studies or high school—and will never engage fully with the materials.²⁰ Ultimately, these students will fail to retain the research skills they need in practice.²¹

One way to battle this lack of intrinsic motivation and to tie research to students’ personal reasons for attending law school is to emphasize research as analysis—the type of deep thinking that many students imagine themselves doing in their lives as attorneys.²² Framing research as a problem-solving endeavor can engage students who may need help finding intrinsic motivation for their research courses.²³ These students engage when they can understand how the skills they are learning tie to the practical work of lawyering. Incorporating the practice of analytical research skills is necessary for these students to buy in to the importance of legal research instruction. Because analysis while researching is a challenging endeavor for most students, finding a way to help students learn effectively is a difficult task. Again, scaffolding can be used to help these students.²⁴

16. *Id.*

17. See Haleh Yazdi, *How Educators Can Foster Student Motivation*, DIGIT. PROMISE (Aug. 18, 2016), <https://digitalpromise.org/2016/08/18/how-educators-can-foster-student-motivation/>.

18. *Id.*

19. Drake, *supra* note 1 at 518.

20. Yazdi, *supra* note 17.

21. See generally Drake, *supra* note 1.

22. *Id.* at 520–22.

23. *Id.* at 521.

24. See *infra* Part IV.

C. “Legal Research is Unimportant.”

Andy enters law school as a third-generation law student. His mother is an intellectual property law professor at another law school, but with ambitions to be a litigator, he chose this law school because of its strong advocacy program. When going over his class schedule with his mother, he got the strong impression that his courses in Civil Procedure, Torts, and Contracts are the most important courses, on which he should focus his time and energy. Andy also notices that his Legal Research and Writing class is only three credit hours while all of his other classes are four credit hours.

In the first day of his first-year legal skills class, when reviewing the syllabus, he notices that research assignments are only worth fifteen percent of his grade, despite the class being called Legal Research and Writing. Writing and oral advocacy make up a significantly larger percentage of his grade. A few weeks later, when he has his first class devoted to legal research, his Legal Research and Writing professor introduces her co-teacher, who will be instructing the legal research portion of the class as a member of the library staff—even though her co-teacher is a tenure-track library faculty member. Within just a few weeks of starting law school, Andy has the impression that the “least important” component of his “least important” class is taught by a librarian, not a “real” faculty member. He concludes that he does not need to worry as much about research because it will not count that much in the long run.

Students like Andy will also benefit from a discussion of research as analysis, even though these students might argue that they are learning analysis in their doctrinal classes.²⁵ However, when students are analogizing or synthesizing in their doctrinal and other skills courses, they are often doing it with a body of sources already on hand.²⁶ In these situations, they are not grappling with the hard work of framing their research issues and analyzing their sources while simultaneously trying to gather sources.²⁷ Many students struggle just to navigate legal research databases successfully without adding in the critical thinking necessary for efficient and effective legal research.²⁸

25. Drake, *supra* note 1.

26. *Id.* at 525.

27. *Id.* at 519.

28. *Id.* at 514.

Giving students like Andy the opportunity to use their analytical skills while conducting legal research during the first year is imperative for students to understand the real work of legal research and to prepare for the work they will spend a significant amount of time doing in practice.²⁹

III. HOW COGNITIVE (OVER)LOAD REINFORCES THESE FALSE LEGAL RESEARCH NARRATIVES

An overcrowded first-year skills curriculum does little to change the false legal research narratives students bring with them to law school. As students begin this new educational experience, it becomes an easy choice for students to de-prioritize legal research as they attempt to handle the tremendous cognitive load the first year of law school presents to them.

A. What is Cognitive Load?

Cognitive psychologists use the term cognitive load to describe the mental challenge working memory imposes on a person's learning.³⁰ As cognitive psychologist Frederick Reif described it, "[t]he cognitive load involved in a task is the cognitive effort (or amount of information processing) required by a person to perform this task."³¹ Developed by John Sweller, cognitive load theory, in its simplest form, explains that working memory has a limited capacity and that instructional methods should avoid adding to that burden by including activities that do not directly contribute to student learning.³² In other words, cognitive load theorists argue that learning complex, new information

29. ACAD. L. LIBRS. SPECIAL INT. SECTION TASK FORCE, *supra* note 3.

30. Fred Paas, Alexander Renkl, & John Sweller, *Cognitive Load Theory: Instructional Implications of the Interaction Between Information Structures and Cognitive Architecture*, 32 INSTRUCTIONAL SCI. 1, 2 (2004); see also Terri L. Enns & Monte Smith, *Take a (Cognitive) Load Off: Creating Space to Allow First-Year Legal Writing Students to Focus on Analytical and Writing Processes*, 20 LEGAL WRITING: J. LEGAL WRITING INST. 109, 110 (2015).

31. FREDERICK REIF, APPLYING COGNITIVE SCIENCE TO EDUCATION: THINKING AND LEARNING IN SCIENTIFIC AND OTHER COMPLEX DOMAINS 361 (2010).

32. *Cognitive Load Theory: Helping People Learn Effectively*, MINDTOOLS, <https://mindtools.com/pages/article/cognitive-load-theory.htm> (last visited Dec. 30, 2021).

exhausts students' finite working memory, and posits that there is a limit to how much information students are able to absorb at one time.³³

To understand cognitive load, one must first have a baseline understanding of how memory works. Cognitive load is based on a model of human information processing that divides memory into three types.³⁴ The first type is sensory memory.³⁵ As humans move through the world, they get sensory impressions of everything surrounding them. Sensory memory processes those bits of sensory information that are important enough—usually things that surprise us or that we are actively paying attention to—to pass into working memory.³⁶

Once sensory memory passes into working memory, the information is either processed or discarded.³⁷ Working memory is the “limited mental ‘space’ in which humans think;”³⁸ we are only conscious of information processing during this stage of memory.³⁹ Humans are only able to hold on to between five and nine “chunks” of information at any given time.⁴⁰ Psychologist George A. Miller introduced the term chunk in his research on short-term memory, describing chunks as groups of items collected together and treated by the brain as a single unit.⁴¹ What constitutes a chunk of information will differ based on the strength of the knowledge structures in someone's long-

33. Fred Paas, Alexander Renkl, & John Sweller, *Cognitive Load Theory and Instructional Design: Recent Developments*, 38 EDUC. PSYCH. 1, 2 (2003); John Sweller, *Cognitive Load Theory, Learning Difficulty, and Instructional Design*, in 4 LEARNING & INSTRUCTION 295, 299 (1994); see also Enns & Smith, *supra* note 30, at 111.

34. *Cognitive Load Theory: Helping People Learn Effectively*, *supra* note 32.

35. *Id.*

36. *Id.* Working memory is often referred to as “short-term” memory. Richard E. Clark, Paul A. Kirschner, & John Sweller, *Putting Students on the Path to Learning: The Case for Fully Guided Instruction*, AM. EDUCATOR, Spring 2012, at 8.

37. See Dominic Shibli & Rachel West, *Cognitive Load Theory and Its Application in the Classroom*, IMPACT (Feb. 2018), <http://impact.chartered.college/article/shibli-cognitive-load-theory> (describing working memory as “short term and finite”).

38. Clark, Kirschner, & Sweller, *supra* note 36, at 8.

39. *Id.* at 9.

40. *Cognitive Load Theory: Helping People Learn Effectively*, *supra* note 32.

41. Inbar Levy, *Simplifying Legal Decisions: Factor Overload in Civil Procedure Rules*, 41 MELB. U. L. REV. 727, 756 (2017).

term memory.⁴² For an expert, who has strong knowledge structures in their long-term memory from years of studying a topic, a single chunk might be comprised of multiple complex concepts. In contrast, for a novice learner without a knowledge structure into which she can fit the new concepts she's learning, each new concept may be its own chunk.⁴³

Furthermore, working memory is limited in its duration when processing new information; most information stored in working memory vanishes within thirty seconds if not rehearsed.⁴⁴ Cognitive load theory, moreover, is concerned primarily with the limits of working memory. While a person is learning, information must be held in one's working memory.⁴⁵ As such, when too much information is presented, the learner's cognitive capacity is overloaded and much of the new information is lost.⁴⁶

Finally, working memory that is not discarded is processed and categorized in the brain into long-term memory.⁴⁷ Long-term memory is "stored in knowledge structures called schemas," which organize information according to how people use it.⁴⁸ Long-term memory is considered to be infinite, but the more practiced a person is at using any given scheme, the more effortless that behavior becomes.⁴⁹ This process is called automation.⁵⁰ The aim of learning is to move new information to long-term memory so that students can then draw on this

42. See Robert Frost, *What Makes Chunking Such An Effective Way to Learn?*, FORBES, (Nov. 8, 2017, 3:03 PM), <https://www.forbes.com/sites/quora/2017/11/08/what-makes-chunking-such-an-effective-way-to-learn/#4c12488660a9>.

43. See Amanda L. Gilchrist, *How Should We Measure Chunks? A Continuing Issue in Chunking Research and a Way Forward*, 6 FRONTIERS PSYCH. 1456, 1456 (2015).

44. Clark, Kirschner, & Sweller, *supra* note 36, at 9.

45. *Cognitive Load Theory: Helping People Learn Effectively*, *supra* note 32.

46. *Id.*

47. *Id.*

48. *Id.*

49. See Clark, Kirschner, & Sweller, *supra* note 36, at 9 ("[E]xpert problem solvers derive their skill by drawing on the extensive experience stored in their long-term memory in the form of concepts . . . known as mental schemas. They retrieve memories of past procedures and solutions, and then quickly select and apply the best ones for solving problems.").

50. *Cognitive Load Theory: Helping People Learn Effectively*, *supra* note 32.

knowledge when they are exposed to new material.⁵¹ As cognitive theorist and education scholar Richard E. Clark and his colleagues put it, “[e]verything we see, hear, and think about is dependent on and influenced by our long-term memory.”⁵²

Cognitive theorists break cognitive load into three distinct types. The first, intrinsic cognitive load, describes the difficulty inherent to the material students are learning.⁵³ In other words, intrinsic cognitive load is the challenge specific to the information a student is currently trying to learn.⁵⁴ The second type of cognitive load is called germane cognitive load.⁵⁵ It is a subset of intrinsic cognitive load and refers to the amount of intrinsic load the working memory is able to effectively use to develop long-term memory.⁵⁶ It “is produced by the construction of [memory] schema” and “assists in learning new skills or information.”⁵⁷

The third and final type of cognitive load is extraneous cognitive load, which occurs when information “unnecessary to the immediate learning objective” is introduced to students and interferes with student learning.⁵⁸ Extraneous cognitive load is anything that requires students’ effort and attention without adding to their knowledge base.⁵⁹ Extraneous cognitive load is usually a result of ineffective instructional design and can, therefore, be reduced with good course planning.⁶⁰ Examples of course design that can lead to extraneous cognitive load include unclear examples, poorly designed course materials, and

51. Shibli & West, *supra* note 37.

52. Clark, Kirschner, & Sweller, *supra* note 36, at 9.

53. John Sweller, *Cognitive Load Theory: Recent Theoretical Advances*, in COGNITIVE LOAD THEORY 29, 40–41 (Jan L. Plass, Roxana Moreno, & Roland Brünken eds., 2010).

54. DIRKSEN, *supra* note 13, at 167.

55. Sweller, *supra* note 53, at 43–44.

56. *Id.*

57. *Cognitive Load Theory: How the Cognitive Load of a Learning Task Affects a Person’s Ability to Memorize It*, PSYCH. WORLD, <https://www.psychologist-world.com/memory/cognitive-load-theory> (last visited Dec. 30, 2021).

58. Enns & Smith, *supra* note 30, at 111.

59. *See, e.g.*, DIRKSEN, *supra* note 13, at 167.

60. *See* Roxana Moreno & Babette Park, *Cognitive Load Theory: Historical Development and Relation to Other Theories*, in COGNITIVE LOAD THEORY 9 (Jan L. Plass, Roxana Moreno, & Roland Brünken eds., 2010).

technology that is hard to navigate.⁶¹ Ultimately, an effective instructional designer will aim to be aware of a learning task's intrinsic cognitive load and will reduce or eliminate the extraneous cognitive load.⁶²

There are several ways that professors can help students manage their cognitive load. The first is to reduce those ineffective instructional design choices that lead to extraneous cognitive load.⁶³ The other, which this Article concerns, is to design their course—wherever possible—relying on preexisting schemas in students' long-term memory.⁶⁴ These preexisting schema are any information that has moved into one's long-term memory, including any concepts or skills gained in students' life experience or earlier in their educational careers.⁶⁵ When students are learning new things, they retrieve schema from their long-term memory and move them into their working memory.⁶⁶ Luckily, working memory treats already-established schema as a single chunk of information, rather than the separate pieces that went into building that knowledge structure.⁶⁷

In fact, those schema that have been retrieved and used repeatedly barely register in the working memory as a chunk of information because schema are so deeply ingrained in the long-term memory.⁶⁸ As a result, learning activities that rely upon a learner's existing knowledge structures actually expand the capacity of one's working memory, and the cognitive load is reduced.⁶⁹ That is, “we can reduce the demands on our processing power—or the cognitive load of a problem—by being able to draw upon concepts that we have stored in our long-term memory.”⁷⁰

61. See, e.g., DIRKSEN, *supra* note 13, at 167. Poorly designed course materials include things like PowerPoints with too much text and handouts where images are too far-removed from textual explanations. *Id.*

62. Paas, Renkl, & Sweller, *supra* note 33, at 2.

63. *Id.*

64. Greg Ashman, *Why Students Make Silly Mistakes in Class (And What Can Be Done)*, CONVERSATION (Oct. 15, 2015, 3:17 PM) <https://theconversation.com/why-students-make-silly-mistakes-in-class-and-what-can-be-done-48826>.

65. *Cognitive Load Theory: Helping People Learn Effectively*, *supra* note 32.

66. *Id.*

67. *Id.*

68. *Id.*

69. Shibli & West, *supra* note 37.

70. Ashman, *supra* note 64.

B. Research Instruction and Cognitive Load in First-Year Legal Skills Instruction

The limits of first-year law students' working memories are constantly tested. Aside from the substantive content learned in classes, first-year law students are adjusting to a new place to live, learning new study strategies, forming new friendships, and managing financial stressors. Many first-generation and underrepresented minority law students likely also use cognitive space to question whether they belong in law school spaces that can feel like they were built for different groups.⁷¹ Accordingly, first-year students are constantly processing information from working memory to long-term memory. These students are also working to build knowledge structures in their doctrinal classes; because most of the material they encounter is entirely new to them, they lack sophisticated knowledge structures in their long-term memory and their working memories are constantly at capacity trying to hold on to and process the new chunks of information continually introduced.

In their first-year legal skills courses, students are trying to reconcile the new substantive law they are learning with practical skills and analytical skills that also require a great deal of working memory. As Professors Terri Enns and Monte Smith note, "the complicated process of analyzing legal problems, researching their possible solutions, and communicating that analysis in writing can overwhelm students' working memories, leaving no space for the conscious acquisition of more broadly-applicable writing doctrine."⁷²

Students struggle because they try to internalize large volumes of new information and perform new skills "while being expected to perform as if they already have internalized them."⁷³ This can be incredibly frustrating to students. Effective course design makes students

71. Toni Schmader & Michael Johns, *Converging Evidence That Stereotype Threat Reduces Working Memory Capacity*, 85 J. PERSONALITY & SOC. PSYCH. 440, 441 (2003) ("[F]indings suggest that activating negative stereotypes about a social identity that one possesses can create an extra situational burden that interferes with the ability to perform as well at a mental task as might otherwise be possible.").

72. Enns & Smith, *supra* note 30, at 111.

73. Paula Lustbader, *Construction Sites, Building Types, and Bridging Gaps: A Cognitive Theory of the Learning Progression of Law Students*, 33 WILLAMETTE L. REV. 315, 338 (1997).

feel both smart and capable.⁷⁴ While it is important to challenge learners, professors should take steps to mitigate those experiences that cause our students to feel embarrassed about concepts and skills they are in the process of gaining.⁷⁵

The overcrowding of the first-year curriculum, while common and perhaps difficult to correct, has a similar effect on the acquisition of analytical research skills. While students in first-year legal skills courses are provided with a structure for tying together their analysis and writing,⁷⁶ they do not usually receive any structure for how to conduct analytical research. Because this overloading of the first-year skills curriculum causes so many challenges to learning, often professors make a choice to emphasize other skills—writing, analysis, oral advocacy, or most likely some combination of the three—above research. Courses are designed to emphasize these other important skills to the detriment of research skills—especially analytical research skills.

As such, in many first-year skills courses, the emphasis centers on the bibliographical retrieval skills, minimizing the analysis. Often professors ground their research assignments in a fact pattern to give the impression that students are engaging in experiential problem-solving. Unfortunately, due to class time constraints and a huge variety of sources to cover, the problems must be simple ones if students are going to complete their in-class exercises during class time.

Likewise, in many cases, first-year open memo problems are purposely kept simple to allow students to focus on their writing and organizational skills. Problems may be based solely on common law, depriving students of the opportunity to utilize their statutory research skills. Problems may also rely upon a very limited body of cases. In others, the research problems may be challenging, but students have received little guidance in how to engage in research analysis or have had little time to practice conducting research analysis *while* doing bibliographic research. This results in students engaging in only a surface-level analysis, skimming to see if cases might seem helpful. This

74. DIRKSEN, *supra* note 13, at 35.

75. *Id.*

76. Most legal writing professors use CREAC, IRAC, or some other structure as a way of helping novice legal writers engage in legal analysis. *See infra* Part IV.B.2.

generally results in students having to reread their carefully cultivated pile of cases when it is time to write and reinforces students' misconceptions that analysis should be centered primarily in the writing process.

Students may be able to tie certain bibliographic research skills back to experiences they had researching in their previous collegiate level studies, but engaging in legal analysis while researching is new to most law students. Unfortunately, while students in first-year legal skills courses are provided with a structure for tying together their analysis and writing, they do not usually receive any structure for how to conduct analytical research. Additionally, while most students immediately see the importance of legal writing or oral advocacy, there is an additional barrier to overcome with legal research: students' lack of intrinsic motivation due to the false narratives surrounding legal research instruction. This lack of intrinsic motivation, when tied to the limited cognitive capacity of these students, means that students struggle immensely when the time comes to tie their bibliographic and analytical research skills together. Providing students with a structure for practicing these two skills simultaneously will help them tremendously—particularly if first-year skills professors can reduce the burden on students' cognitive load by tying that structure to a structure students have already been introduced to while learning how to communicate legal analysis in writing.

IV. HOW SCAFFOLDING CAN HELP OVERCOME COGNITIVE (OVER)LOAD

A. What is Scaffolding?

When working to solve a problem, one must rely on their working memory.⁷⁷ Researcher Richard Clark and his team aptly describe the overcrowded, stream-of-conscious thought process that students experience when learning new concepts and skills:

If the learner has no relevant concepts or procedures in long-term memory, the only thing to do is blindly search for possible solution steps that bridge the gap between the problem and its solution. This process places a great

77. Clark, Kirschner, & Sweller, *supra* note 36, at 10.

burden on working-memory capacity because the problem solver has to continually hold and process the current problem state in working memory (e.g., Where am I right now in the problem-solving process? How far have I come toward finding a solution?) along with the goal state (e.g., Where do I have to go? What is the solution?), the relations between the goal state and the problem state (e.g., Is this a good step toward solving the problem? Has what I've done helped me get nearer to where I need to go?), the solution steps that could further reduce the differences between two states (e.g., What should the next step be? Will that step bring me closer to the solution? Is there another solution strategy I can use that might be better?), and any subgoals along the way.⁷⁸

This is a tremendously difficult task for a novice learner. For this reason, professors need to adopt pedagogical strategies, such as scaffolding, that will ease students' cognitive burden.

Scaffolding is one method for helping reduce intrinsic cognitive load. In instructional settings, scaffolding is defined as supports an instructor provides to boost student learning and to help students develop and master new content and skills.⁷⁹ As one author described it, “[g]ood scaffolding acts like training wheels; it allows learners to accomplish the difficult task in a safely supported way. Ideally, it doesn't reduce learners to bystanders but gives them the support they need to complete tasks they otherwise wouldn't be able to do.”⁸⁰ That support should be gradually reduced as learners become more competent to handle learning on their own.⁸¹

One reason scaffolding is so effective is the consistency that comes from using the same scaffolding structure over and over again.⁸² Once students learn the scaffolding structure the first time, they are not starting from scratch the next time they encounter it.⁸³ Instead, they

78. *Id.* at 10.

79. *Content Scaffolding*, *supra* note 8.

80. DIRKSEN, *supra* note 13, at 43.

81. *Id.*

82. *See id.* at 142 (describing how consistency is helpful due to the reduction in cognitive load it can provide during the learning process).

83. *See id.*

can just pull the structure from their long-term memory as a single chunk.⁸⁴ When an element of learning is consistent, then students do not have to allocate mental resources to relearning it.⁸⁵

Second, scaffolding gives students a context and a method to process what they are learning.⁸⁶ It allows professors to build on students' preexisting knowledge base to teach fundamental concepts in a helpful progression.⁸⁷ It also helps students to increase and strengthen connections between the pieces of information they are learning.⁸⁸ The difficulty of a learning experience is based on both the complexity of the information being learned and the prior knowledge of the learner, so if professors can tie new learning to prior learning, it will help mitigate some of the difficulty inherent to learning new content.⁸⁹

Finally, the structure that scaffolding provides students helps them organize their learning.⁹⁰ As Clark and his collaborators presented in one of their hallmark articles on cognitive load theory:

Decades of research clearly demonstrate that *for novices* (comprising virtually all students), direct, explicit instruction is more effective and more efficient than partial guidance. So, when teaching new content and skills to novices, teachers are more effective when they provide explicit guidance accompanied by practice and feedback, not when they require students to discover many aspects of what they must learn.⁹¹

Scaffolding provides the guidance students need in processing new information.⁹² By putting the scaffolding in place, the instructor helps students make connections between knowledge the students have

84. *See id.*

85. DIRKSEN, *supra* note 13, at 142.

86. *See* Lustbader, *supra* note 73, at 320 (discussing the importance of context and method in the learning process).

87. *See id.* at 321.

88. *See id.* at 328.

89. DIRKSEN, *supra* note 13, at 39.

90. *See id.* at 48.

91. Clark, Kirschner, & Sweller, *supra* note 36, at 6.

92. *See* DIRKSEN, *supra* note 13, at 48.

already acquired and new information the students are learning.⁹³ Scaffolding helps to break down the subject matter being taught and provides an organization for the course content's delivery; students learn the pieces before they are required to understand the whole.⁹⁴

There are a number of different scaffolding techniques that professors can implement into their classroom, including content scaffolding, task scaffolding, and material scaffolding.⁹⁵ In content scaffolding, the professor selects content that is not too unfamiliar to the student, so students can focus on the skill being taught and not get lost in new content.⁹⁶ For example, research instructors can apply a concept taught in first-year doctrinal law courses, like intentional infliction of emotional distress, and ask students to apply the content to their research plan, building on previously learned material.⁹⁷ Because they know something about intentional infliction of emotional distress, the cognitive burden in completing the assignment is lessened.

In task scaffolding, the professor models the steps that must be taken to complete a task while verbalizing her thought processes to the student.⁹⁸ For instance, in a research workshop, an instructor can demonstrate how to conduct an index search for a state statute via Westlaw and/or Lexis, while verbalizing each step of the process.⁹⁹ Finally, material scaffolding utilizes written prompts to help students perform a task or strategy. One example of material scaffolding could be a guided outline or example that lists the necessary steps to complete a task.¹⁰⁰

When learners have already mastered some of the knowledge they need to engage in problem solving or analysis, it can help reduce

93. Charlotte D. Schneider, *Using Scaffolding Techniques for Legal Research Instruction*, 2 LEGAL INFO. REV. 61, 64 (2016–2017).

94. See Shibli & West, *supra* note 37 (“Intrinsic cognitive load can be reduced by breaking down the subject content, sequencing the delivery so that sub-tasks are taught individually before being explained together as a whole. The idea is not to overwhelm a student too early on in the introduction of new work.”).

95. See *Content Scaffolding*, *supra* note 8.

96. *Id.*

97. See *id.*

98. *Task Scaffolding*, IRIS CTR., <https://iris.peabody.vanderbilt.edu/module/sca/cresource/q2/p04/#content> (last visited Dec. 30, 2021).

99. See *id.*

100. *Material Scaffolding*, IRIS CTR., <https://iris.peabody.vanderbilt.edu/module/sca/cresource/q2/p05/#content> (last visited Dec. 30, 2021).

their intrinsic cognitive load.¹⁰¹ Because bibliographic legal research is already challenging enough for a novice's limited cognitive capacity—with students trying to learn multiple strategies, tools, and databases to find different types of legal sources—legal research professors must design their introduction of research analysis carefully. Using a combination of content and material scaffolding techniques to tie learning analytical legal research to something students are already familiar with, such as the CREAC structure used to organize legal writing, will help reduce students' cognitive load and make it easier for them to learn.

B. Research Logs

Research logs are a research tool familiar to many legal research instructors that can be easily adapted into a scaffolding aid that can help law students in developing their legal research analysis skills. By modifying research logs to follow an IRAC or CREAC structure, legal research instructors can tap into their students' pre-existing schema for legal analysis and help students understand the central role that analysis plays in legal research.

1. The Traditional Research Log

Research logs are not a new curricular tool for legal research courses. Defined as a “comprehensive list of the sources searched and a summary of findings,”¹⁰² research logs have traditionally been utilized as a record—or note-keeping tool.¹⁰³ Typically, researchers will use a spreadsheet or chart to capture their research process in log form to stay organized while researching.¹⁰⁴

Traditional research logs generally include columns requiring some mix of the following information: (1) the name of the resource

101. Shibli & West, *supra* note 37.

102. Caroline L. Osborne, *The Legal Research Plan and the Research Log: An Examination of the Role of the Research Plan and Research Log in the Research Process*, 35 LEGAL REFERENCE SERVS. Q. 179, 193 (2016).

103. *Id.*

104. Robert Linz, *Research Analysis and Planning: The Undervalued Skill in Legal Research Instruction*, 34 LEGAL REFERENCE SERVS. Q. 60, 73 (2015).

the researcher is searching;¹⁰⁵ (2) the date the researcher searched for the resource;¹⁰⁶ (3) the search term(s) the researcher used to locate the resource;¹⁰⁷ (4) the findings, or what the researcher found in the resource that was, or was not helpful to their understanding of the research issue;¹⁰⁸ (5) citations and leaders to other sources, which will help the researcher continue moving their research forward;¹⁰⁹ and (6) the validity and currency of the source.¹¹⁰ An example of a traditional research log might look like the following table:

SOURCE	DATE	SEARCH TERM/ SEARCH STRATEGY	FINDINGS/HOW HELPFUL	VALIDITY/ CURRENCY	NOTES

These research logs serve several purposes. First, they assist the researcher in staying organized as they move through the research process.¹¹¹ It can also make it easier for researchers to resume research after a period away from that research project; in fact, a colleague could pick up and continue researching if the original researcher has a well-executed research log.¹¹² Research logs help researchers confirm that they have consulted all the appropriate and necessary legal resources

105. *Id.* at 72 (noting that the name of the resource can be either the title of the publication or the name of the database); *see also* Osborne, *supra* note 102, at 193 (noting that “a cite to the source” is generally included).

106. Linz, *supra* note 104, at 72; Osborne, *supra* note 102, at 193. Linz also includes “the number of results retrieved.” Linz, *supra* note 104, at 72.

107. Linz, *supra* note 104, at 72.

108. Linz, *supra* note 104, at 72; *see also* Osborne, *supra* note 102, at 193 (including a “brief summary of the information found” in her list of research log columns).

109. Linz, *supra* note 104, at 73.

110. Linz, *supra* note 104, at 73; *see also* Osborne, *supra* note 102, at 194 (including columns for both “source date/currentness” and “validity/citator”).

111. Osborne, *supra* note 102, at 79.

112. Linz, *supra* note 104, at 73.

and have not missed any important steps in the research process.¹¹³ In reviewing the log, researchers would notice any leads not followed, as well as any sources they have not yet consulted. Finally, the research log is a great tool for supporting new researchers in organizing their research.¹¹⁴ Good organization is also crucial for newer researchers to feel comfortable concluding their research, knowing they have consulted all the necessary sources.¹¹⁵ All of these benefits make the traditional log a useful tool for the researcher.

This traditional log, however, reinforces the stigma that research is a rote, mechanical task, as its primary focus is on how sources are located during the research process rather than why and how these resources are relevant to the legal issues being researched.¹¹⁶ While there often is a column dedicated to findings or usefulness, student researchers tend to enter any variety of vague answers here, such as the case applies to X issue or Y element. The findings column does not require the researcher to critically analyze the source or to consider how they will actually use that source in evaluating the legal issues in a client's pending case. Nor does it require researchers to consider how the rules of a case might be applied to the client's issue or to compare the facts of the client's case to those in the cases they have located in their research. The traditional log only requires that the researcher read or, more likely, skim the case to see if it "seems" like it may be relevant. Undoubtedly, the researcher will have to reread all these sources again later to remember how she thought it was helpful and to confirm that it is actually useful to her client's issues.

As such, the traditional log suggests research is primarily about locating sources, a technical skill rather than an analytical one. This

113. *See id.*

114. Sharon Nokes & Tanya Stern, *The Art and Craft of Strategic Legal Research*, THE WRITING CTR. AT GEORGETOWN UNIV. L. CTR. 1, 7 (2004), <https://www.law.georgetown.edu/wp-content/uploads/2018/02/strategicresearch.pdf> (discussing how "charts"—like a research log—can be helpful for organizing case law).

115. *See id.* at 9 ("[O]rganizing your research not only will help you understand the law and its application to your case—it will help you spot holes in your analysis . . .").

116. The literature on research logs and the columns included in the traditional research log demonstrate that the emphasis is on organization and bibliographic research, not on legal research analysis. *See generally* Linz, *supra* note 104; Osborne, *supra* note 102.

may result in reinforcing the narratives students have about legal research—that it is simply an easy, boring gathering task that precedes the “real” legal work—and it leaves the important analytical work to the writing phase.

By adjusting the research log to follow a CREAC format,¹¹⁷ aligning research analysis with the structure students are usually introduced to prior to engaging in legal research, professors can reimagine the research log as a more complete tool. This new tool recognizes both the bibliographic and the analytical sides of legal research. Instructors can maintain the useful aspects of the log in helping researchers stay organized throughout the research process but increase its value as a scaffolding tool that will help reduce students’ cognitive load while they learn the analytical side of research.¹¹⁸ This revised log will save students time, force them to engage in the analytical work inherent to research, and reinforce concepts they are learning in the writing portion of their first-year skills course.

2. The CREAC Log

In first-year legal skills courses, many legal writing faculty introduce their students to some form of CREAC or IRAC as a way of helping students understand how to structure their legal analysis.¹¹⁹ The CREAC abbreviation stands for “Conclusion, Rule, Explanation, Application, and Conclusion.”¹²⁰ The IRAC abbreviation begins with

117. See *infra* notes 119–32 & accompanying text.

118. See *supra* Part III.

119. Soma R. Kedia, *Redirecting the Scope of First-Year Writing Courses: Toward a New Paradigm of Teaching Legal Writing*, 87 U. DET. MERCY L. REV. 147, 169 (2010).

120. Christine M. Venter, *Analyze This: Using Taxonomies to Scaffold Students’ Legal Thinking and Writing Skills*, 57 MERCER L. REV. 621, 624 (2006). There are dozens of similar alternatives suggested by legal writing professors across the country. See, e.g., Barbara Blumenfeld, *Why IRAC Should Be IGPAC*, 10 SECOND DRAFT 1, 3–4 (1995), <https://www.lwionline.org/sites/default/files/2016-09/nov95.pdf> (IGPAC); Kim Cauthorn, *Keep on TRRACing*, 10 SECOND DRAFT 1, 4–5 (1995), <https://www.lwionline.org/sites/default/files/2016-09/nov95.pdf> (TRRAC); Lisa Eichhorn, *Writing in the Legal Academy: A Dangerous Supplement*, 40 ARIZ. L. REV. 105, 135–36 (1998) (CIRAC, CRAC); M.H. Sam Jacobson, *Learning Styles and Lawyering: Using Learning Theory to Organize Thinking and Writing*, 2 J. ASS’N LEGAL WRITING DIRS. 27, 67–70 (2004) (CRAFADC); Sally Ann Perring, *In Defense*

“Issue” and otherwise follows a similar structure, but deletes the “Explanation.”¹²¹ Regardless of which abbreviation professors use, students use this acronym to provide organization to their paper and to formulate their analysis.¹²² It simplifies the process so that students are able to tackle the difficult task of legal analysis while simultaneously engaging with legal writing—itsself a technically challenging skill—for the first time.

Students usually begin learning IRAC, CREAC, or one of its equivalents before they begin conducting legal research, during a closed memo assignment. For the closed memo, professors hand students a case file with a limited number of cases, perhaps accompanied by a statute and/or a secondary source and ask students to engage in legal analysis and writing without having to first struggle with finding cases and analyzing their relevance to their client’s issues.¹²³ Through this process, students are taught that only analysis and writing are intertwined. Research is removed and as such divorced from the analytical process, reducing the cognitive burden on students as they learn introductory legal analysis and the mechanics of legal writing.

After spending several class periods learning how to organize their analysis using CREAC, professors introduce their classes to the

of [F]IRAC, 10 SECOND DRAFT 1, 12 (1995), <https://www.lwionline.org/sites/default/files/2016-09/nov95.pdf> (FIRAC); Terrill Pollman, *Building a Tower of Babel or Building a Discipline? Talking About Legal Writing*, 85 MARQ. L. REV. 887, 898 n.51 (2002) (FORAC); Terrill Pollman & Judith M. Stinson, *IRLAFARC! Surveying the Language of Legal Writing*, 56 ME. L. REV. 239, 255–57 (2004) (BaRAC; CRuPAC); Ellen Lewis Rice, Donna Chin, Barbara Hoffman, Carmen Barbazon, & Linda Furey, *IRAC, The Law Student’s Friend or Foe: An Informed Perspective*, 10 SECOND DRAFT 1, 13 (1995), <https://www.lwionline.org/sites/default/files/2016-09/nov95.pdf> (last visited Sept. 6, 2019) (IRAAAPC); Venter, *supra*, at 624–26 (CREAC); John H. Wade, *Meet MIRAT: Legal Reasoning Fragmented into Reasonable Chunks*, 2 LEGAL EDUC. REV. 283 (1990), <https://ler.scholasticahq.com/article/6013-meet-mirat-legal-reasoning-fragmented-into-learnable-chunks> (MIRAT). While many professors agree these structures do not work perfectly, as students eventually must be more nuanced and flexible in their legal writing, it does serve as a good baseline introduction to the components of legal analysis. Venter, *supra*, at 633–34.

121. Venter, *supra* note 120, at 624.

122. See Gerald Lebovits, *Cracking the Code to Writing Legal Arguments: From IRAC to CRARC to Combinations in Between*, 82 N.Y. ST. B. ASS’N J. 64, 64 (July/Aug. 2010).

123. See Jane Bloom Grise, *Critical Reading Instruction: The Road to Successful Legal Writing Skills*, 18 W. MICH. COOLEY J. PRAC. & CLINICAL L. 259, 273 (2016).

basics of legal research. This instruction traditionally focuses on demonstrating the bibliographic tasks used to locate various sources. It then utilizes practice exercises that allow students to find sources, sometimes with a hypothetical to give them context for the issue. In this format, research is kept largely separate from analysis—or at least it is not explicitly discussed as an analytical exercise. Students may answer a legal question, but due to time constraints, the hypotheticals are necessarily kept on the simpler side and students are not forced to struggle with in-depth legal analysis.

Once students have practiced researching cases and statutes (and sometimes secondary sources and regulations), they begin researching an open memo problem that asks them to tie together their newly acquired research, analysis, and writing skills. Unfortunately, due to the extreme cognitive burden that first-year law students are under, tying these separately taught skills together proves to be a challenging task for most students. This occurs, in large part, because law students have never engaged in complex legal analysis *while* researching. Their total experience in analysis has come after they have been handed a pile of sources, so they lack the framework necessary to tackle bibliographic research and research analysis as a unified process.

As a result, most students engage primarily in bibliographic research with, at most, a shallow level of analysis. Most students attempt to find cases that “seem” on point due to having similar facts, collect those in a folder, and then begin to engage deeply in legal analysis only once they perceive they are done researching and ready to begin writing. When conducting legal research in this manner, most students skim the cases while researching, perhaps going so far as to note issues or sub-issues the cases discuss. Students often fail to consider what rules emerge from each precedent, how those rules have been applied, and how they might apply to their own set of facts. With such a cursory reading, students must reread all their authorities when it comes time to conduct their full analysis—usually when it is time for them to begin drafting their open memo.¹²⁴ This less-than-ideal research method not

124. In an anonymous student survey given to 2L and 3L students in an Advanced Legal Research class, one student noted this propensity on earlier research projects she had completed:

In the past, I have often just researched a bunch of cases, scanned them quickly and saved them to a Westlaw folder I always thought I’d miraculously remember all the details. Obviously

only requires students to waste time rereading when they are ready to start writing their memos or briefs, but it also reinforces the narratives of legal research as a mechanical task. In effect, students are trying to recreate the packet they were handed for their closed memo, and it reinforces the idea that they cannot start analyzing until after they have a set of sources. It is not, however, a productive use of students' time or energy to merely find the law without analyzing it simultaneously.

Reimagining the research log as an educational tool, based on the CREAC format, gives students a helpful framework for encountering the analytical side of research. Even though students are not experts in legal analysis after one closed memo, they are at least familiar with the characteristics of how to engage in analysis based on CREAC, and it eases their way into performing research analysis.¹²⁵ The CREAC structure acts as the training wheels students need when doing analytical research for the first time. It forces students to organize their research in an effective way *and* to engage in analysis while researching, serving as a scaffold for their learning. Introducing the CREAC log during their first experiences with open legal research also helps students create habits to engage in analysis *while* researching rather than after they are done researching.

The CREAC log follows a fairly simple structure and can be modified as needed based on the professor's preferences or to match whichever format (CREAC, IRAC, etc.) that the legal writing professor uses. At the top of each section of the log, students should identify the issue or sub-issue they are researching. For example, if students were researching a burglary issue, they might have sub-issues for each of the individual elements of burglary (see Appendix A). This serves to break down students' research into manageable pieces rather than trying to think about multiple complicated issues at once—helping to combat cognitive overload—and requires them to analyze the clients' fact

when the time came for me to go back and write a memo or summarize my research, I'd quickly realized how unprepared I was. I would essentially be back at square one!

Anonymous student survey (on file with author).

125. See Clark, Kirschner, & Sweller, *supra* note 36, at 9 ("We are skillful in an area if our long-term memory contains huge amounts of information or knowledge concerning the area. That information permits us to quickly recognize the characteristics of a situation and indicates to us, often immediately and unconsciously, what to do and when to do it.").

scenario to identify the preliminary issues.¹²⁶ Each issue or sub-issue then has the following columns beneath it:

Citation: Here, the researcher puts the citation to the source she is analyzing, including the pincite to the part of the source discussing that issue. She might also describe how she found this source if that is helpful to her in remembering which research strategies she has already used and which she might want to use when she next resumes her research. It is a good opportunity to explain to students that the first question they will be asked if they get stuck in their research and need to ask for help is what they have already tried—and that it is useful to keep a record of what resources they have already consulted. Research professors may want to require that additional piece, so they can follow their students' research paths more easily to give effective feedback on their students' research processes.

R(ule): Next, students identify the rule laid out in that case for that particular issue or sub-issue. Students should not identify every rule laid out in the case. If a case concerns more than one of the issues students are researching, it would appear in the log under each of those issues. This allows students to keep their authorities for individual issues straight, which helps when they begin drafting. Learning to identify the rule from a source is an important lawyering skill, so the CREAC log also reinforces skills that will be helpful in other courses.

E(xplanation): Next, students explain how the rule they identified was applied in the precedent case, including the reasoning the court gave for that application. This allows students to practice their analytical skills as they parse out how a rule was applied to the particular facts of the precedent case and whether the court emphasized certain points in applying that rule to the precedent case.¹²⁷ For sources such as statutes or regulations, students would skip the explanation step, as the rule has not been applied to facts in those resources.

126. In surveying 2L and 3L students, the benefits of the log became very clear, as they were able to compare it to research they had done prior to being introduced to the CREAC log. For example, one student noted: "I came to appreciate how the research log can be extremely helpful in breaking down complex concepts and in analyzing various elements." Anonymous student survey results (on file with author).

127. "By requiring explanations and an application to the facts, I'm now able to see exactly why I chose a specific case based on its rules and my understanding of how it applies to the facts." Anonymous student survey results (on file with author).

A(application): Students will then suggest how the rule specific to that sub-issue would likely be applied to their precedent case for that issue. This is where students engage in their deepest analysis, as they compare and contrast relevant facts of their clients' case against the facts of the precedent cases and analogize how rules might be applied to their client's fact scenario based on those rules' application in the precedent opinion.¹²⁸

Notes: In this section, researchers can jot down any notes or questions they have after analyzing this source for this sub-issue. This can include questions that arose while researching that they had not previously considered. Because research is a circular process, researchers cannot follow all leads from a single source simultaneously. As such, students can also note other potentially helpful sources or relevant topic and key numbers they came across while reading this source and that they want to consult later.¹²⁹ This column allows the researcher to stay organized throughout the research process, like the traditional research log. It will also help them to keep a list of sources they have already consulted, as they can strikethrough the sources they have already looked at that were not helpful. Ultimately, having a list of all the sources they have read—whether they end up logging them or not—can help them to know when they are finished researching, as

128. One student emphasized this point: “[T]his method forced me to think about why exactly the particular case would be useful . . . rather than identifying the cases as one that generally seems to related based on the overall facts or law.” Anonymous student survey results (on file with author).

129. In the anonymous student survey, one student noted: “I greatly appreciate this area of the log because it allows for creativity and is more open-ended. . . . It enables me to include ideas that [may] not be immediately relevant to the issue that I am presently analyzing.” Anonymous student survey results (on file with author). Another found that the Notes section gave them the space to think more openly about their research:

The CREAC log helped me organized my thoughts and posit questions in an accessible way For example, I left a comment in the statute entry asking whether the statute's mention of a 'class B felony' was relevant in our cases. This was an off-handed question that I thought to myself while reading through the statute. I appreciate that the log gave me a space to mark this query to revisit. In my previous research I might not have jotted down this question and I could have written it off as a non-issue.

Anonymous student survey results (on file with author).

one clue to know when they are done researching is to see the same precedent pop up again and again.

Finally, after each sub-issue, there is a place for the researcher to conclude based on their analysis of the sources consulted for each issue. This allows students to engage in rule synthesis when appropriate and to make a prediction about how the court is likely to rule on the particular issue.

Because first-year students have already been introduced to CREAC earlier in the semester while completing their closed memo assignment, they have pre-existing knowledge structures in place to help them organize and engage in their analysis.¹³⁰ In an anonymous survey we gave asking students to reflect on using the CREAC log, students noted both of these benefits. For example, one student noted:

The CREAC log is the latest tool that I will certainly take with me into practice, for a number of reasons. First, as described above, the way the CREAC log is structured naturally led me to a deeper analysis of my cases and the key facts and issues within. Just through the process, I began to see things in my cases I would not have otherwise picked up on. Second, it is a great way to stay organized. Breaking down the statutes by elements, and then organizing my rules on each element in the CREAC log helped me to keep each aspect of the case distinct and allows you to analyze each element and understand the standards of proof, and burdens of proof, that are required for each.¹³¹

CREAC gives students a framework for how to engage with the sources they are encountering, rather than reading sources without a clear objective. Its structure serves as a reminder to look for rules, analyze how those rules were applied in their precedent, and consider how that rule might be applied in their particular case.¹³² This is a better

130. See *supra* Part III.A.

131. Anonymous student survey results (on file with author).

132. One student wrote in the anonymous student survey that:

Outlining the specific elements of the case and providing quick rule statements and analysis allowed me to always have an overview of the case I was researching that was easy and simple to read, so that

strategy than skimming a case to see if it seems generally on point and throwing it in a pile with a bunch of other authorities to return to when it is time to start writing; the CREAC log prevents students from having to reread and only begin analyzing sources when it is time to write and focus on drafting.¹³³

A wonderful side effect of this tool is that it generally results in better written memos, as students often struggle when they try to simultaneously analyze sources and draft using the mechanical writing skills they are still learning. The CREAC log can serve as a rough outline of their analysis, so when it is time to write, students can be more elegant in structuring their arguments because they already have a basic outline of the rules and their application. More practice with legal analysis can also be a benefit when it comes time for students to take their first-year exams; they will have had more practice utilizing CREAC to organize their answers.

It is critical that instructors be explicit about how and why students are conducting research using a log. Otherwise, students may see the log as busy work. Explaining that the log is meant to serve as a structure to help students with the analytical work of research will help students to see the value in the exercise. Talking to students about the learning benefits of scaffolding lets them know that using research logs is a carefully designed instructional strategy meant to help them grow as future attorneys. It is also prudent to explain the helpful side effects of completing the log—serving as a rough draft for their memo, helping them master the CREAC structure to thrive on their writing assignments and exams, and ultimately saving them time in their research and writing projects as they do not duplicate their analytical work.

I could pick up my train of thought where it last let off when jumping back on the research process.

Anonymous student survey results (on file with author).

133. This showed up in the anonymous student survey results as well, with one student mentioning that it's:

[M]uch easier to have pre-written analysis of how the rulings in specific cases relate to the matter you are researching than having to go back to a case you only have a citation for and trying to remember why you marked it down as useful for this issue in the first place.

Anonymous student survey results (on file with author).

Students may think it is not practical to do a complete research log every time they conduct legal research—and they are correct. But utilizing the CREAC log during the time we are teaching students to engage in research analysis will train them to engage in those mental processes later in their careers without the aid of the log itself. A key part of scaffolding, after all, is eventually to remove those training wheels. As students move away from their legal skills courses, students' long-term memories will already have knowledge constructs formed to engage in analysis during research. Students, therefore, will immediately and unconsciously begin to engage in this analysis while researching even without the CREAC log's structure to aid them. Others may return to the research log throughout their career when they are juggling multiple complex cases to keep their research organized.¹³⁴

3. How a New Log Overcomes False Narratives

In addition to providing students with a knowledge structure to help them engage in analytical and bibliographic research simultaneously, forcing students to engage in legal analysis also helps to correct the three false narratives of legal research that students hold—that legal research is easy, boring, and unimportant.¹³⁵ The primary reason for this is that requiring students to engage in legal analysis eliminates the perception that research is solely a mechanical gathering task.¹³⁶

For the students like Antoine who believe that legal research is easy, engaging in this analysis demonstrates that legal research is a complex undertaking. It shows students that legal research is not just about finding cases that are factually similar but requires deep thinking about how the rules as applied in precedent cases would be addressed

134. Several students in the anonymous student survey explicitly stated that they intended to use the logs in practice and showed a thoughtfulness of how they could adapt it based on the type of research they were doing. *Id.*

135. *See supra* Part II.

136. The anonymous student survey results show that the students are thinking more deeply about the researching that they're doing. One student stated that: "the difference in results between [using the log or not] is stark. My thoughts on my research and much clearer once they are organized into the log." Anonymous student survey results (on file with author). Another student echoed that sentiment: "[The CREAC log] helped my thinking and analysis when evaluating a statute or a case [It] helped deepen my analysis of the law." *Id.*

in their client's situation. He will learn that there is much more to legal research than figuring out how to navigate Westlaw and Lexis.

For the Marias, who believe that legal research is boring, the CREAC log will help them see that research is, at its heart, a problem-solving endeavor. They will learn that research is a chance to find the answers to their clients' problems. By highlighting research's relationship to the analysis and writing processes, legal skills professors can help increase these students' intrinsic motivation and maintain their attention, as they see research as central to their ability to help their clients. These increases in intrinsic motivation and attention will ultimately result in better long-term retention of these skills. Students will also leave class understanding that research requires in-depth analysis and serious problem-solving chops.

Finally, the CREAC log can show the Andys, who believe that research is unimportant, how central legal research is to lawyering. While research may be worth fewer credits or a smaller percentage of their first-year skills course grade, the analysis skills they practice while using the CREAC log will be helpful for their doctrinal classes. They will see how critical research is for successful writing and that their analytical research abilities will have an impact on their writing grades.¹³⁷

The CREAC log reduces the burden on students' cognitive loads, integrates research more clearly into analysis and the writing process, increases students' intrinsic motivation for engaging in legal research, and can have positive impacts on students' final exams and their writing projects—all while battling the false narratives that denigrate research's place in the legal curriculum.

V. CONCLUSION

The overcrowding of the first-year curriculum is challenging for students' limited cognitive capacities. Due to this problem, research instruction has been focused on bibliographic, rather than analytical, skills. This lack of emphasis on research as analysis has resulted in false narratives about the importance and difficulty of legal research

137. Additionally, because students are engaging in significant analysis while completing the log, legal skills faculty can attribute more of their overall grade to research, emphasizing its importance in the course, particularly if the log can serve as an outline for their memo drafts.

instruction and reduced students' intrinsic motivation for learning research skills. It has also made it challenging for students to engage in complex legal analysis while researching, a necessary skill for the efficient practice of law.

Research professors can look to educational psychologists' research on cognitive load theory and scaffolding to aid them in redesigning their courses and assignments by drawing on preexisting knowledge structures that have been introduced in earlier educational experiences. The CREAC log is one example of a scaffolding technique professors can use to help law students engage in legal analysis while researching. Not only will this result in students maintaining stronger research and analysis skills, it will help break down damaging false narratives about the importance of legal research within the legal academy as students learn to engage simultaneously in bibliographic and analytical research.

VI. APPENDIX A

Subissue #1: Intentional damage by fire				
CITATION	RULE	EXPLANATION	ANALYSIS	NOTES
NY Penal Code § 15.05(1).	Intentionally: requires that the actor's "conscious objective is to cause such result."		Since Mr. Schrote was intoxicated, it's unclear if his "conscious objective" was to burn down the she-shed.	How do courts find evidence of "conscious objective"?
People v. Regan, 21 A.D.3d 1357 (N.Y. App. Div. 2005) 4 th Department-- BINDING	The defendant must have the conscious objective of causing damage to the building and of starting the fire. Intent can be inferred from both direct and circumstantial evidence.	Here, the circumstantial evidence of the defendant was sufficient to show intent (the facts are of the case are not presented). But <i>Regan</i> also cites <i>People v. Dale</i> , 71 A.D.3d 1517, in which defendant's repeated threats to set fire to the mobile home and threats on the day of the fire constituted evidence of intent.	Mr. Schrote intentionally started a bonfire. However, he did so using wood stacked <i>next to</i> the shed. Mr. Schrote was angry at Angela and yelled at her to leave the property, but he never specifically threatened or discussed lighting fire to the shed. It is not clear that his conscious objective was to damage the she-shed.	Read: <i>People v. Dale</i> , 71 A.D.3d 1517. How might intoxication impact the existence of intent?
CONCLUSION to Subissue #1:	While Mr. Schrote intentionally started the fire, there is no direct or circumstantial evidence to suggest he intended to damage the shed.			

Subissue #2: to a building				
CITATION	RULE	EXPLANATION	ANALYSIS	NOTES
NY Penal Law § 150.00	Building, in addition to its ordinary meaning, includes any structure, vehicle or watercraft used for overnight lodging of persons, or used by persons for carrying on business therein.		The she-shed had a day-bed in it, which means it could be used for overnight lodging, and Angela had been using it to work on her Etsy business, so it was being used for carrying on business within. As such, it likely qualifies as a building.	How do courts find evidence of “conscious objective”?
People v. Noreutt, 115 A.D.3d 1306 (2014) 4 th Department-- BINDING	The term “building in the arson statute generally, though not always, implies the idea of a habitat for a person’s permanent use or an erection connected with his or her permanent use. A constructed edifice enclosed by walls, covered by a roof, designed to stand permanently and serving a useful purpose is included within the ordinary meaning of the word building.	The trailer that the defendant set on fire was a “building” within the meaning of the statute. The trailer was a constructed edifice enclosed by walls, covered by a roof, and designed to stand permanently.	The she-shed contained a day-bed. It was a constructed edifice enclosed by walls, covered by a roof, and designed to stand permanently.	Does it matter that the owner of the property was not aware that the shed had a bed in it and was or had the potential to be used for this purpose? Does sleeping in the shed one time constitute being “used for overnight lodging”

<p>People v. Norcutt, cont'd:</p>		<p>It had furnishings for sleeping and a bathroom and kitchen; was equipped with a power cord for immediate access to power and a propane tank for powering the refrigerator and heaters. Even if it was not a "building," the trailer was a "structure" used for overnight lodging within the meaning of the statute, where the trailer was used for overnight lodging on vacations or weekend retreats and the defendant had previously rented the trailer as overnight lodging for 4 months.</p>	<p>It was also connected to electricity, as evidenced by the light in the shed. Mr. Schrute's comment that no one has ever slept in the shed before suggests that it may not be used for overnight lodging. However, Angela stated that she worked out of the she-shed and stored materials in there that she used to make items she recently started selling in her Etsy shop. Thus, it is likely to be considered a structure "used by persons for carrying on business therein" within the meaning of the statute.</p>	
<p>CONCLUSION to subissue #2:</p>	<p>Due to the fact that the she-shed was used for running an Esty building, constructed edifice enclosed by walls, covered by a roof, designed to stand permanently, and serves a useful purpose—meaning that it falls within the ordinary meaning of the word "building", it likely qualifies as a building.</p>			

Subissue #3: Knowledge of such person's presence or reasonable possibility of their presence based on the circumstances				
CITATION	RULE	EXPLANATION	ANALYSIS	NOTES
NY Penal Law § 15.05(4)	Knowingly: a person acts knowingly with respect to conduct or to a circumstance described by a statute defining an offense when he is aware that his conduct is of such nature or that such circumstance exists.		Mr. Schrute insists he didn't know she was in the building, but the lights being on and the fact that Angela went out the back door suggest there were circumstances that might have suggested someone was in there.	
People v. Burns, 68 A.D.3d 1246	Direct and/or circumstantial evidence must show that the defendant knew or reasonably could have known that the victim was inside the premises at the time of the fire.	Here, it was legally sufficient that the arsonist "noticed vehicles parked near the trailer," and knew the defendant's wife was not working at the time. This evidence proved to the court that it was reasonable to think that the victim would be in the place of fire	Our case could be seen as similar. Angela testified that the light was on the entire night, thus possibly alerting Mr. Schrute to the fact that she was inside. She also stormed out the backdoor. Unlike this case, Mr. Schrute does have the defense that he was unaware of the shed containing a bed, and since the fire took place at night, he might not have believed her to still be there. Hours had lapsed since she went out the back door.	"Reasonably could have known" seems to be based on the surrounding circumstances—what other factors have courts used to determine someone could have known?
CONCLUSION to Subissue #3:	The circumstantial evidence is mixed here. The light being on and Angela going out the back door lean one way, while the time that lapsed since she left and him telling her to leave his property lean the other. I want to find some more cases for this element to see how courts have used different facts in this type of analysis.			