#CRITICALREADING #WICKEDPROBLEM

> We have a "wicked problem" . . . and that is a fantastic, engaging, exciting place to start.

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I. INTRODUCTION

I became interested in the idea of critical reading—"learning to evaluate, draw inferences, and arrive at conclusions based on evidence" in the text[2]—when I assumed that my students would show up to law school with this skill . . . and then, through little fault of their own, they did not. I have not been the only legal scholar noticing this fact. During the 1980s and 90s a few legal scholars conducted research and wrote about law students' reading skills.[3] During the 2000s, a few more scholars wrote about how professors can help develop critical reading skills in law students.[4] But it has not been until the past few years or so that legal scholars have begun to shine a light on just how deep the problem of law students' critical reading skills

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[2] Jane Bloom Grise, *Critical Reading Instruction: The Road to Successful Legal Writing Skills*, 18 W. MICHIGAN U. COOLEY J. PRAC. & CLINICAL L. 259, 261 (2016).

[3] *See generally* Laurel Oates, *Beating the Odds: Reading Strategies of Law Students Admitted Through Alternative Admissions Programs*, 83 IOWA L. REV. 139 (1997); Peter Dewitz, *Legal Education: A Problem of Learning from Text*, 23 N.Y.U. REV. L. & SOC. CHANGE 225 (1997) [hereinafter Dewitz, *A Problem of Learning from Text*]; Peter Dewitz, *Reading Law: Three Suggestions for Legal Education*, 27 U. TOL. L. REV. 657 (1996) [hereinafter Dewitz, *Reading Law*]; Dororthy H. Deegan, *Exploring Individual Differences Among Novices Reading in a Specific Domain: The Case of Law*, 30(2) READING RES. Q. 154 (1995); Elizabeth Fajans & Mary R. Falk, *Against the Tyranny of Paraphrase: Talking Back to Texts*, 78 CORNELL L. REV. 163 (1993); Martin Davies, *Reading Cases*, 50 MOD. L. REV. 409 (1987).

[4] *See generally* Debra Moss Curtis & Judith R. Karp, *In a Case, on the Screen, Do They Remember What They've Seen? Critical Electronic Reading in the Law Classroom*, 30 HAMLINE L. REV. 247 (2007) [hereinafter Curtis & Karp, *In a Case, on the Screen*]; Debra Moss Curtis & Judith R. Karp, *"In a Case, in a Book, They Will Not Take a Second Look!" Critical Reading in the Legal Writing Classroom*, 41 WILLAMETTE L. REV. 293 (2005) [hereinafter Curtis & Karp, *In a Case, in a Book*]; Christina L. Kunz, *Teaching First-Year Contracts Students How to Read and Edit Contract Clauses*, 34 U. TOL. L. REV. 705 (2003).

really runs.[5] As Jane Bloom Grise recently lamented, the notion that students "have the tools to critically read when they enter law school is not supported in the reading studies or the [students' self-] evaluations."[6]

The thoughts on how to address law students' lack of critical reading skills, however, are mixed and varied. The list of solutions to address critical reading deficiencies in law students that a small group of legal academics has put forth focuses largely on what legal writing professors can do to remedy the problem.[7] And although a handful of scholars have argued that all law professors, regardless of the subject that they teach, should demonstrate critical reading strategies in the classroom,[8] in reality, I fear that various legal education stakeholders see the lack of critical reading skills in law students as a problem only legal writing professors should fix.[9] Should this perception

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5 Grise, *supra* note 2; *see generally* Patricia Grande Montana, *Bridging the Reading Gap in the Law School Classroom*, 45 CAP. U. L. REV. 433 (2017).

6 Grise, *supra* note 2, at 302; *see also* Montana, *supra* note 5, at 445 ("Students' undergraduate education has not adequately prepared them for the rigorous reading . . . of law school.").

7 Curtis & Karp, *In a Case, in a Book*, *supra* note 4, at 313 (discussing an exercise developed for 1L law students that demonstrates critical reading skills); Fajans & Falk, *supra* note 3, at 204-05 (suggesting that critical reading be introduced in an advanced writing class, but questioning whether it should also be taught in 1L writing classes); *see generally* Lauren A. Newell, *Redefining Attention (and Revamping the Legal Profession?) for the Digital Generation*, 15 NEV. L.J. 754, 810 (2015) (bemoaning that "[l]egal writing instructors may also need to fill in gaps in their students' writing education" such as critical reading and writing deficiencies and thus "law school writing courses may become less courses in *legal* writing, and more courses on simply *writing*") (emphasis in original); Kari Mercer Dalton, *Bridging the Digital Divide and Guiding Millennial Generation's Research and Analysis*, 18 BARRY L. REV. 167 (2012) [hereinafter Dalton, *Bridging the Digital Divide*] (suggesting what legal research and writing professors can do to increase critical thinking at the legal research stage). The majority of students asked in a recent study believed that critical reading should be taught in legal writing as well, followed by many who thought it should be a stand-alone class, but did not specify who would teach such a class. *See* Grise, *supra* note 2, at 299-300.

8 Laura P. Graham, *Generation Z Goes to Law School: Teaching and Reaching Law Students in the Post-Millennial Generation*, 41 U. ARK. LITTLE ROCK L. REV. 29, 72-75 (2018); Montana, *supra* note 5, at 448-54 (including what all law professors can do to improve critical reading skills); Grise, *supra* note 2, at 303-04 (listing "recommendations for incorporating critical reading instruction into all classrooms"); Kari Mercer Dalton, *Their Brains on Google: How Digital Technologies are Altering the Millennial Generation's Brain and Impacting Legal Education*, 16 SMU SCI. & TECH. L. REV. 409, 434-36 (2013) [hereinafter Dalton, *Their Brains on Google*] (advocating for professors to "continually reinforce critical reading throughout the students' legal education"); Curtis & Karp, *In a Case, on the Screen*, *supra* note 4, at 277 (giving examples from their own experiences teaching students in casebook classes how to critically read cases); Kunz, *supra* note 4, at 705-06 (explaining how to incorporate critical reading into a contract drafting course and lamenting that casebook professors could use those same techniques in their classes); Oates, *supra* note 3, at 160 (concluding that professors could better teach critical reading skills after conducting research on students admitted alternatively to law schools); Dewitz, *A Problem of Learning from Text*, *supra* note 3, at 236 (suggesting "what a law professor can do to promote understanding before, during, and after the students read").

9 A couple scholars advocate that "law schools" should take certain steps, but do not specify who exactly should take the lead in teaching critical reading. Oates, *supra* note 3, at 160 ("At the time of admission, law schools need to identify those students who lack basic reading skills and to provide them with remedial instruction . . . [L]aw schools need to 'teach' legal reading by

stay the norm, it would have grave consequences. First, it downplays the role other stakeholders must have as part of the solution. With so many causes, it would be disingenuous to place the burden of the solution on only one class of stakeholders-legal writing professors who historically have had a stunning lack of power in their institutions.[10] Second, framing it so narrowly sends the message to students that they will only use critical reading skills in a legal writing class and reduces the likelihood that they will transfer those skills to other situations.[11] Most, indeed probably all, law professors want their students to critically read the class material and come to class prepared with questions and insights. Finally, and most importantly, by framing the issue as a legal writing problem, the "solutions" put forth do not address many of the root causes and rarely involve all legal education stakeholders' input, making those solutions only triage. Thus, before the most effective remedies can be implemented, there must be a broader stakeholder buy-in and a reframing of the issue.

To do this, all stakeholders must recognize the lack of critical reading skills in law students as a "wicked problem."[12] The most distinguishing characteristic of a wicked problem is that it "cannot be definitively described or understood (since it is seen differently by different stake-holders, has numerous causes, and is often the symptom of other problems)."[13] An example of a wicked problem would be how to best to solve the opioid crisis. Why are people addicted to opiates? Is it the pharmaceutical companies' fault for producing and marketing opiates? Is it doctors' fault for prescribing opiates too loosely? Or are users simply predisposed to addictive behaviors, and were it not for opiates, they would be addicted to another drug? Depending on the stakeholder you ask—addicts, addicts' families, doctors,

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familiarizing students with the ways in which lawyers read opinions."); Dewitz, *Reading Law*, *supra* note 3, at 665-72 (suggesting two ways "law schools" can help students critically read and one way in which all professors can). Two scholars have created self-help books for lawyers and law students. JANE BLOOM GRISE, CRITICAL READING FOR SUCCESS IN LAW SCHOOL AND BEYOND (2017); RUTH ANN MCKINNEY, READING LIKE A LAWYER 51-55 (2d ed. 2012).

10 *See* Kathryn M. Stanchi, *Who Next, the Janitors? A Socio-Feminist Critique of the Status Hierarchy of Law Professors*, 73 UMKC L. REV. 467, 476 (2004).

11 *See* Deborah Zalesne & David Nadvorney, *Why Don't They Get It?: Academic Intelligence and the Under-Prepared Student as "Other"*, 61 J. LEGAL EDU. 264, 271 (2011) (complaining that many times "neither faculty nor students consider [the skills learned in legal research and writing courses] as transferrable to their [casebook] classes").

12 *See generally* Horst W. J. Rittel & Melvin M. Webber, *Dilemmas in General Theory of Planning*, 4 POL'Y SCIS. 155 (1973), http://urbanpolicy.net/wp-content/uploads/2012/11/Rittel+Webber_1973_PolicySciences4-2.pdf (introducing the theory of "wicked problems"). This is not the first time legal scholars have characterized problems in legal education as "wicked problems." *See* Judith Welch Wegner, *Reframing Legal Education's "Wicked Problems"*, 61 RUTGERS L. REV. 867, 870-71 (2009) (applying it to legal education reform generally); Rebecca Flanagan, *The Kids Aren't Alright: Rethinking the Law Students Skills Deficit*, 2015 BYU EDUC. & L.J. 135, 137 (2015).

13 Wegner, *supra* note 12, at 870.

politicians, pharmaceutical companies, hospitals, rehabilitation centers, prison staff, the general public—the answer may be different.

The deficit of critical reading skills in law students has all the characteristics of a wicked problem that is far too prevalent and nuanced to be solved by one small sector of stakeholders. Wicked problems are not simply complex; they "cannot readily be resolved [because there are] (cascading consequences that are difficult to discern at the outset) and can only be addressed in 'better or worse' ways, rather than by proving solutions are true or false."[14] If stakeholders fail to recognize the wicked dynamics in problems, they will apply inappropriate methods, systems, or techniques to fix them.[15]

The higher or more broad the problem is, the harder it is to tackle, so some problem-solvers settle for attacking the problem on a low level—one on which they feel that they can make a difference.[16] But the success of solutions on a lower level may hinder efforts to address the causes of the higher, wicked problem.[17] After reviewing the literature and observing the field, I would posit that is exactly what is happening with critical reading. Those who are most commonly *implementing* solutions are legal writing professors who execute them on a small scale in their individual classrooms.[18] While this may be a low-cost method in monetary terms, it has high costs for what other skills the legal writing professor must sacrifice teaching. And other professors, the law school, and the students may acquire a sense of complacency that the problem is being addressed, and thus the problem or solution has little to do with them. Or worse, and more common, other stakeholders blame legal writing professors for not producing students who are expert critical readers when the issue is so complex that legal writing professors could not hope to succeed on their own.

My thesis is deceivingly simple. A majority of incoming law students lack adequate critical reading skills, but because this is a wicked problem, the effort to improve these skills requires participation from a myriad of legal education stakeholders and cannot be solved by legal writing professors alone, even with help from academic support staff. The first step in getting this cooperation is to demonstrate the prevalence of the problem in a particular law school by assessing incoming law students' critical reading skills at the outset and then again in their third year of law school. Only then

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14 *Id.* at 870-71.

15 JEFF CONKLIN, DIALOGUE MAPPING: BUILDING SHARED UNDERSTANDING OF WICKED PROBLEMS 21-23 (2006).

16 *Id.* at 20-21.

17 *Id.* at 21-22.

18 *See* Curtis & Karp, *In a Case, in a Book*, *supra* note 4, at 313-21 (discussing an exercise developed for 1L legal writing students that demonstrates critical reading skills); *see also* Curtis & Karp, *In a Case, on the Screen*, *supra* note 4, at 277 (giving examples from their own experiences teaching students in casebook classes how to critically read cases).

can all legal education stakeholders begin to understand the problem and collectively tackle it.

This Article does not posit any particular solution—or even a set of solutions from which to choose. This is a deliberate choice. If the lack of critical reading skills in law students is a wicked problem that requires the buy-in of all stakeholders and an understanding that any solution is only "better" or "worse" than others, giving readers a discrete list of solutions that various stakeholders could adopt would undermine that premise. Indeed, it would implicitly approve of the reader tackling critical reading on a small scale and thereby hinder the difficult work of solving the root of the larger problem.[19] Instead, this Article endeavors to convince all stakeholders—particularly casebook faculty and law students—that they must be a part of the discussions on what to do about the deficit of critical reading skills in incoming law students, and that their involvement is crucial to the success of this endeavor. Because critical reading skills underpin so many other skills in the legal profession, without this discussion (and awareness), the legal academy will have an impossible time responding to the changing needs of law students.

Part II describes what critical reading is, the proof we have so far that the skill is deficient among students, the reasons behind that deficit, and why that is a problem. Part III explains the concept and characteristics of wicked problems and how each trait applies to critical reading. With that background, Part IV endeavors to convince all stakeholders to join in the discussion by encouraging the use of a critical reading assessment tool.

II. CRITICAL READING TODAY

In essence, critical readers analyze what the text, as a whole, means.[20] Critical readers "evaluate, draw inferences, and arrive at conclusions based on evidence" in the writing.[21] So in contrast to merely understanding what the text says, critical readers reflect on what the text *does*: Is it criticizing a practice? Arguing for a particular point of view? Offering examples? Appealing for empathy? Using circular logic? Clarifying a point?[22] Students

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19 *See* CONKLIN, *supra* note 15, at 22-23.

20 Janice Lewis, *Redefining Critical Reading for College Critical Thinking Courses*, 34 J. READING 420, 423 (1991) ("[Critical reading includes] both the comprehension of an author's meaning and analysis of the value and appropriateness of that meaning . . . ."); Dan Kurland, *What is Critical Reading?* (2000), http://www.criticalreading.com/critical_reading.htm.

21 Curtis & Karp, *In a Case, in a Book*, *supra* note 4, at 296 (quoting Norma Decker Collins, *Teaching Critical Reading through Literature*, WORLD OF EDUCATION, available at http://library .educationworld.net/a7/a7-100.html).

22 Kurland, *supra* note 20.

need to learn how to study the author's choices such as idea placement, syntax, and diction, and then learn "how to think about what they find."[23]

The goals of a critical reader are to "recognize an author's purpose, understand tone and persuasive elements, and to recognize bias."[24] Expert critical readers' use of metacognition—thinking about thinking—is crucial to their success.[25] Expert critical readers: (1) monitor and fix comprehension by summarizing and synthesizing ideas in the text; (2) recall prior knowledge to mentally connect it to new information or to fill in gaps in the text; (3) analyze text to determine important ideas before, during, and after reading; (4) ask questions to focus their attention during reading; (5) draft hypotheses and look for textual support for them; (6) search for evidence to validate the author's assumptions; (7) and evaluate the strengths and weaknesses of an author's arguments.[26]

There are huge differences between decoding reading (when a person can read words smoothly), reading comprehension (understanding the content), and critical reading (understanding the various uses to which words can be put and therefore going beneath the text to interpret what the author really means).[27] In other words, recognizing what the text *says* is reading comprehension, which is necessary for, but not the end of, critical reading.[28] Many students believe that if they reread the text so that the information is familiar and easy to remember, then they have critically read a piece.[29] Consequently, students have an "illusion of fluency [and] mastery of the [subject matter]."[30] Research has shown, however, that rereading and highlighting are the least effective study tools.[31] Instead, students must learn to go beyond understanding and summarizing the main points of the text and adopt a constructivist epistemology—they need to believe that they "create

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23 Curtis & Karp, *In a Case, in a Book*, *supra* note 4, at 296.

24 Alex Steel et al., *Critical Legal Reading: The Elements, Strategies and Dispositions Needed to Master this Essential Skill*, 26(1) LEGAL EDUC. R. 187, 190 (2017) (characterizing critically reading legal texts as a "critical 'reading against the grain' activity in which the lawyer interrogates the text and makes independent judgments about its meaning and veracity").

25 Dewitz, *Reading Law*, *supra* note 3, at 660.

26 Sabrina Marschal & Cynthia Davis, *A Conceptual Framework for Teaching Critical Reading to Adult College Students*, 23 ADULT LEARNING 63, 64 (2012); Curtis & Karp, *In a Case, on the Screen*, *supra* note 4, at 276; Curtis & Karp, *In a Case, in a Book*, *supra* note 4, at 299; Jennifer M. Cooper, *Smarter Law Learning: Using Cognitive Science to Maximize Law Learning*, 44 CAP. U. L. REV. 551, 561, 569 (2016).

27 MARYANNE WOLF, PROUST AND THE SQUID: THE STORY AND SCIENCE OF THE READING BRAIN 136-37 (2007).

28 Kurland, *supra* note 20.

29 *See* Cooper, *supra* note 26, at 567; *see* Steel et al., *supra* note 24, at 193 ("Students tend to be aware of a failure to derive meaning from a passage, but are often unaware of their failure to apply critical thinking to the apparent meaning of implication of the passage.").

30 Cooper, *supra* note 26, at 567.

31 *Id.* at 568.

meaning through their reading."[32] Critically reading a text takes more complex cognitive skills than simply rereading it does.[33]

Critical reading, critical thinking, and writing are related, but separate, concepts. Although reading and writing are "highly related, they entail the different use of similar but not exactly the same knowledge, skills, and abilities."[34] Thus, some students may be great writers, but not good readers, and vice versa.[35] Likewise, critical thinking often includes comparing the thinker's own values, morals, and agenda with someone else's idea, whereas critical reading includes evaluating a piece of writing on its own merit without allowing one's personal viewpoint to take over.[36] Students must fully understand a text through critical reading before they can evaluate its assertions through critical thinking and then write about it.[37]

With those distinctions in mind, Part II(A) analyzes how we know that critical reading skills in law students are declining.

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[32] Steel et al., *supra* note 24, at, 203-04; *see* WOLF, *supra* note 27, at 138-40.

[33] *See* Mozert v. Hawkins County Pub. Schs., 827 F.2d 1058, 1060 (6th Cir. 1987) (Kennedy, J., concurring).

[34] Emily J. Shaw, Krista D. Mattern & Brian F. Patterson, *Discrepant SAT Critical Reading and Writing Scores: Implications for College Performance*, 16 EDUC. ASSESSMENT 145, 159 (2011); *see* Curtis & Karp, *In a Case, in a Book*, *supra* note 4, at 295. *But see* J. Michael Cavanaugh et al., *Digital Technology and Student Cognitive Development: The Neuroscience of the University Classroom*, 40 J. MGMT. EDUC. 374, 380 (2016) (stating that the terms "critical reading" and "critical thinking" "so strongly overlap in the cognitive and educational literatures that their meanings are essentially equivalent").

[35] Shaw, Mattern, & Patterson, *supra* note 34, at 146-47. Many scholars say there may be a correlation between reading and writing skills, but little empirical work has been done to prove this. Grise, *supra* note 2, at 265-68 (summarizing the existing literature in general education regarding the impact of critical reading on writing skills). One recent study, however, has shown a small, albeit not statistically significant, increase in law students' writing skills after having eight hours of instruction in critical reading, and a small but statistically significant increase in the scores for rule explanation, suggesting that instruction on critical reading has a direct correlation to writing. *Id.* at 300-01. Grise is quick to point out that there would have been a statistically significant difference in overall writing scores if there had been three more students in both the control and participation groups, if those additional students had the same average test scores. *Id.* at 301. Thus, she advocates for another study that uses a larger sample than 12 students in each the control and participation groups. *Id.* Additionally, there was practical significance to the participant group individually because they received two points higher on average on their graded assignment after receiving critical reading instruction, which could give them an advantage in a legal writing class when the total points possible was 36. *Id.* at 290-91.

[36] Dan Kurland, *Critical Reading v. Critical Thinking* (2000), www.criticalreading.com/critical_reading_thinking.htm.

[37] *Id.* In this way, I agree with Grise and other scholars that if students can critically read, they have a better chance of being able to write well. *See* Grise, *supra* note 2, at 301. Additionally, the increase in writing skills of students who receive instruction in critical reading could be attributed to an increased ability to read and revise their own writing—a crucial part of legal writing. *See* Jill Fitzgerald, *Enhancing Two Related Thought Processes: Revision in Writing and Critical Reading*, 43 READING TEACHER 42, 43-44 (1989) (hypothesizing that revision in writing and critical reading are "highly related and draw on similar thought processes").

A. Proof that Critical Reading Skills Are Deficient

There is a scarcity of empirical research indicating that entering law students lack critical reading skills, although numerous scholars agree the shortfall exists.[38] Most scholarship regarding critical reading has some version of this agreement.[39] The anecdotal evidence, however, is overwhelming.[40] Legal writing professors across the nation have noted a decline in their students' critical reading skills.[41] Recently, I attended two conferences where presentations by legal writing professors from across the country discussed stories of how students did not understand what they meant by critical reading and how students could not do it without significant step-by-step help.[42]

One study published in 2008 by Dorothy H. Evensen, James F. Stratman, Laurel C. Oates, and Sarah Zappe (the "Critical Reading Assessment Study") stands out as a large-scale, comprehensive empirical assessment of law students' ability to read and reason through cases. Specifically, it sought to test whether law students struggle analyzing the indeterminacies, ambiguities, and vagueness of cases.[43] The researchers created two versions of a similar test, TV1 and TV2.[44] Each test consisted of three cases that law students from five different law schools read and then contained 14 questions to answer.[45] The questions had two comprehension difficulty levels: 1) questions that asked about only one case, and 2) questions that asked the students to synthesize material across all cases.[46] The questions also had two semantic difficulties: 1) determinate questions that tested students' ability to accurately recognize case content, and 2) indeterminate-

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38 DOROTHY H. EVENSEN ET AL., LAW SCHOOL ADMISSION COUNCIL, DEVELOPING AN ASSESSMENT OF FIRST YEAR LAW STUDENTS' CRITICAL CASE READING AND REASONING ABILITY: PHASE 2 at 1 (2008) [hereinafter DEVELOPING AN ASSESSMENT] (describing the second phase of testing a prototype of a multiple-choice test to assess critical case reading and reasoning among law students at two points during the first year); *see* Shailini Jandial George, *Teaching the Smartphone Generation: How Cognitive Science Can Improve Learning in Law School*, 66 ME. L. REV. 163, 164 (2013) ("Scholars agree that these students are entering law school with weaker reading and reasoning skills than prior generations.").

39 *See* Flanagan, *supra* note 12, at 146; George, *supra* note 38, at 164.

40 *See* EVENSEN ET AL., *supra* note 38, at 2 ("Nearly all of the previous scholarly efforts to describe the structure and development of [law students'] case reading and reasoning skills proceed from classroom teachers' perceptions and tacit theories about the origins of students' difficulties.").

41 Curtis & Karp, *In a Case, in a Book*, *supra* note 4, at 294.

42 Conference Program, LWI One-Day Workshop (Dec. 8-9, 2016); Conference Program, Seventeenth Annual Rocky Mountain Legal Writing Conference (Mar. 10-11, 2017).

43 EVENSEN ET AL., *supra* note 38, at 1.

44 *Id.*

45 *Id.*

46 *Id.*

meaning questions that tested students' "ability to identify purpose-relevant questions about indeterminacies of interpretation."[47]

The researchers ran the study in two phases. In Phase 1, 161 first year law students took TV1 (some in the fall and some in the spring) and the mean was 7.91 correct answers out of 14, and the most common score was 64% (9/14).[48] There was no difference in scores between those who took it in the fall or spring.[49]

In Phase 2, which researchers undertook to determine the validity of the test and see if the results could be replicated with first year law students and third year law students, 146 first year law students were randomly assigned TV1 or TV2 to take in the spring of their 1L year.[50] Eighty-three of these 1Ls were retested in the fall of their 2L year using whichever version of the test they had not taken before.[51] The mean score for their second semester (spring of 1L year) was 7.88 out of 14 and in their third semester (fall of 2L year) it was 7.67, showing that although the drop in critical reading was not statistically significant, it did not improve with their time spent in law school classes.[52]

Additionally, in Phase 2, 63 third-year law students who had taken the TV1 test as first year law students volunteered to take TV2 during spring of their 3L year.[53] The mean scores for students who took the tests their first and third years were also not statistically different, "indicating that students' case reading and reasoning skills do not improve as a result of [traditional] law school instruction."[54]

The aggregate averages for all tests in all phases hovered around 60%, even for repeat test-takers with more law school instruction.[55] The final conclusion was that students needed help with critical reading skills.[56]

In addition to the Critical Reading Assessment Study, there is evidence of a significant decline in reading skills in the last 20 years in the general population, and we can extrapolate that law students are not immune, especially in light of the anecdotal evidence.[57] The amount that individuals read declined from 1982 to 2002 at an accelerated rate.[58] This decline is

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47 *Id.* at 1, 4-5.
48 *Id.* at 1.
49 *Id.*
50 *Id.* at 1, app.1-2 (showing the cases provided to the students who were in the study).
51 *Id.* at 14.
52 *Id.* at 15.
53 *Id.* at 1. The researchers also gave a truncated version of both TV1 and TV2 to 30 students that used think-aloud protocols. *Id.* at 21-22.
54 *Id.* at 1, 6.
55 *Id.* at 39.
56 *Id.* at 39.
57 Dalton, *Their Brains on Google*, *supra* note 8, at 430.
58 NAT'L ENDOWMENT FOR THE ARTS, READING AT RISK: A SURVEY OF LITERARY READING IN AMERICA 26 (2004), https://www.arts.gov/sites/default/files/ReadingAtRisk.pdf.

consistent across all education levels.[59] Since then, literary reading has continued to decline for quite some time now.[60] Students generally "seem agnostic about reading beyond a literal level" for simple comprehension.[61]

Although reading comprehension is a necessary predicate for critical reading, students' adeptness at reading comprehension has been declining, too. Research demonstrates that college students lack experience reading dense, complex material and struggle with critical reading.[62] In one study, 41% of university faculty reported that their college-level students had poor reading comprehension.[63] In addition, researchers recently replicated an empirical study done in 1961 that tested high school students' reading skills and found that there was a 19% decline in reading comprehension from 1960 to 2011 in high school students.[64] From 1972 to 2016, the average critical reading score on the SAT fell from 36 points, from 531 to 494.[65] The average critical reading score on the SAT fell every year of high school for the same national class of test takers their sophomore (540), junior (506), and senior (486) years.[66] Juniors who scored above 580 on the critical reading portion of the SAT—the highest scores—scored lower, on average, in critical reading when they retook the SAT their senior year.[67]

The Law School Admission Council (LSAC) says it tests "reading comprehension" on the Law School Admissions Test (LSAT), but the definition sounds similar to the skills required for critical reading.

> Reading Comprehension questions assess the ability to read, with understanding and insight, examples of lengthy and complex materials similar to those commonly encountered in law school. Law school and the

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59 *Id.* at xi.

60 Christopher Ingraham, *The Long, Steady Decline of Literary Reading*, WASH. POST (Sept. 7, 2016), https://www.washingtonpost.com/news/wonk/wp/2016/09/07/the-long-steady-decline-of-literary-reading/.

61 Cavanaugh et al., *supra* note 34, at 383.

62 Montana, *supra* note 5, at 435-36; Cooper, *supra* note 26, at 583.

63 Cavanaugh et al., *supra* note 34, at 383.

64 Alexandra N. Spichtig et al., *The Decline of Comprehension-Based Silent Reading Efficiency in the United States: A Comparison of Current Data With Performance in 1960*, 51 READING RES. Q. 239, 252 (2016), http://onlinelibrary.wiley.com/doi/10.1002/rrq.137/full. Teachers in middle schools are also running into the problem of students being unable to think about what they are reading enough to create notes beyond copying the text. Teresa Diaz, *A Notable Process: Teaching Critical Reading Via Note-Taking (Making)*, LIBRARY MEDIA CONNECTION (Jan./Feb. 2014).

65 THE COLLEGE BOARD, 2016 COLLEGE-BOUND SENIORS TOTAL GROUP PROFILE REPORT, at 1 (2016), https://reports.collegeboard.org/pdf/total-group-2016.pdf.

66 *Id.* at 1.

67 THE COLLEGE BOARD, PERCENTAGE OF STUDENTS WITH SENIOR YEAR SCORE GAIN OR LOSS (2016 COHORT) (2016), https://secure-media.collegeboard.org/digitalServices/pdf/sat/sat-senior-year-score-gain-percentage-2016.pdf; Natalie Kitroeff & Janet Lorin, *Students Bombed the SAT this Year, in Four Charts* (Bloomberg Sept. 2, 2015), https://www.bloomberg.com /news/articles/2015-09-03/students-bombed-the-sat-this-year-in-four-charts (lamenting that the scores on the reading section were the worst in decades).

> practice of law revolve around extensive reading of densely written and argumentative texts. This reading must be careful, distinguishing precisely what is said from what is not said. It involves comparison, analysis, synthesis, and application. It involves drawing appropriate inferences, and applying ideas and arguments to new contexts.[68]

The LSAC does not separate out the average reading comprehension scores from the other two categories on the LSAT, which would be helpful to gauge a change in critical reading skills over time.[69] But the evidence from high school through college and beyond, coupled with an abundance of anecdotal evidence from legal scholars, supports the notion that critical reading is a problem of some sort for law students.

As this information indicates, the lack of critical reading skills—like many other points of student underpreparedness[70]—is systemic. The next section looks at the three main reasons why this is so.

B. Reasons for the Decline

The various causes of poor critical reading skills in law students have been talked about ad nauseam in other sources but are worth summarizing here to demonstrate how difficult it would be to formulate just one reason for the lack of critical reading skills in incoming law students. The major categories of causes have been identified as 1) some social characteristics that define the generation to which law students generally belong; 2) frequent use of digital technology; and 3) alterations in traditional school pedagogical strategies.

1. Society/Culture as a Cause

The number of Millennials—those born from early 1981 to 1996—who have filled law schools for almost two decades are dwindling.[71] The oldest of Generation Z—those born from 1995 to 2010—who started law school as early 2017 have begun replacing Millennials as the bulk of our incoming law

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68 *About the Law School Admission Test*, LAW SCHOOL ADMISSION COUNCIL, http://www.lsac.org/docs/default-source/publications-(lsac-resources)/about-the-lsat.pdf (last visited Oct. 21, 2018).

69 *Id.*

70 Susan Stuart & Ruth Vance, *Bringing a Knife to a Gunfight: The Academically Underprepared Law Student & Legal Education Reform*, 48 VALPARAISO U. L. Rev. 41, 46 (2013).

71 *See* Graham, *supra* note 8, at 12 & n. 59; Michael Dimock, *Defining Generations: Where Millennials End and Post-Millennials Begin*, PEW RESEARCH CENTER, http://www.pewresearch.org/fact-tank/2018/03/01/defining-generations-where-millennials-end-and-post-millennials-begin/ (last visited Oct. 17, 2018).

students.[72] To understand Generation Z's adeptness with critical reading, it will be helpful to review some general characteristics of the group.[73]

The parents who raised Generation Z students are largely Generation Xers.[74] These Generation Xers instilled the value of individual responsibility and independence in their children.[75] They taught Generation Zers to be pragmatic.[76] Eighty-eight percent of Generation Z say they are extremely close to their parents.[77] They see their parents as trusted mentors and more than half of them consult their parents on important matters.[78] There has been no research done yet, though, that can shed light on how Generation Z's parents may influence their reading.

Generation Zers were the first to enter adolescence with smartphones, and they admit that they are probably addicted to those smartphones.[79] As of 2018, about 95% of teenagers in the United States own or have access to a smartphone: "Smartphone ownership is nearly universal among teens of different genders, races and ethnicities and socioeconomic backgrounds."[80] Almost half of Generation Zers are online for ten or more hours per day—what amounts to all of their leisure time—leaving little time to develop their deep reading skills.[81]

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72 Graham, *supra* note 8, at 12 & n. 59 (stating that the median age for law school applicants is twenty-five, with about half the applicants being between the ages of twenty-two and twenty-four); *see* COREY SEEMILLER & MEGHAN GRACE, GENERATION Z GOES TO COLLEGE 6 (2016).

73 As with all generalizations, not all incoming law students will embody every characteristic of Generation Z, and it is important to recognize and validate differences in individuals among any group. The trends and behaviors discussed here are what researchers have identified as tendencies of the group, and this Article is concerned with representative distinctions between generations, not the outliers. Most importantly, nothing in this broad description of a whole generation is intended to be derogatory. Indeed, my oldest child belongs to Generation Z, and I am rather proud and fond of her.

74 SEEMILLER & GRACE, *supra* note 72, at 7.

75 *Id.*; Shlomo Wiesen, *Time Travelling for Answers: How Generation-X Influenced Generation-Z Teens*, SOCIAL MEDIA WEEK (November 24, 2015), https://socialmediaweek.org/blog/2015/11/time-travelling-answers-generation-x-influenced-generation-z-teens/.

76 Josh Sanbum, *Here's What MTV is Calling the Generation After Millennials*, TIME (Dec. 1, 2015, 1:28 PM), https://time.com/4130679/millennials-mtv-generation/?xid=homepage.

77 SEEMILLER & GRACE, *supra* note 72, at 157.

78 *Id*.

79 Amy Joyce, *Teens Say They're Addicted to Technology. Here's How Parents Can Help*, WASH. POST (May 3, 2016), https://www.washingtonpost.com/news/parenting/wp/2016/05/03/teens-say-theyre-addicted-to-technology-heres-how-parents-can-help/?noredirect=on&utm.

80 Kurt Schlosser, *New Research Finds 95% of Teens Have Access to a Smartphone, 45% Online 'Almost Constantly'*, GEEKWIRE (June 1, 2018, 10:54 AM), https://www.geekwire.com/2018/new-research-finds-95-teens-access-smartphone-45-online-almost-constantly/; *see also* Jean M. Twenge, *Have Smartphones Destroyed a Generation*?, ATLANTIC (Sept. 2017), https://www.theatlantic.com/magazone/archive/2017/09/has-the-smartphone-destroyed-a-generation/534198/ (finding that trends surrounding smartphone use appear "among teens poor and rich; of every ethnic background; in cities, suburbs, and small towns").

81 Graham, *supra* note 8, at 49; *see* Twenge, *supra* note 80.

As smartphone use has risen, however, reading, even on e-readers, has declined amongst Generation Z,[82] and teenagers in the United States are less likely to read for fun as they grow older.[83] Data from the National Center for Education Statistics indicates that "one third of 13-year-olds and 45% of 17-year-olds rarely or never engage in recreational reading of longer texts," leading to a decline of Generation Z's reading skills generally.[84] Critical reading is not a habit or a priority for Generation Z.[85] Being forced to read critically in law school when they are not used to reading much at all will be a challenge for them.

Generation Z generally ties the importance of reading to its incidental use while utilizing technology. Generation Zers prefer to obtain new knowledge from watching YouTube videos rather than reading.[86] Marketers say that if advertisements "don't communicate in five words and a picture, [it] will not reach [Generation Z]."[87] Whether because of technology or the changes in education or something else, Generation Z has shorter attention spans for traditional forms of learning, including reading.[88] It is clear that incoming law students with these preferences will generally struggle to read in the depth with which they will need to in law school.

Generation Z prefers texting over every other form of communication,[89] but they speak in emoticons and emojis.[90] These represent subtext with which they create context for their communications.[91] Generation Z also communicates using other technology through images.[92] By replacing text with pictures in much of their own communication, they are less prepared for the rigors of using complicated legal text to infer context. And the more Generation Z students communicate in sound bites, tweets, texts, and other short bursts of information, the more they lose patience with more complex

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82 JEAN M. TWENGE, IGEN: WHY TODAY'S SUPER-CONNECTED KIDS ARE GROWING UP LESS REBELLIOUS, MORE TOLERANT, LESS HAPPY—AND COMPLETELY UNPREPARED FOR ADULTHOOD 60 (2015).

83 Graham, *supra* note 8, at 61.

84 Spichtig et al., *supra* note 64, at 254.

85 Graham, *supra* note 8, at 61.

86 SEEMILLER & GRACE, *supra* note 72, at 75.

87 Alex Williams, *Move Over Millennials, Here Comes Generation Z*, N.Y. TIMES (Sept. 18, 2015), https://www.nytimes.com/2015/09/20/fashion/move-over-millennials-here-comes-generation-z.html.

88 *See* SEEMILLER & GRACE, *supra* note 72, at 180-81; Sparks & Honey, *Meet Generation Z: Forget Everything You Learned About Millennials* (June 17, 2014), https://www.slideshare.net/sparksandhoney/generation-z-final-june-17.

89 SEEMILLER & GRACE, *supra* note 72, at 58-59.

90 Sparks & Honey, *supra* note 88.

91 *Id.*

92 *Id.* at 37.

information and "lose the ability to analyze things with any depth or nuance."[93]

Much of Generation Z also believes everything they read on the internet is true and most ignore source references to information online.[94] Because they are not used to critically reading online, they are less likely to read critically in other instances.[95]

Generation Z students are multitaskers.[96] They routinely use technology—many times on multiple devices—while completing other tasks such as homework.[97] So simply telling new law students they need to critically read a case does not, to them, necessarily mean turning off electronics. And multitasking does not always have to involve technology. It could also mean doing homework in the car on the way to swim practice from piano lessons.[98] Society glorifies multitasking, reinforcing to Generation Z that it is not only acceptable, but praise-worthy.[99] For example, employers consistently list multitasking as one of the highest valued qualities employees can have.[100]

Multitasking can cause high cognitive loads and overwhelm our working memory.[101] When we do things simultaneously we are in actuality shifting our attention back and forth between different tasks.[102] And that shift

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93 *Generation Z and Learning*, PRELUDE CONSULTING, https://www.prelude-team.com/articles/generation-z-and-learning (last visited Aug. 24, 2019) (quoting Dr. Elias Aboujaoude, Director of Stanford University's Impulse Control Disorders Clinic at Stanford University).

94 Carol Affleck, *Today's Youth: The Rewired Generation*, BIZCOMMUNITY.COM (June 11, 2013), http://www.bizcommunity.com/Article/196/371/94748.html. There have been no studies done on whether this is true for law students of Generation Z in particular. All that can be said is that this applies to many in that age group.

95 *Id.*

96 SEEMILLER & GRACE, *supra* note 72, at 58-59.

97 SEEMILLER & GRACE, *supra* note 72, at 59; Montana, *supra* note 5, at 440.

98 *See* Claudia Wallis, *The Multitasking Generation*, TIME MAGAZINE (Mar. 19, 2006), http://www.fritzhubbard.org/words/The_Multitasking_Generation.pdf.

99 Will Manley, *Digitized to Distraction*, AMERICAN LIBRARIES (Jan. 8, 2013), https://americanlibrariesmagazine.org/2013/01/08/digitized-to-distraction/.

100 *E.g.* Alison Doyle, *Important Multitasking Skills Employers Value*, THE BALANCE CAREERS (June 25, 2019), https://www.thebalancecareers.com/multitasking-skills-with-examples-2059692.

101 Melina R. Uncapher et al., *Media Multitasking and Memory: Differences in Working Memory and Long-Term Memory*, 23 PSYCHONOMIC BULL. REV. 483, 489 (2016); David L. Strayer & Jason M. Watson, *Supertaskers and the Multitasking Brain*, 23 SCI. AMER. MIND 22, 24 (2012); Karin Foerde, Barbara K. Knowlton, & Russell A. Poldrack, *Modulation of Competing Memory Systems by Distraction*, 103 PROCEEDINGS NAT'L ASS'N SCI. 11778, 11781 (2006). *But see* Meredith Minear et al., *Working Memory, Fluid Intelligence, and Impulsiveness in Heavy Media Multitaskers*, 20 PSYCHONOMIC BULL. REV. 1274, 1280 (2013) (finding "no evidence to support the contention that [high media multitaskers] are worse in a multitasking situation such as task switching or that they show any deficits in dealing with irrelevant or distracting information, when compared with light media multitaskers").

102 Strayer & Watson, *supra* note 101, at 24; Adam Gorlick, *Media Multitaskers Pay Mental Price, Stanford Study Shows*, STAN. REP., (Aug. 24, 2009), https://news.stanford.edu/2009/08/24/multitask-research-study-082409/.

comes with a price. Heavy multitaskers all performed worse on cognitive tests, showing less control over working memory and less ability to concentrate.[103] Multitasking is also linked to poorer classroom learning and poorer academic performance.[104] If students are distracted while learning new information, their retention is poorer.[105] Neural patterns strengthened by attention cannot be forged as strongly when we multitask.[106] So improving our ability to multitask actually hurts our ability to think deeply and creatively by making us more likely to rely on conventional ideas and solutions.[107] Multitasking causes a decrease in mental efficiency, increases the likelihood of making mistakes, decreases the likelihood of remembering material the person is trying to learn, and causes the person to learn using the portion of their brain that is least conducive to remembering long-term.[108] Multitasking with media technologies rather than with, say, a pen and paper, leads to even poorer recall of information.[109] So when Generation Z students multitask, it is more difficult for them to critically read; they rely on conventional ideas instead of thinking deeply about the material.

When readers are interrupted, research has shown that they can recognize and recall information from discrete passages,[110] but their ability to "connect and synthesize information across the [entire] passage" is impaired.[111] Because multitasking is in reality being interrupted multiple times, students may be familiar with the information, but they do not have a substantial command of the whole text needed for critical reading.[112] That would severely hamper a law student's ability to synthesize rules across multiple opinions—a common legal task that requires critical reading.

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103 Uncapher et al., *supra* note 101, at 483, 489; Gorlick, *supra* note 102.

104 Kep Kee Loh & Ryota Kanai, *How has the Internet Reshaped Human Cognition?* 22 NEUROSCIENTIST 506, 509-10 (2016).

105 Foerde, Knowlton, & Poldrack, *supra* note 101, at 11781-82.

106 *See* Dalton, *Their Brains on Google*, *supra* note 8, at 420-21; Foerde, Knowlton, & Poldrack, *supra* note 101, at 11781-82. The portion of the brain that learns habits—tasks associated with automaticity, such that performance does not require effortful attention or working memory—is not effected by distractions. *Id.*

107 NICHOLAS CARR, THE SHALLOWS: WHAT THE INTERNET IS DOING TO OUR BRAINS 140 (2011).

108 George, *supra* note 38, at 183. Interestingly, scientists recently discovered a small subset of the population (2.5%) who are super-multitaskers—that is they can multitask without sacrificing performance on either task. Strayer & Watson, *supra* note 101, at 26. They found that these "supertaskers" had a high concentration of neural activity in the frontal lobe. *Id.* As discussed later, digital natives' frontal lobes—the part of the brain associated with critical reading and thinking—is less developed, however, making it less-likely that digital natives are in this category of "supertaskers." *See infra* note 150.

109 Loh & Kanai, *supra* note 104, at 509-10.

110 Cyrus K. Foroughi, *Interruptions Disrupt Reading Comprehension*, 144 J. EXPERIMENTAL PSYCHOL. 704, 705 (2015).

111 *Id.* at 708.

112 *See id.*

2. Digital Technology as a Cause

A large chunk of causes stem from law students' near constant use of technology. Most Generation Z students are digital natives, and thus the bulk of incoming law students are digital natives.[113] Digital natives are those who have used multiple forms of technology from a young age—they have never known a world without it.[114] As a group, Generation Z is an even better example of digital natives than Millennials were because Generation Z members have "always lived in a virtual and physical reality," and when asked, 45% say that they use the internet "almost constantly."[115] Generation Z feels "tethered to technology."[116] So in order to understand the depth of those causes linked to technology, it is crucial to understand that this incessant use of digital technology is physically altering digital natives' brains by changing the patterns of their neural pathways.[117]

A little knowledge of biology will help explain how digital technology is altering digital natives' brain.[118] Neurons control all thoughts and memories in our brains.[119] Each neuron is made up of a cell body, dendrites, and an axon.[120] The dendrites are like tree branches extending from the neuron and they receive messages from other nerve cells; then those nerve signals pass through the cell body to the axon.[121] The axon releases neurotransmitters that then travel to other cells' dendrites through synapses, which is a space between the axon and dendrites of other neurons where nerve signals pass from one neuron to another.[122] So neurons communicate with one another through the flow of neurotransmitters across synapses.[123] On average, a single neuron makes 1000 synaptic connections, and these tie

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113 *See* SEEMILLER & GRACE, *supra* note 72, at 1, 6 (2016); Graham, *supra* note 8, at 12, n.59.

114 Dalton, *Their Brains on Google*, *supra* note 8, at 426-27.

115 SEEMILLER & GRACE, *supra* note 72, at 7; Monica Anderson & Jingjing Jiang, *Teens, Social Media & Technology*, PEW RESEARCH CENTER, (May 31, 2018), http://www.pewinternet.org/ 2018/05/ 31/teens-social-media-technology-2018/; Twenge, *supra* note 80 (comparing Generation Zs' and Millennials' technology use).

116 Mary Ann Becker, *Understanding the Tethered Generation: Net Gens Come to Law School*, 53 DUQ. L. REV. 9, 10 (2015).

117 CARR, *supra* note 107, at 116; *see* SHARON BEGLEY, TRAIN YOUR MIND, CHANGE YOUR BRAIN 159 (2007).

118 Although complete for the focus of this Article, this is a highly truncated version of neuroscience.

119 *Brain Basics: Know Your Brain*, NAT'L INST. OF NEUROLOGICAL DISORDERS & STROKE, www.ninds.nih.gov/Disorders/Patient-Caregiver-Education/Know-Your-Brain (last visited Oct. 17, 2018); *see* NAT'L RESEARCH COUNCIL, HOW PEOPLE LEARN: BRAIN, MIND, EXPERIENCE, SCHOOL 116 (John D. Bransford et al. eds. expanded edition 2000) [hereinafter HOW PEOPLE LEARN].

120 NORMAN DOIDGE, M.D., THE BRAIN'S WAY OF HEALING 7 (2015); *see* HOW PEOPLE LEARN, *supra* note 119, at 116.

121 DOIDGE, *supra* note 120, at 7; *see* HOW PEOPLE LEARN, *supra* note 119, at 116.

122 DOIDGE, *supra* note 120, at 7; JEFFREY M. SCHWARTZ, THE MIND AND THE BRAIN: NEUROPLASTICITY AND THE POWER OF MENTAL FORCE 103-04 (2002).

123 SCHWARTZ, *supra* note 122, at 103-05.

the neurons together in a "mesh circuit," which contains "our thoughts, memories, and emotions."[124]

These neural connections are "plastic," meaning the connections between synapses can strengthen or weaken.[125] The more an experience occurs, the stronger the neural pathways become and the more space it takes up in the brain; conversely, if an experience stops occurring, the neural pathways are dissolved and the brain makes way for new pathways to form.[126] In other words, the experiences individuals have or their lack of experiences grow or shrink portions of their brain, respectively.[127] Scientists summarize this "core law of neuroplasticity" as "neurons that fire together, wire together."[128]

This neural reorganization does not stop—plasticity is an ongoing state of the human nervous system throughout our whole lives.[129] Both mental and physical activity can re-wire neural pathways, so an individual's behavior, environment, thought processes, or bodily injury can all change the physical structure of our brains.[130] Additionally, these neural links occur whether the habit is a good one or a bad one.[131] "Evolution has given us a brain that can literally change its mind—over and over again."[132]

So what does this have to do with critical reading? Using digital technology instills a shallower mode of processing information in four ways: 1) it interrupts the development of deep reading skills by increasing the brain circuitry necessary for using technology, which decreases brain power needed for deep reading; 2) it increases the cognitive load, which reduces

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124 CARR, *supra* note 107, at 20; SCHWARTZ, *supra* note 122, at 105.

125 Alvaro Pascual-Leone et al., *The Plastic Human Brain Cortex*, 28 ANN. R. NEUROSCIENCE 377, 379 (2005); Bogdan Draganski et al., *Neuroplasticity: Changes in Grey Matter Induced by Training*, 427 NATURE 311, 311 (2004) (finding that the neural connections in subjects' brains changed when they learned a new skill (juggling), indicating that learning-induced plasticity is reflected at the brain's structural level); *see* HOW PEOPLE LEARN, *supra* note 119, 116-17.

126 SCHWARTZ, *supra* note 122, at 103-04; NORMAN DOIDGE, THE BRAIN THAT CHANGES ITSELF: STORIES OF PERSONAL TRIUMPH FROM THE FRONTIERS OF BRAIN SCIENCE 59 (2007); *see* Pascual-Leone et al., *supra* note 125, at 379-80 (explaining a study in which subjects practiced piano pieces over and over, changing their neural connections, but after stopping for four weeks, the neural connections went back to the baseline).

127 Pascual-Leone et al., *supra* note 125, at 396; *see* HOW PEOPLE LEARN, *supra* note 119, at 119-21 (explaining various experiments on rats that show learning increased synaptic connections and that rats without learning opportunities had less connections).

128 DOIDGE, *supra* note 120, at 7.

129 SCHWARTZ, *supra* note 122, at 179; Pascual-Leone et al., *supra* note 125, at 379.

130 CARR, *supra* note 107, at 29; Pascual-Leone et al., *supra* note 125, at 379-80; Draganski et al., *supra* note 125, at 311; Alvaro Pascual-Leone et al., *Modulation of Muscle Responses Evoked by Transcranial Magnetic Stimulation During the Acquisition of New Fine Motor Skills*, 74 J. NEUROPHYSIOLOGY 1037, 1044 (1995).

131 CARR, *supra* note 107, at 34; *see* Pascual-Leone et al., *supra* note 125, at 379.

132 CARR, *supra* note 107, at 34.

learning; 3) it encourages poor habits not conducive to critical reading; and 4) it is robbing Generation Z of downtime needed to process information.[133]

First, technology use changes digital natives' neural connections, and the neural connections in their brain regions associated with traditional learning methods are less developed.[134] A study done by an expert on neuroscience and human behavior, Dr. Gary Small, compared neural activity of those who had internet browsing experience and those who did not.[135] Of those who had experience browsing, when they browsed the internet, they showed increased brain activity in a different part of the brain than they used for reading in hard copy; this activity indicated that they were engaged in a richer sensory experience when browsing.[136] Those who were new to internet browsing showed the same brain activity whether they were internet browsing or reading in hard copy.[137] Then Dr. Small conducted another experiment with those unfamiliar with internet browsing, and he found that after only five days, the brain patterns of those subjects looked identical to those who had a history of web browsing.[138] Taken together, these studies show that the internet searching experience alters the neural connections that involve information processing, specifically the neural connections associated with reading.[139]

Technology's constant sensory and cognitive stimuli "is repetitive, intense, interactive, and addictive."[140] Digital natives are continually scrolling and clicking through the internet or other digital device—specific physical interactions that have corresponding sensory stimuli.[141] But the neural connections those experiences make are different than the neural connections that would occur if the students were reading a hardcover book.[142] Maryanne Wolf and Mirit Barzillia, two reading experts, thus reason that using technology causes the neural pathways in the areas of the brain that help deep reading to weaken and thus its use impairs understanding.[143]

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133 Loh & Kanai, *supra* note 104, at 507.

134 GARY SMALL & GIGI VORGAN, IBRAIN: SURVIVING THE TECHNOLOGICAL ALTERATION OF THE MODERN MIND 26 (2008); Dalton, *Their Brains on Google*, *supra* note 8, at 429.

135 Gary W. Small et al., *Your Brain on Google: Patterns of Cerebral Activation During Internet Searching*, 17 AM. J. GERIATRIC PSYCHOLOGY 116, 117-18 (2009).

136 *Id*. at 121.

137 *Id*.

138 SMALL & VORGAN, *supra* note 134, at 42.

139 Loh & Kanai, *supra* note 104, at 509.

140 CARR, *supra* note 107, at 116; Small et al., *supra* note 135, at 125.

141 CARR, *supra* note 107, at 116; SMALL & VORGAN, *supra* note 134, at 24.

142 CARR, *supra* note 107, at 116; Cavanaugh et al., *supra* note 34, at 375, 382.

143 Maryanne Wolf & Mirit Barzillai, *The Importance of Deep Reading*, 66 EDUC. LEADERSHIP 32 (2009). *But see* Loh & Kanai, *supra* note 104, at 508-09 (asserting that the two studies focused on whether shallow information processing disrupts deep reading skills are not strong enough support for this assertion and more research is needed to prove a correlation).

The problem lies in the reduction of neural connections and physical space in digital natives' brain regions associated with traditional learning methods.[144] A study of London cabbies published in 2000 demonstrated that adults can alter the basic anatomy of their brains—not just the connections between tiny neurons—simply through their repeated experiences.[145] Eleanor Maguire compared the size of London cabbies' hippocampuses—an area of the brain—to adults' brains who were not in the same profession.[146] She chose cabbies because they notoriously must store complex maps of the London city streets in their brains.[147] She found that cabbies universally had larger posterior hippocampuses and smaller front portions than other adults and that the longer a cabbie had been working as such, the larger the posterior portion of the hippocampus was.[148] Although this was the first study to demonstrate that frequent experiences and knowledge encroach on brain space normally used for something else, it was not the last.

Digital natives' frontal lobes—the part of the brain associated with critical reading and thinking—is less developed.[149] As one example, multiple studies show that expert video-gamers have reduced activity in the frontal-lobe regions in the brain, even if their brains show growth in the area of the brain that correlates with better visual working memory performance and dealing with attention demands.[150] Having less developed frontal lobes may interrupt the development of deep reading skills.[151] Because of ongoing competition for brain real estate, activities the brain repeatedly experiences steal space in the brain from other areas.[152] What we are asking digital native students to do when we ask them to critically read then, is to "stitch together a 'reading circuit' (i.e. years of foraging, grafting, borrowing, and collating compartmentalized neurocircuitry integrated in proper working order) *from scratch and absent a roadmap*."[153]

A second factor that contributes to shallow information processing is that digital technology overwhelms our cognitive load.[154] "Cognitive load" refers to the amount of information that flows into our working memory at any given time.[155] When the cognitive load exceeds our minds' ability to

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144 SMALL & VORGAN, *supra* note 134, at 26; Dalton, *Their Brains on Google*, *supra* note 8, at 429.
145 SCHWARTZ, *supra* note 122, at 252.
146 *Id*. at 250-51.
147 *Id*. at 250.
148 *Id*. at 251.
149 SMALL & VORGAN, *supra* note 134, at 186; Newell, *supra* note 7, at 781; Affleck, *supra* note 94; *see* Loh & Kanai, *supra* note 104, at 513.
150 Loh & Kanai, *supra* note 104, at 513.
151 Cavanaugh et al., *supra* note 34, at 390; *see* Wolfe & Barzillai, *supra* note 143, at 32.
152 DOIDGE, *supra* note 120, at 11.
153 Cavanaugh et al., *supra* note 34, at 384 (emphasis in original).
154 Loh & Kanai, *supra* note 104, at 516.
155 CARR, *supra* note 107, at 125; *see* John Sweller, *Cognitive Load Theory*, *in* 55 PSYCHOLOGY OF LEARNING AND MOTIVATION 57 (2011).

store information in the working memory, we cannot retain any more information.[156] Consequently, our ability to learn is impaired when our cognitive load is too high.[157]

Reading on digital devices has a multitude of effects, the least obvious of which "is what we *lose* when we read on digital devices" because of the high cognitive load.[158] Online reading increases the cognitive load in individuals' working memory by forcing readers to consider hypertext links and ads.[159] Reading online also increases cognitive load by forcing readers to create context where there is no physical space for it.[160] In contrast, readers who read on paper use the three dimensional space—like stacking related papers in one pile—to lighten their cognitive load so that they can save their energy for thinking and analyzing what they read.[161] Paper readers use spatial cues—the layout of a document, stacks, files, how far away documents are from them, etc.—to organize information and see relationships between concepts in the documents easier.[162] This increase in cognitive load contributes to our weakening ability to comprehend and retain what we read on digital technology.[163] Because many of our law students research and read legal materials online, it is more difficult for them to read critically because of this increased cognitive load.

Third, digital technology use encourages habits that are not conducive to critical reading. Because of consistent technology use, digital natives are skilled at non-linear and selective reading, keyword spotting, scanning behaviors, and "power browsing."[164] Power browsing involves "search[ing] for key terms and skim[ming] the text surrounding the key terms instead of reading line by line."[165] Because critical reading involves careful study of word choices and sentence structure, this loss of detail will inevitably impact students' ability to critically read. Moreover, power browsing contributed to the average attention span decreasing by half in the last ten years.[166] Generation Z students now have an average attention span of only 8

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156 CARR, *supra* note 107, at 125; *see* Sweller, *supra* note 155, at 63.

157 CARR, *supra* note 107, at 125; *see* Sweller, *supra* note 155, at 63.

158 Mary Beth Beazley, *Writing for a Mind at Work: Appellate Advocacy and the Science of Digital Reading*, 54 DUQ. L. REV. 415, 423 (2016).

159 Cavanaugh et al., *supra* note 34, at 379; Mary Beth Beazley, *Writing (and Reading) Appellate Briefs in the Digital Age*, 15 J. APP. PRAC. & PROC. 47, 52 (2014).

160 Beazley, *supra* note 158, at 429-30.

161 *Id*. at 423-24.

162 *Id*. at 424.

163 Loh & Kanai, *supra* note 104, at 507; *see* Cavanaugh et al., *supra* note 34, at 375.

164 Steel et al., *supra* note 24, at 211; Montana, *supra* note 5, at 443; Loh & Kanai, *supra* note 104, at 507.

165 Dalton, *Bridging the Digital Divide*, *supra* note 7, at 182.

166 *See* Neil Vidyarthi, *Attention Spans Have Dropped from 12 to 5 Minutes—How Social Media Is Ruining Our Minds*, ADWEEK (Dec. 14, 2011), https://www.adweek.com/digital/attention-spans-have-dropped-from-12-minutes-to-5-seconds-how-social-media-is-ruining-our-minds-infographic/.

seconds,[167] a far cry from the hours needed to critically read statutes and opinions when researching an issue.

Additionally, digital natives often substitute gathering a high volume of information—something they can do quickly online—for critically evaluating the information.[168] Reading scholars question whether the immediacy of overwhelming amounts of information is replacing students' will to critically read.[169] For example, most students do not understand that amassing an excess of information still may not lead to the right answer.[170] Digital natives often "mistake their familiarity with [online sources] for an ability to critically read and comprehend information."[171] In fact, studies have shown that digital readers are more over-confident about how well they learn than those who studied paper documents, and that digital readers failed to study long enough.[172] Digital natives have developed a passive relationship with information and expect instant gratification with little effort.[173] Moreover, the instant availability of information increases the probability that digital natives will leave research to the last minute, "leaving less time to critically examine the information."[174] And Generation Z in particular does not research by focusing on the process of knowledge acquisition—something needed for critical reading—but on quickly finding an answer for an assignment.[175]

Finally, digital technology prevents digital natives from having down time and reduces the stamina needed to deeply read.[176] Forty-one percent of Generation Zers spend more than three hours on computers for non-school related purposes, and some indicate that they are online nearly ten hours per day total.[177] Using digital technology places users' brains in constant stimulation, leading to a constant "heightened state of stress."[178] The brain needs downtime, though, to synthesize information and make connections between ideas—both of which are essential for critically reading texts.[179] Indeed, "ample amounts of dedicated slow time" is crucial for critical

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167 Wiesen, *supra* note 75.

168 Dalton, *Bridging the Digital Divide*, *supra* note 7, at 181.

169 WOLF, *supra* note 27, at 225.

170 Dalton, *Bridging the Digital Divide*, *supra* note 7, at 181.

171 Curtis & Karp, *In a Case, on the Screen*, *supra* note 4, at 250.

172 Rakefet Ackerman & Morris Goldsmith, *Metacognitive Regulation of Text Learning: On Screen Versus on Paper*, 17 J. EXPERIMENTAL PSYCHOL. 18, 28-29 (Mar. 2011).

173 SEEMILLER & GRACE, *supra* note 72, at 27.

174 *Id.*

175 *Id.* at 174.

176 Cavanaugh et al., *supra* note 34, at 379.

177 Sparks & Honey, *supra* note 88, at 39; SEEMILLER & GRACE, *supra* note 72, at 66.

178 Dalton, *Their Brains on Google*, *supra* note 8, at 423.

179 Matt Richtel, *Growing Up Digital, Wired for Distraction*, N.Y. TIMES (Nov. 21, 2010), http://nytimes.com/2010/11/21/technology/21brain.html?pagewanted=all&_r=0; *see* Wallis, *supra* note 98.

reading.[180] As one reading scholar put it, "[t]hese students are not illiterate, but they may never become true expert readers" due to the overwhelming lack of "time to think for themselves."[181]

Generation Z's increased screen time also contributes to the lack of downtime and stamina because of the corresponding increased sleep deprivation.[182] A recent study found that Generation Z members who used their cellphones near bedtime were 79% less likely to get the recommended nine hours of sleep than others who did not use their smartphones within that time frame.[183] The light emitted from the smartphones can affect arousal and make it more difficult to fall asleep, as well as the screen time taking up more sleep time.[184] When people are sleep deprived before a learning session, they will remember 40% less information than others who were not.[185] And the more attention and working memory needed for a task—the more complex the task—the larger the performance deficits from lack of sleep will be.[186] Not only is sleep necessary to learn the new information, but it is needed to gain insight into what we learn.[187] Thus it is reasonable to assume that students who are not used to getting enough sleep will have trouble summoning the energy and stamina needed to critically read law texts.

In short, the reading done day in and day out on technology "promotes cursory reading, hurried and distracted thinking, and superficial learning."[188] Consequently, digital natives "are reading at a superficial level, are distracted thinkers, exhibit diminished concentration, and only gain a shallow understanding of material."[189] The result is that Generation Z's reading on a screen does not prepare them for reading complex, dense legal text.[190]

3. Prior School Experiences as a Cause

Many scholars criticize law students' prior schooling experiences as contributing to poor critical reading skills.[191] Beginning in secondary education, the focus on preparing for standardized tests teaches students that

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180 Cavanaugh et al., *supra* note 34, at 388.

181 WOLF, *supra* note 27, at 225.

182 Jean M. Twenge et al., *Decreases in Self-Reported Sleep Duration Among U.S. Adolescents 2009-2015 and Association with New Media Screen Time*, 39 SLEEP MED. 47, 50 (2017).

183 *Id*. at 47, 50.

184 *Id*. at 48.

185 Matthew Walker & Robert Stickgold, *Sleep, Memory and Plasticity*, 10 ANNUAL REV. PSYCHOL. 139, 143-44 (2006).

186 Cassandra Lowe et al., *The Neurocognitive Consequences of Sleep Restriction: A Meta-analytic Review*, 80 NEUROSCIENCE & BIOBEHAVIORAL REV. 586, 586 (2017).

187 Ullrich Wagner et al., *Sleep Inspires Insight*, 427 NATURE 352, 352-55 (2004).

188 CARR, *supra* note 107, at 115-16; Dalton, *Bridging the Digital Divide*, *supra* note 7, at 182.

189 Dalton, *Their Brains on Google*, *supra* note 8, at 429.

190 Montana, *supra* note 5, at 443.

191 *See* Montana, *supra* note 5, at 434-39 (for a wonderful break down of the scholarship in this area).

there is one right answer and deemphasizes the need for vigorous reading.[192] Many scholars blame the No Child Left Behind Act of 2001 of having a "perverse effect on teachers' learning objectives for their students" because the Act tied federal funding to students' performance on standardized tests, which do not require significant critical reading skills.[193] Thus, preparation focused on excelling at standardized tests leaves students without the skills to "read critically, synthesize rules, or analyze material to the extent required in law school."[194] This is especially troubling because most of our incoming law students were educated under No Child Left Behind.[195]

In addition to the emphasis on standardized tests, Generation Z's elementary and secondary schools emphasized science, technology, engineering, and math ("STEM") classes in response to the rising importance of technology in the workplace.[196] To make way for more of these classes, elementary and secondary schools attended by Generation Z are less likely to offer or emphasize classes that focused on other subjects that teach essential skills such as critical reading, thinking, or writing.[197]

Additionally, the textbooks Generation Z students (at least those from the United States) had in middle school and high school have declined in difficulty over the past couple of decades.[198] The minimal effort that students put forth to read and comprehend the text they used before law school does not prepare them to tackle the complex text they will encounter in their casebooks.

The consensus for undergraduate learning is hardly better: "The overall quality of undergraduate learning is in decline because many college programs are not adequately rigorous or demanding."[199] In their now infamous study, Richard Arum and Josipa Roska found that 45% of

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192 Cooper, *supra* note 26, at 553.

193 Montana, *supra* note 5, at 437.

194 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) (discussing how high school and college education before law school involves "memorizing and regurgitating predigested, prepackaged, and organized information obtained from textbooks, lectures, and the media").

195 *See* SEEMILLER & GRACE, *supra* note 72, at 7.

196 Alexandra Ossola, *Is the U.S. Focusing Too Much on STEM?*, ATLANTIC (Dec. 3, 2014), https://www.theatlantic.com/education/archive/2014/12/is-the-us-focusingtoo-much-on-stem/383353/. *See generally* Committee on STEM Education of the National Science & Technology Council, *Chartering a Course for Success: America's Strategy for STEM Education*, THE WHITE HOUSE (2018), https://www.whitehouse.gov/wp-content/uploads/2018/12/STEM-Education-Strategic-Plan-2018.pdf (laying out the Federal Government's five-year strategic plan for STEM education).

197 *See e.g.* Patricia Cohen, *A Rising Call to Promote STEM Education and Cut Liberal Arts Funding*, N.Y. TIMES (Feb. 21, 2016), https://www.nytimes.com/2016/02/22/business/arising-call-to-promote-stem-education-and-cut-liberal-arts-funding.html; Graham, *supra* note 8, at 58-59.

198 Spichtig et al., *supra* note 64, at 253 (analyzing lexical and syntactic complexity of all levels of secondary school textbooks).

199 Cooper, *supra* note 26, at 555.

undergraduates demonstrate no improvement in critical thinking, complex reasoning, and writing skills in the first two years of college, and 36% show no improvement in four years.[200] Other researchers have found "most college composition courses do not explicitly cover critical reading strategies or effectively integrate critical reading into writing lessons or assignments."[201]

One reason for the change in undergraduate experiences is that students and their parents view undergraduate years not as an academic experience, but as a credentialing process.[202] Students expect to "choose what kind of education they buy, and what, where, and how they learn," leading scholars to term them "consumers" of education rather than "learners."[203] As consumers of education, students are less motivated and invested in the learning process.[204] They focus on the grade or degree rather than the process of learning, and are less likely to seek out challenging learning experiences such as developing critical reading skills.[205] Indeed, students are deliberately choosing classes with little reading or writing.[206]

Students as consumers also harbor a sense of entitlement to high grades without the hard work.[207] They will frequently complain if a professor assigns a lengthy or complex reading assignment.[208] Professors—an increasing number of whom are adjuncts, untenured, or have no form of job security—cave to these complaints in exchange for favorable course evaluations.[209] Student complaints have also led to grade inflation.[210] The most common grade in undergraduate institutions now is an "A," which makes up 42% of all grades.[211] Not only does grade inflation signal to the students that they have mastered the curriculum, but it gives incoming law students a distorted view of their own abilities, namely that they believe they know how to critically read.[212]

At the same time, there has been a decline in liberal arts majors, the graduates from which may perform better in law school.[213] With tuition rising, students and their parents are less interested in liberal arts degrees that "do not provide specific, marketable competencies for a defined, entry-level

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200 Richard Arum & Josipa Roksa, *Are Undergraduates Actually Learning Anything?*, CHRON. HIGHER EDUC. (Jan. 18, 2011), http://www.chronicle.com/article/Are-Undergraduates-Actually/125979.

201 Shaw, Mattern, & Patterson, *supra* note 34, at 148.

202 Flanagan, *supra* note 12, at 137.

203 Montana, *supra* note 5, at 438; Dalton, *Bridging the Digital Divide*, *supra* note 7, at 175.

204 Flanagan, *supra* note 12, at 154.

205 *Id.* at 155.

206 Montana, *supra* note 5, at 436; Cooper, *supra* note 26, at 557 n.21.

207 Montana, *supra* note 5, at 439.

208 *Id.* at 436.

209 *Id.* at 436-37.

210 *Id.* at 438.

211 *Id.*

212 *Id.* at 439.

213 *See* Flanagan, *supra* note 12, at 148, 151.

job" into a specific career.[214] Liberal arts degrees focus on teaching "'flexibility, creativity, critical thinking, and communications skills,' as well as skills in analysis and written communication" which often includes instruction in critical reading.[215] Liberal arts majors "perform higher on tests of critical thinking, analytical reasoning, and writing than other majors, and [are] more likely to take classes with significant reading and writing requirements."[216] And yet some commentators advocate for reducing funding for students who want to pursue a degree in humanities to fund increased incentives for those who want to pursue STEM majors.[217]

In sum, students arrive to law school having not been explicitly taught how to make the jump from comprehension readers to critical readers.

Whether the cause of deficient critical reading skills in incoming law students is social preferences, digital technology, prior education experiences—or most likely a combination of all of these—is this really a problem? If the world is changing, should we care if law students cannot critically read as well as past generations? The next section explores these questions, but the simple answer is, yes. It is a problem because critical reading is essential to most tasks lawyers and law students do.

C. Why Are Deficient Critical Reading Skills a Problem?

Lawyers and judges spend much of the day reading, and they read for all sorts of purposes: examining briefs, discovering facts, reviewing documents, researching legal authority, learning about a client, evaluating an offer, editing a document, studying contracts, preparing for a meeting, or studying a new law.[218] "Much of what we think of as legal work involves reading. Oftentimes, it literally is the work . . . ."[219]

Lawyers are not just paid to read; lawyers are paid to critically read extraordinarily well.[220] By observing junior associates at a large size firm, a medium size firm, a nonprofit agency, and a solo practice, Ann Sinsheimer and David J. Herring found in an ethnographic study that for those attorneys, lawyering is "fundamentally about reading. [Lawyers] read constantly."[221]

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214 *Id.* at 148.

215 *Id.* at 148 (quoting Carol T. Christ, *Myth: A Liberal Arts Education is Becoming Irrelevant*, AM. COUNCIL ON EDUC., (Spring 2012)).

216 *Id.* at 150. This is true for humanities and science and mathematics majors as well. *Id.*

217 Cohen, *supra* note 197.

218 Jay A. Mitchell, *Reading (in the Clinic) is Fundamental*, 19 CLINICAL L. REV. 297, 300 (2012).

219 *Id.*

220 *Id.* at 297; *see* Beazley, *supra* note 159, at 58 ("We generally believe that deeper and broader understanding of the law and the facts will promote justice, and so it is disturbing to think that lawyers and judges may be reading shallowly, or may be skipping important information when they read and work").

221 Ann Sinsheimer & David J. Herring, *Lawyers at Work: A Study of the Reading, Writing, and Communication Practices of Legal Professionals*, 21 L. WRITING J. 63, 70, 72 (2016).

The lawyer participants read to educate themselves—to learn new areas of law or learn known areas more deeply.[222] The observed attorneys actively read with a focus or a purpose—they questioned the text, they marked up the text, they talked out loud to themselves, and they thought about how the information they read applied to their client's situation.[223] As a result of this study, Sinsheimer and Herring suggest that legal educators explicitly teach critical reading to law students because it was what the younger attorneys did the most, but also what they struggled with the most.[224] As this study indicates, a lawyer or judge who cannot critically read is at such a disadvantage that they are arguably incompetent.

Recognizing the importance of critical reading to lawyers, the ABA lists "Critical Reading" as the #2 core skill, value, knowledge, or experience a student can acquire before law school to help them succeed.[225] It says this about the importance of critical reading:

> Preparation for legal education should include substantial experience at close reading and critical analysis of complex textual material, for much of what you will do as a law student and lawyer involves careful reading and comprehension of judicial opinions, [statutes], documents, and other written materials. You can develop your critical reading ability in a wide range of experiences, including the close reading of complex material in literature, political or economic theory, philosophy, or history. The particular nature of the materials examined is not crucial; ***what is important is that law school should not be the first time that you are rigorously engaged in the enterprise of carefully reading and understanding, and critically analyzing, complex written material of substantial length***.[226]

As one scholar points out, "legal education that does not instruct law students how to read a case and to glean rules from it is, arguably, an inadequate legal education."[227] And yet, "critiques of legal education by legal educators themselves continue to suggest serious problems with the way the majority of law schools approach developing [critical reading] skills."[228]

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222 *Id.* at 73.

223 *Id.* at 87.

224 *Id.* at 122.

225 *Pre-Law: Preparing for Law School*, ABA, https://www.americanbar.org/groups/legal_education/resources/pre_law.html (last visited Aug. 25, 2019) ("There are important skills, values, knowledge, and experience that you can acquire prior to law school and that will provide a sound foundation for a legal education. If you wish to prepare adequately for a legal education, and for a career in law or for other professional service that involves the use of lawyering skills, you should seek educational, extra-curricular, and life experiences that will assist you in developing those attributes. The student who comes to law school lacking this foundation will face a difficult challenge.").

226 *Id.* (emphasis added).

227 Newell, *supra* note 7, at 815.

228 EVENSEN ET AL., *supra* note 38, at 2.

Indeed, research has shown that law students' case reading and reasoning skills do not improve throughout law school, indicating they are not receiving instruction on these skills.[229]

Deficient critical reading skills can negatively affect the education a law student receives.[230] Reading to learn in law school is drastically different than reading to learn in other disciplines.[231] Traditionally, law students have read casebooks to learn the law,[232] which differ from textbooks[233] because the former are filled with compilations of heavily redacted cases and snippets of codes with little explanation of their significance and practically no explicit description of how the main ideas fit together. Reading casebooks requires that students decipher rules from these fragments and organize them in a coherent fashion—in other words, students must critically read the cases.[234] Traditional law school education also requires students to rely on opinions, complicated statutes, and lengthy legal articles to spot legal issues, and that type of reading requires focused, sustained critical reading.[235]

An empirical study conducted by Leah M. Christensen showed that law students who are at the top of the class utilize more of the reading strategies associated with critical reading than those students who rank at the lower end of the class.[236] After observing high performing and low performing students using think aloud protocols[237] and coding their thoughts, Prof. Christensen found that the way a student read was a more accurate predictor of the student's law school success than LSAT scores.[238] According to another study of academic support specialists, improving law students' critical reading is a threshold matter because "a foundation in critical reading serves as a prerequisite to exercising and developing the other types of skills involved in legal learning."[239] The lack of development of critical reading skills interferes with law students' ability to analyze cases and statutes,

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229 *Id.* at 1.

230 *See* Laurel Currie Oates, *Leveling the Playing Field: Helping Students Succeed by Helping Them Learn to Read as Expert Lawyers*, 80 ST. JOHN L. REV. 227, 228-29 (2006).

231 Jennifer M. Cooper, *Smarter Learning: Using Cognitive Science to Maximize Law Learning*, 44 CAP. U. L. REV. 551, 554 n.9 (2016).

232 Wegner, *supra* note 12, at 906.

233 Oates, *supra* note 230, at 251.

234 *See* Wegner, *supra* note 12, at 908-09; Zalesne, *supra* note 11 at 267.

235 *See* Zalesne, *supra* note 11 at 276-77.

236 Leah M. Christensen, *Legal Reading and Success in Law School: An Empirical Study*, 30 SEATTLE U. L. REV. 603, 625 (2007).

237 Think aloud protocols require that the students explain their thought process as they are reading rather than through post hoc questioning. *Id.* at 617.

238 *Id.* at 627.

239 Brett A. Brosseit, *Charting the Course: An Empirically Based Theory of the Development of Critical Thinking in Law Students*, 26 ALB. L.J. SCI. & TECH. 143, 156 (2016); *see* Steel et al., *supra* note 24, at 187 ("The ability to critically read legal documents is therefore a fundamental threshold skill for law students.").

synthesize information, and apply it in different contexts.[240] Because students are coming to law school with weaker critical reading and thinking skills than previous students, they are less prepared to learn by reading cases.[241]

Moreover, ABA Standard 302(b) requires law schools to establish learning outcomes to prove law students' competency in "written . . . communication in the legal context."[242] Critical reading is an indispensable part of legal written communication in any of its forms.[243] Thus, when law schools are confronted with law students who cannot critically read, or who are struggling to critically read, law schools have an obligation to draft learning outcomes geared specifically towards critical reading competency and to assess students' progress in this area both formatively and substantively.[244]

Legal commentators have riddled the landscape with predictions of how the practice of law will change in the next few years.[245] So it is worth asking here, will critical reading be obsolete to lawyers in the future? After all, other life skills common to our ancestors have become obsolete through technology. The ability to tell time from the sun or a sundial was a common skill hundreds of years ago, but now people in developed countries rely on clocks to tell us the time, and some—such as atomic clocks—are incredibly specific. This makes the use of sundials in developed countries obsolete. And although some skills our ancestors mastered are not obsolete, we do not need to be as expert at them as we used to be. For example, students still learn basic math, but most people rely on calculators to add, subtract, divide or multiply numbers with more than two digits.[246]

Even with the advancements of artificial intelligence, lawyers will still need to read critically. Being a critical reader means that law students must make "reliable observations" from studying the text, produce "sound inferences" from those observations, and form "reasonable hypotheses" about what they read.[247] These same skills are characteristics of good

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240 Dalton, *Their Brains on Google*, *supra* note 8, at 431.

241 Cooper, *supra* note 26, at 552-53.

242 ABA, ABA STANDARDS AND RULES OF PROCEDURE FOR APPROVAL OF LAW SCHOOLS 15 (2018) (Standard 302 Learning Outcomes) [hereinafter "ABA STANDARDS"], https://www.americanbar.org/content/dam/aba/publications/misc/legal_education/Standards/2017-2018ABAStandardsforApprovalofLawSchools/2017_2018_standards_chapter3.authcheckdam.pdf

243 Mitchell, *supra* note 218, at 299.

244 *See* ABA STANDARDS, *supra* note 242, at 15, 23 (Standard 302: Learning Outcomes & Standard 314: Assessment of Student Learning).

245 Heidi S. Alexander, *The Future of Lawyers: Five Big Ideas*, ATTORNEY AT WORK (Apr. 26, 2013), https://www.attorneyatwork.com/the-future-of-lawyers-five-big-ideas-from-the-suffolk-law-institute-on-law-practice-technology-and-innovation/.

246 Many thanks to Mary-Beth Beazley for the insightful question and analogies presented in this paragraph.

247 Linda L. Flynn, *Developing Critical Reading Skills Through Cooperative Problem Solving*, 42 READING TEACHER 664 (May 1989) (quoting Stephen P. Norris, *Synthesis of Research on Critical Thinking*, 42 EDUC. LEADERSHIP 40 (May 1985)).

problem solvers generally, which, at its heart, is what attorneys do.[248] Even technology companies see the key changes in the legal field "more around client-centered services, technology-heavy processes, and the availability of legal services, both virtual and fast," none of which displace the need for critical reading.[249] Legal technology companies still tout one of the essential skills of lawyers as "legal process analysis," which begins with critical reading of statutes, regulations, cases, and agency opinions.[250] The bottom line is that the essence of law practice "is impressively resistant to disruption," and the need to read settlement letters, contracts, offers, motions, and opinions with a critical eye—one that evaluates, draws inferences, and arrives at conclusions based on evidence in the writing—will still be a crucial skill for lawyers, at least in the foreseeable future.[251]

This Article is not the first to recognize that many law students lack critical reading skills.[252] But the next section is where it differs from ones that came before. Rather than listing out various remedies at this juncture, this Article advocates for a change in perspective. As Part III explains, critical reading is a wicked problem, and thus any attempt to tackle it must come from that standpoint. Mainly because "[w]ithout understanding the 'wickedness' of the situation, there is finger pointing instead of learning."[253]

III. CRITICAL READING QUALIFIES AS A WICKED PROBLEM

Horst Rittel and Melvin Webber first introduced the idea of "wicked problems" in the late 1960s to dispel the notion that social professions—particularly those professions that dealt with government, policy, or community planning in some form—could treat all problems the same as those in the engineering or science fields: something that has a definitive answer out there somewhere.[254] These social professions originally approached problem-solving in a linear manner. First, problem solvers must define the problem, usually by gathering information and then analyzing it.[255] Then problem solvers moved to the solution stage where they would craft and evaluate solutions before choosing one solution, implementing it, and

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248 *See* Flynn, *supra* note 247, at 664.

249 Think Tank, *What Will the Future of Law Look Like?*, ADERANT, https://www.aderant.com/think-tank/future-law/ (last visited Oct. 12, 2018).

250 Jacqui Walker, *The Future of Law: Is Technology Stealing Young Lawyer Jobs?*, LEGALER BLOG, (Mar. 1, 2015), https://blog.legaler.com/2015/03/01/the-future-of-law-is-technology-stealing-young-lawyer-jobs/.

251 Keith Lee, *Anticipating the Future of Law*, ASSOCIATES MIND, (Mar. 13, 2014), https://associatesmind.com/2014/03/19/anticipating-the-future-of-law/.

252 *See supra* notes 3-5.

253 CONKLIN, *supra* note 15, at 36.

254 Rittel & Webber, *supra* note 12, at 155-56.

255 CONKLIN, *supra* note 15, at 8.

assessing the result.[256] This "water-fall model" or linear problem-solving process of methodically completing one stage before moving to the next has been the traditional wisdom for complex problem solving.[257]

"Tame problems" are typically solvable using this linear process.[258] Tame problems are easily defined and have a definite stopping point—that is a point when the solution is objectively reached.[259] The solution can be independently evaluated as right or wrong, and similar problems can all be solved in the same way.[260] Tame problems have a limited set of alternative solutions, and one can be easily tried and abandoned if it fails.[261] Some examples of tame problems are finding how to check-mate a king in chess in only five moves; repairing a computer; finding the molecular formula of an unknown gas; or balancing an accounting ledger. "Tame" does not mean that the problem is simple.[262] A tame problem could be technically complex and the solver may need specialized skills to resolve it. But each tame problem is stable—it is well-defined and the problem itself does not change—and each has a point at which anyone can objectively say that it is solved.[263] Thus, solving tame problems using a linear process typically works.[264]

In contrast, wicked problems "are never solved. At best, they are re-solved—over and over again."[265] Wicked problems appear "when the factors affecting possible resolution are difficult to recognize, contradictory, and changing; the problem is embedded in a complex system with many unclear interdependencies, and possible solutions cannot readily be selected from competing alternatives."[266] The adjective "wicked" is not meant to imply any malicious intent; it merely describes the tricky nature of these problems.[267]

Rittel and Webber observed that the hardest part of solving wicked problems is defining the problem ("knowing what distinguishes an observed condition from a desired condition"), pinpointing the problem ("finding where in the complex causal networks the trouble really lies"), and deciding what actions to take to align "what-is" with "what-ought-to-be."[268] Through their observations, they devised ten characteristics of a wicked problem, all

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256 *Id.* at 8-9.
257 *Id.* at 9.
258 *Id.* at 18.
259 *Id.* at 19.
260 *Id.*
261 *Id.*
262 *Id.*
263 *Id.*
264 *Id.* at 18.
265 Rittel & Webber, *supra* note 12, at 160.
266 Wegner, *supra* note 12, at 870-71.
267 Rittel & Webber, *supra* note 12, at 160-61.
268 *Id.* at 159.

of which are "more descriptive than definitional."[269] Thus, not all wicked problems have each characteristic in equal proportions to the others.

First, "[t]here is no definitive formulation of a wicked problem."[270] People's understanding of a wicked problem depends on their ideas for solving it.[271] There is no way to define it without looking for solutions because "every specification of the problem is a specification of the direction in which treatment is considered."[272] So how a person intends to solve a problem aids in its definition because the problem is the result of complex, interwoven, but sometimes independent sources.[273] Every solution that problem solvers think of "exposes new aspects of the problem, requiring further adjustments of the potential solution[]."[274] Additionally, what the problem is depends on which stakeholder you ask. "[D]ifferent stakeholders have different views about what the problem is and what constitutes an acceptable solution."[275]

So, for example, how do we define the problem of gun violence in U.S. schools? If we believe that we can solve gun violence through stricter gun laws, then that solution is part of the definition—our gun laws are too lax and therefore gun violence in schools is a problem. But what if we understand the problem as a result of the shooter being bullied? Then part of the solution would need to focus on anti-bullying campaigns. Or what if we thought about the problem as Malcolm Gladwell has argued—that school shootings are the result of a social process in which shooters have varying thresholds, defined "as the number of people who need to be doing some activity before we agree to join them?"[276] This means that although the first seven major shooters in school shootings had a threshold of zero (and had underlying mental health or abuse issues) so they would perform an anti-social act even if no one else ever did, later shooters had higher thresholds—they were perfectly normal, loved children who would not have shot up their schools but for the example of others before them—and those later shooters had no underlying characteristics such as being abused, bullied, or mentally ill.[277] Thus, if the shootings were a result of this social process, then the solution would be to find a way to break that social indoctrination. Seeing the problem from this angle makes stricter gun laws as a solution less palatable because it would not solve the underlying social process problem.

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269 CONKLIN, *supra* note 15, at 16; Rittel & Webber, *supra* note 12, at 161-67.

270 Rittel & Webber, *supra* note 12, at 161.

271 *Id.*

272 *Id.*

273 *See id.*

274 CONKLIN, *supra* note 15, at 14.

275 *Id.*

276 Malcolm Gladwell, *Thresholds of Violence*, THE NEW YORKER (Oct. 19, 2015), https://www.newyorker.com/magazine/2015/10/19/thresholds-of-violence.

277 *Id.*

To formulate a definition of the problem that a lack of critical reading skills poses to law students then, we begin with what is: law students have not developed solid critical reading skills, and even if prior students have not been experts at critical reading, current incoming law students are even less prepared with those skills than those before them.[278] Now we must reconcile that with what ought to be: law students need to critically read to succeed in law school and in their legal careers.[279] But where is the problem located in the complex causal networks? One may mistakenly think that simply teaching students the steps of critical reading would be enough to solve the problem. But that approach does not take into account the actual causes of this phenomenon. For example, if one cause is that students are multitasking too much to learn effectively,[280] then simply teaching students the steps of critical reading will do little to help them. Convincing students to stop multitasking while reading law may need to be part of the solution.

Some scholars have characterized the effect of technology on digital natives' lack of critical reading skills as "lack[ing] discipline and motivation to read denser, more analytical texts."[281] But understanding that what appears to be lack of discipline has a physical component—law students' come to law school with brains literally not wired to critically read—adds a new dimension to how we define the problem and how we solve it. If we believe students just need the right motivation to critically read, the solution is very different than if we consider that even with motivation, the physical make-up of their brains may not allow them to accomplish the task as easily as previous generations. Each of the effects of technology suggests a different solution. To critically read, a student may need to carve out more technology down time. Or to improve critical reading, maybe law students should read more from hard texts than online. But each time a new aspect of the problem arises, we adjust our idea of how to fix it.

Defining the problem becomes even more difficult when considering the many legal education stakeholders; these include at least casebook faculty; clinical faculty; legal writing faculty;[282] deans; students (current and prospective); students' parents; law school administrators; undergraduate

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278 *See supra* Part II (A).

279 *See supra* Part II (C).

280 *See supra* Part II (B)(1).

281 Montana, *supra* note 5, at 443.

282 I refrain from saying simply "faculty" on purpose. I distinguish faculty other than legal writing faculty as "casebook" faculty rather than "doctrinal" faculty because legal writing professors teach the doctrine of legal writing, so that term is not accurate. But why distinguish them at all? Because in my experience, there are some casebook faculty who believe that the solution lies within legal writing classes and thus when they hear the bare term "faculty" it means someone different than themselves. To be perfectly clear that I mean *all* faculty, then, and not just a certain subset, I include the three main "categories." If we existed in a perfect world, where all faculty were truly equal, I would be able to use the phrase "all faculty" and all professors, no matter the subject they taught, would feel included in that mix.

faculty; accreditors; bar examiners; employers; funding sources; university leaders; and university trustees. Each one may have a different solution in mind—one that most likely does not involve themselves—and thus would frame the problem as coming from causes that are out of their control.[283]

Knowing what distinguishes the observed condition of the lack of critical reading skills from the desired condition of possessing them is not clear because "[t]he problem is embedded in a complex system with many unclear interdependencies, and possible solutions cannot readily be selected from competing alternatives."[284] This is the first criteria that demonstrates that the lack of critical reading skills is a wicked problem.

Second, wicked problems have a "no stopping rule."[285] For a tame problem, there is criteria to determine when *the* solution has been found.[286] For example, if the problem is balancing a ledger and it balances now, you have reached *the* solution. But not with wicked problems. Because there is no one definition of the problem, there can be no one definitive solution.[287] As problem solvers continue to define the problem, solutions continue to multiply. In this way, any "additional investment of effort might increase the chances of finding a better solution."[288] Accordingly, people terminate work on wicked problems based on outside considerations—running out of time, money, patience, etc. Or they stop when they deem the solution "good enough."[289]

Implementing only one solution will almost certainly not resolve all the possible causes of deficient critical reading. For example, if we created a critical reading class that incoming law students had to take before law school, would that help those students whose brains are wired in a way that makes it harder for them to perform the skills necessary to critically read? What if undergraduate institutions required a critical reading class? Or taught more critical reading in the classes already offered? Does that solve a student's preference for multitasking? There would always be some additional investment or effort that may increase the chances of discovering a better solution for certain students. Stakeholders will simply need to agree that their remedies are good enough.

Third, there are no right or wrong solutions to wicked problems.[290] Tame problems, such as whether an internet connection is up and running, can be independently verified against a set criteria by any third-party. But not wicked problems. Instead, third-parties—or the problem solvers

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283 Rittel & Webber, *supra* note 12, at 165.
284 Wegner, *supra* note 12, at 870-71.
285 Rittel & Webber, *supra* note 12, at 162.
286 *See id.*
287 *Id.*
288 *Id.*
289 *Id.*
290 *Id.*

themselves—can say, at most, that approaches to wicked problems are either "better" or "worse," "acceptable" or "not acceptable," "satisfactory" or "not satisfactory."[291] Each stakeholder's judgment of the solution will be value-laden and reveal the judge's own interests and perspective.[292]

To illustrate, let us say that some proponents of the Second Amendment urge schools to put armed police or ex-military in schools to stop shooters. Others decry this solution as ludicrous—an "unacceptable" solution. Those others may argue that arming people in schools is a "worse" solution than preparing teachers and students for such attacks through training and drills coupled with cheap, effective door stoppers. And a third set of people insist that we must prioritize students' mental wellness as a means of prevention. There is no objectively "right" answer—various stakeholders prioritize various solutions. At most, third-parties or the problem-solvers themselves can say the solution was "good enough."[293]

How could a third-party independently verify whether all law students entered (or left) law school with excellent critical reading skills? Suppose a national test could be formed; in fact, reading experts did just that, and yet the TV1 and TV2 tests did not have a "ceiling"—a point where students have the maximum level of critical reading skills.[294] Some empirical research has been done on how experts and novices read judicial opinions, law review articles, or other legal documents.[295] Most of that empirical research has been done using think aloud protocols that require the participants to comment on their thought processes as they read and the researcher then codes or deciphers meaning from the comments.[296] The results then, could vary based on the participant's choice of words or the researcher's coding so that if each study were replicated with the same participants and researchers, the results

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291 *Id.* at 162-63.

292 *Id.* at 163.

293 *Id.*

294 *See generally* EVENSEN ET AL., *supra* note 38, at 2.

295 *See generally* Catherine J. Cameron, *In the Eyes of the Law Student: Determining Reading Patterns with Eye-Tracking Technology*, 45 RUTGERS L. REV. 39 (2017) (tracking eye movements of students as they read a case); Grise, *supra* note 2 (measuring if students' writing improved after receiving critical reading instruction); Sinsheimer & Herring, *supra* note 221 (studying how junior associates in a law firm setting engaged in reading and writing tasks in their daily practice); Leah M. Christensen, *The Paradox of Legal Expertise: A Study of Experts and Novices Reading the Law*, 2008 BYU EDUC. & L.J. 53 (2008) (studying the strategies lawyers and judges use to read the law); EVENSEN ET AL., *supra* note 38 (studying law students' reading comprehension in their 1L and 3L years and finding there was no significant difference in comprehension); Christensen, *supra* note 236, at 603 (analyzing how students at the top and the bottom of a law school class read judicial opinions); James F. Stratman, *When Law Students Read Cases: Exploring Relations Between Professional Legal Reasoning Roles and Problem Detection*, 34 DISCOURSE PROCESSES 57 (2002) (assigning participants "roles" to see if that helped reading retention); Oates, *supra* note 3, at 140-44 (analyzing four previous studies that explored how expert and novice legal readers read and discussing the author's own study).

296 *See* Cameron, *supra* note 295, at 43-46.

could vary ever so slightly; this is a far cry from the answer to an algebra problem that could be verified exactly over and over again. What we could say is that a student's skills have generally improved. But there will never be an independent measure of whether she has "arrived" at an appropriate critical reading skill level—one could only say "this level is appropriate," but that level would be in many ways arbitrary and laden with judgments, however well-informed.

Additionally, each stakeholder would have a different view of each proposed solution. An undergrad institution may not like a solution that involves an overhaul of their curriculum that caters specifically to law schools. Casebook professors may feel like critical reading skills are only the field of legal writing professors or academic support specialists and could be unwilling to educate themselves on ways to incorporate teaching critical reading skills to students in their casebook classes. And legal employers may want anyone that came before them—parents, secondary schools, undergraduate institutions, law schools—to solve the problem before the student reaches their doorstep.

Fourth, "[t]here is no immediate and no ultimate test of a solution to a wicked problem."[297] This characteristic focuses on the finality of the solution. Once any solution is implemented, "[there] will [be] waves of consequences over an extended . . . period of time."[298] These consequences can be unpredictable, undesirable, and outweigh the intended advantages of solving the original problem.[299] Because of this, it is difficult to determine immediately how successful the taken action was at correcting the problem.[300]

Will requiring all 1L students to take a one credit seminar class that teaches critical reading backfire because it forces Generation Z to multitask even more? Will having all faculty learn new pedagogical approaches to help students' critical reading and implement those approaches in their classes take a toll on their scholarship? But more importantly, how long after we implement these solutions can we see results? Implementing solutions that actually address some of the causes could have consequences for how we raise children, how undergraduate schooling is conducted, and how students live their everyday life. Until we implement a certain solution, we have no idea what the other consequences will be or how long after implementation those consequences will appear.

Fifth, "[e]very solution to a wicked problem is a 'one-shot operation.'"[301] There is no opportunity to learn by trial and error without

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297 Rittel & Webber, *supra* note 12, at 163.

298 *Id.*

299 *Id.*

300 *Id.*

301 *Id.* at 163.

some form of lasting consequences, because every attempt at a solution comes with a high cost—many times financially or to people's lives.[302] Each solution will leave lasting traces that cannot be reversed completely.[303] And attempts to reverse the solution or correct for undesirable consequences reveals another set of wicked problems.[304]

On the surface, this characteristic seems not to fit the dilemma of critical thinking as well because teachers can—and do—try out new teaching methods throughout the years. But the effects of experimental curriculum follow students throughout their lives—*it is irreversible as to them*. Large scale changes in curriculum to secondary schools, undergraduate programs, and law schools are expensive and that amount of money cannot be recovered for a failed program. Similarly, undoing education legislation cannot be undone easily, even if the new laws fail to increase critical reading in students.

Even if the solution were technology based rather than education based, the students' lives would still be changed forever. For example, requiring law students to forgo all technology during law school (which is massively far-fetched) or limiting it would change how they shopped or communicated with family and friends. The consequences are not the same as if a programmer took longer to fix a computer by trouble-shooting one way first and then another.

Sixth, the potential solutions to wicked problems are endless.[305] There is no way to prove that all possible solutions have been identified and considered.[306] Instead, the problem-solvers must use their judgment as to when to stop brainstorming possible solutions and also to decide which solutions should be implemented and in what order.[307]

When considering how to strengthen law students' critical reading skills, with so many intertwining causes, there is no way to have an exhaustive list of what will cure the deficiency. The most we can do is brain storm possible solutions based on how we frame the problem—a high school, undergrad, or law school problem? One only for legal writing professors? Or employers?—and make an informed, but still value-laden choice as to what may help. But no matter how many resolutions are dreamed up, there could always be just one more.

Seventh, wicked problems are "essentially unique."[308] Unlike algebra problems, there are not "classes" of wicked problems such that one can use

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302 CONKLIN, *supra* note 15, at 15.
303 Rittel & Webber, *supra* note 12, at 163.
304 *Id*.
305 *Id*. at 164.
306 *Id*.
307 *Id*.
308 *Id*.

the same general principles in a solution to address all members of that class.[309] With tame problems—such as solving the same type of algebra equation—there are certain characteristics of those problems that are so similar that you can apply the same problem-solving techniques to them.[310] This is unlike a wicked problem such as preventing school shootings. It may seem on the surface that you could apply the same principles to a school system in rural Oklahoma as to one in New York City, but there are too many unique characteristics of the two—money available from the state or school district, the different state legislatures and their priorities, the variances in each state's current gun laws, the layout of the schools, availability of school counselors, the differences in the school's responses to bullying, the culture and use of guns apart from school shootings, etc.—so that the design solution for New York City's schools cannot be transferred to rural Oklahoma's schools without significant transformation. So, despite what may be a long list of similarities between an old problem and a new one, wicked problems may have "an additional distinguishing property [or properties] that [are] of overriding importance."[311]

Of course, all causes of poor critical reading skills affect law students accepted by all law schools, but not all law schools are the same. Law schools may find that they are dealing with this problem on a larger scale due to their school's unique demographic make-up. For example, schools with older, returning students or those with a higher percentage of students whose elementary or undergraduate education was outside the United States may find their students' critical reading skills are acceptable. Additionally, the relationships between law schools and the surrounding legal community and close undergraduate institutions, will dictate the level of buy-in for solutions outside the law school itself. The relationships between the faculty and even the structure of the legal writing programs and academic support programs (if any!) must be considered. The amount of money each institution has to create additional resources for students varies. These factors and many more make the critical reading problem unique to each law school, even if there are many similarities and some solutions could be implemented at more than one school. And solutions that may work relatively well in one setting may not work at all in another.

Eighth, wicked problems are usually the symptom of another wicked problem.[312] Problems are "discrepancies between the state of affairs as it is and the state as it ought to be."[313] The process of resolving a problem is to

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309 *Id*. at 164-65.
310 *Id*. at 165.
311 *Id*. at 164.
312 *Id*. at 165.
313 *Id*.

look for the causes.[314] That cause can be the symptom of yet another (or multiple causes).[315] The higher or more broad the problem is, the harder it is to tackle, so some problem-solvers settle for attacking the problem on too low a level—one that they feel they can make a difference on.[316] But the success of lower-level solutions often thwarts efforts to resolve the higher problem—the cause.[317]

Brainstorming possible solutions to counter the effect of multitasking illustrates this characteristic. To stop students multitasking—one suggested cause of the lack of critical reading skills—we need them to put down digital technology while they study. But how do we do that? Is reducing the general population's screen time even possible? Multitasking itself seems like a wicked problem. For instance, what causes it? Pressure to complete too many tasks? To "fit in" with others bragging how much they multitask?

After reviewing the literature and observing the field, I would posit that problem-solvers are settling for attacking students' lack of critical reading skills on too low a level—mostly because that is the place delegated to legal writing professors. Those who are *implementing* solutions are legal writing professors who execute them on a small scale in their individual classrooms.[318] While this may be a low-cost method in monetary terms, it has high costs for what other skills the legal writing professor must sacrifice teaching. And other professors, the law school, and the students may acquire a sense of complacency that the problem is being addressed and thus the problem or solution has little to do with them. If other stakeholders erroneously perceive that legal writing professors can take care of the problem, there is no incentive for anyone else to do anything—any success legal writing professors may have only hinder efforts to resolve the higher problems. For too long, legal writing professors have been like the Whos on the dust speck that Horton the elephant held, screaming, "We are here! We are here! We are here" trying to solve this massive problem![319] But if we stop the quiet "solutions" and yell with one voice, someone might hear us.

Ninth, the failure of an implemented solution to a wicked problem "can be explained in numerous ways."[320] In other words, if the desired effect does not occur after implementing the solution of a wicked problem, that does not prove it was a poor solution. A scientist may say, "Under conditions

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314 *Id*.

315 *Id*.

316 *Id*.

317 *Id*.

318 *See generally* Curtis & Karp, *In a Case, in a Book*, *supra* note 4 (discussing an exercise developed for 1L legal writing students that demonstrates critical reading skills); Curtis & Karp, *In a Case, on the Screen*, *supra* note 4, at 277 (giving examples from their own experiences teaching students in doctrinal classes how to critically read cases).

319 *See* DR. SEUSS, HORTON HEARS A WHO! (Random House 1982) (1954).

320 Rittel & Webber, *supra* note 12, at 166.

C and assuming the validity of hypothesis H, effect E must occur."[321] But if C exists and E does *not* occur, then the scientist's hypothesis, H, is wrong.[322] But with wicked problems, that is not so. One stakeholder could deny that E has not occurred.[323] Or another stakeholder could explain that there was some intervening cause of the non-occurrence of E, and thus the hypothesis H was still good.[324]

For example, if the problem is school gun violence and we hypothesize that shootings will go down if we pass stricter gun laws, so we do, and shootings do not stop, there are numerous ways to still explain our hypothesis was correct—there has not been enough time that has passed; the laws were not strict enough; if we had not done it, more shootings or more casualties would have occurred; or the shooter's deteriorated mental health was an intervening cause.

In the area of critical reading, because there are so many possible causes identified, any one or two of them working together could be used to argue why a specific solution did not work. So if law schools require legal writing professors to teach critical reading, and students do not improve very much, we could blame it on the students' desire to multitask or on their own belief that they understand how to critically read already and so learning how is a waste of time. Or if all faculty in a school commit to teaching critical reading skills in their classrooms and students still do not seem to improve, the blame could lie in their digital technology-altered frontal lobes that make critical reading harder. This is why all stakeholders need to be part of defining the problem and the solutions.

Finally, the problem-solver "has no right to be wrong."[325] Unlike the scientific world where scientists are not vilified if their hypotheses do not pan out the way they thought, those who attempt to solve wicked problems are liable for the consequences and judged harshly for them.[326] This is because oftentimes wicked problems involve many stakeholders and their livelihoods or lives, and so any solution will impact some group disproportionately or irreversibly.[327] Subsequently, those disgruntled stakeholders will hold the problem-solver (many times other stakeholders) responsible.[328]

If time and resources are poured into one solution, and there is no demonstrable difference in the students' critical reading skills, many stakeholders may be angry. For example, if a law school adopts a bylaw

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321 *Id*.
322 *Id*.
323 *Id*.
324 *Id*.
325 *Id*.
326 *Id*. at 167.
327 *See id.*
328 *See id.*

requiring all classes to include some form of critical reading instruction and assessment—just as many schools now require formative assessments of substantive learning in every class—and students' critical reading skills do not seem to improve, the faculty could revolt. Some professors may feel upset at the administration or the majority of faculty who voted for the bylaw for taking precious preparation time and class time that the professor could have used for something else, such as scholarship.

Or the more likely scenario in the case of critical reading is that if ill-informed stakeholders do not appreciate the depth and complexity of the problem, they will stick legal writing professors with the task of trying to teach critical reading skills in the first year writing classes on top of the multitude of skills they already teach. Adding such a complex problem to their plate institutionalizes yet again the myth that teaching "legal writing [is] easy and requir[es] few skills."[329] Because of the lower status of legal writing professors in the hierarchy of academia, placing the burden of teaching critical reading solely on them would also implicitly devalue the skill in the eyes of casebook faculty because the skills legal writing professors teach are not viewed by many casebook faculty as "meritorious, valued, [or] challenging."[330] This "solution" would also lead to all the problems outlined in the introduction—it downplays the role other legal education stakeholders must have as part of the solution, framing it so narrowly sends the message to students that they will only use critical reading skills in a legal writing class and reduces the likelihood that they will transfer those skills to other situations, and it would not address many of the root causes. Besides inevitably perpetuating the powerful status hierarchies within law schools, if this solution fails to completely repair critical reading skills in law students (which it almost certainly will due to one or a mixture of the reasons listed above), the other stakeholders will blame legal writing teachers for the failure, unfairly perpetuating other faculty's confirmation bias that legal writing professors are "less than."[331]

For any solution that does not fully solve the problem, some category of stakeholders will be put out. And likely, when the topic of critical reading comes up again, the disgruntled stakeholders will balk at being part of another "solution," citing the failure of the last "solution."

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329 Stanchi, *supra* note 10, at 479.

330 *Id.* at 480.

331 *Id.* at 488.

IV. THE CHALLENGE OF CERTAIN STAKEHOLDERS ACCEPTING THAT CRITICAL READING NEEDS ATTENTION

If critical reading is taught in law school at all, it is often taught by legal writing professors or academic support staff in short orientation programs.[332] These are not ideal because critical reading cannot be taught in an hour; students must practice techniques in class, not through lecture format; and students need to learn and apply critical reading skills to more than just one type of legal document.[333] As for teaching critical reading solely in the legal writing classroom, few first year legal writing courses have enough time to focus on critical reading skills in the depth in which students need the instruction.[334] And relegating critical reading instruction to academic support programs (ASPs) has many of the same problems. On their own, traditional ASPs cannot address the fundamental causes of deficient critical reading skills.[335] Most law students are coming in with deficient critical reading skills, so law schools cannot expect a program that was meant to capture only weaker students to capture and correct an inherent weakness in almost all the students.[336] Moreover, the "majority of ASPs are understaffed, underfunded, and unprepared to help students at a systemic level."[337] But most importantly, using ASPs or legal writing classes is ill-advised because it shuts off discussion with other stakeholders about critical reading deficiency so there is no shared understanding or shared commitment to solutions.

Solving a lack of critical reading skills must be part of a larger rethinking of the traditional curriculum many schools are already undertaking.[338] As one legal education scholar stated, "The most transformative effort we can make to help Gen Z students succeed in law school is to teach them to be expert legal readers."[339]

Adding to this dearth of widespread faculty buy-in is the propensity people have to treat wicked problems like critical reading as tame problems because "who would choose to deal with a problem that cannot, by definition,

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332 Grise, *supra* note 2, at 269; *see* Melissa J. Marlow, *It Takes a Village to Solve Problems in Legal Education: Every Faculty Member's Role in Academic Support*, 30 U. ARK. LITTLE ROCK L. REV. 439, 499 (2008).

333 Grise, *supra* note 2, at 303.

334 *Id.* at 269.

335 *See* Brosseit, *supra* note 239, at 149.

336 Cooper, *supra* note 26, at 580; *see also* Marlow *supra* note 332, at 500 ("We, as a faculty, must jointly decide how to best create a learning environment that maximizes the potential for student learning. Creating this environment cannot be delegated to the academic support faculty. Success can only be found by every single faculty member signing on to the task.").

337 Flanagan, *supra* note 12, at 174; *see also* Marlow *supra* note 332, at 501 ("Academic support faculty can only do so much given the limited way in which they interact with law students.").

338 Grise, *supra* note 2, at 303; *see* Flanagan, *supra* note 12, at 180.

339 Graham, *supra* note 8, at 72.

be solved over one that can?"[340] Sometimes people ignore the complexity of a wicked problem by restating it as a problem that can be solved.[341] That would be like saying if the cause of poor critical reading is technology, let the law school ban laptops from classrooms and voilà, problem solved! But that would be neither realistic nor teach students to critically read. Even worse, sometimes a person may assert the wicked problem has already been solved—a claim no one has made about critical reading (yet).[342] In another attempt to treat a problem as tame, some may announce that there are only a few solutions and push others to choose among those.[343] This final tactic may actually be attractive for law schools. Law schools may feel that with their limited resources and multitude of demands, the solutions so far put forth in academia are sufficient—there is no need to spend more time talking about critical reading; simply choose amongst those options. And while I agree that those who have studied critical reading in law students before me have done a marvelous job giving practical suggestions to legal writing professors and casebook professors alike, I am convinced that a piecemeal approach is wholly inadequate in light of the systemic causes. If we treat wicked problems as tame problems, the wicked problems will re-emerge because "constraints change, stakeholders resist, and 'solutions' simply trigger additional problems."[344]

Instead, wicked problems must be addressed as what they are. We can tackle wicked problems by devoting time to building a shared understanding of the problem; we do that by soliciting input from a large range of stakeholders.[345] And there must be a shared commitment to solutions from those stakeholders.[346] And who are these legal education stakeholders? At the very least it includes law school deans; law students; students' parents; legal employers; law school administrators; the American Bar Association; the Association of American Law Schools; state bars; and all types of law faculty. Once all legal education stakeholders acknowledge that law students need help critically reading and that one class of stakeholders cannot solve this alone, there is a wealth of literature from other disciplines that explain how to tackle wicked problems.[347] But that is an article for a different day. Before embarking on an exhaustive explanation of a heuristic that law schools can apply to plan a course of action that will improve students' critical reading skills, there are two classes of stakeholders who still need to

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340 CONKLIN, *supra* note 15, at 21-22.

341 *Id*.; AUSTRALIAN PUBLIC SERVICE COMMISSION, TACKLING WICKED PROBLEMS: A PUBLIC POLICY PERSPECTIVE 12 (2007), http://www.enablingchange.com.au/wickedproblems.pdf.

342 CONKLIN, *supra* note 15, at 21-22.

343 *Id.*

344 Wegner, *supra* note 12, at 872.

345 *Id.* at 873; CONKLIN, *supra* note 15, at 15.

346 Wegner, *supra* note 12, at 873.

347 *See generally* CONKLIN, *supra* note 15.

be convinced en masse that they need to be part of the discussion: law students themselves and casebook professors.

Unfortunately, incoming law students often do not work on critical reading skills on their own "because they believe[] that they had acquired those skills as undergraduates."[348] They arrive at law school confident in their own critical thinking and reading skills because most are not skilled at self-assessment.[349] No one has talked to them about their reading skills since elementary school, and consequently they mistakenly believe their mastery at reading for mere comprehension equates to the acquisition of the exceptional, higher-level skills required for critical reading. Most students do not know that reading specialists organize readers into categories of emerging pre-readers; novice readers; decoding readers; fluent, comprehending readers; and expert readers.[350] They think either you can read, or you cannot. This binary mind-set can make students balk at what they perceive as "back-pedaling" in their education to learn skills they believe they already possess. Additionally, ASPs are often (unfairly) stigmatized as "not as 'real' or 'rigorous' law school education."[351] Consequently, if students perceive that critical reading education in law school only occurs in ASPs, they are less likely to self-diagnose themselves as needing training in that skill.

Many law professors also grossly misjudge Generation Z students' ability to critically read.[352] They assume that only a small portion of the student body will need limited assistance before mastering that skill.[353] Despite overwhelming evidence to the contrary, many professors presume that most admitted law students can critically read because the instructors themselves can critically read.[354] This head-in-the-sand approach led one scholar to remark that professors and students "may not be reading from the same page much less the same book."[355]

If casebook faculty think about critical reading at all, many believe their job to be fine-tuning law students' critical reading skills rather than introducing or developing those skills.[356] Even fifteen years ago, legal scholars complained that although there were excellent articles detailing how casebook faculty could encourage the development of law students' critical reading skills through small tweaks in their curriculum, casebook faculty

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348 Grise, *supra* note 2, at 270.
349 Graham, *supra* note 8, at 58.
350 *See* WOLF, *supra* note 27, at 115-62.
351 Marlow, *supra* note 332, at 500-01.
352 *See* Graham, *supra* note 8, at 72.
353 Cavanaugh et al., *supra* note 34, at 388; *see* Flanagan, *supra* note 12, at 174.
354 Cavanaugh et al., *supra* note 34, at 388.
355 *Id.* at 382.
356 Montana, *supra* note 5, at 447-48.

largely ignored those articles.[357] After all, if career advancement for faculty hinges on research and scholarship rather than on innovative or more effective teaching and those new teaching methods detract from research activity, why would faculty care? True, leading a classroom discussion based on a set of readings and being greeted by blank stares is not fulfilling, but if no one is measuring how much those students learn in the classroom and tying it to promotion or tenure, faculty incentive to change is low.[358] And some faculty are resistant to changing their teaching methods to teach critical reading because of the risks associated with change (such as negative teaching evaluations) or because they prize their independence and dislike being told how to teach.[359]

Even in the face of the evidence in Part II(A) and (B), there is a sense amongst these two groups that this problem does not effect "me" or "our law school." To convince casebook faculty and law students that critical reading is a problem that everyone should tackle, each law school should have their law students take the TV1 and TV2 tests in the Critical Reading Assessment Study done by Evensen, Stratman, Oates, and Zappe that is discussed in Part II(A).[360] These tests have already been tested for validity and even revised after the study in response to findings.[361] And they are replicated in whole, along with the answers, as Appendices in the study.[362] Indeed, the researchers specifically developed these tests to be used by law schools, professors, ASPs, and others to assess students' critical reading skills.[363] Thus, the cost to test for critical reading skills using the TV1 and TV2 tests is relatively low.

Students could take one test at the beginning of their first semester of law school to gauge how bad the problem is in that incoming class generally. Then those same students could take the other version during their last semester of law to see how well critical reading interventions, if the law school implemented any, worked. Considering the shift in incoming law students and society since 2003 when TV1 was first used, current student scores would likely be even lower than the 60% average that students 15 years ago earned. And if professors continue teaching as they always have, a score that does not improve over three years of legal study would be strong support for the argument that legal education is failing to teach critical reading.

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357 Kunz, *supra* note 4, at 705.

358 *See* Brosseit, *supra* note 239, at 169-70 ("Faculty will not likely communicate promising new educational approaches and integrate them into their teaching in the absence of an intentional, structured effort under the guidance of a senior leader.").

359 Cavanaugh et al., *supra* note 34, at 382, 388.

360 *See supra* notes 43-56 and accompanying text.

361 EVENSEN ET AL., *supra* note 38, at 34-36.

362 *Id.* at 1, app. 1, app. 2. The versions of the TV1 and TV2 tests in the report's Appendices are the ones used in the study, but the revisions are detailed in the study. *Id.* at 34-36.

363 *Id.* at 40.

By proctoring these tests and gathering data on a specific body of students, the law school will be able to convince the students and casebook faculty to tackle the wicked problem of deficient critical reading skills. Luckily, Generation Z students are open to fixing broken systems like this. "They have this self-awareness that systems have been broken . . . but they can't be the generation that says we'll break it even more."[364] The pragmatism and independence that characterize these new law students will help to motivate them to change the view on critical reading when faced with this data. When working with wicked problems, the "right" answer is not as important as having all stakeholders buy into the solutions.[365]

V. CONCLUSION

Since Peter Dewitz lamented in 1997 that "[l]egal education and reading theory are two fields that rarely intersect," some individual professors have tried to remedy this, but little if any progress has been made by all stakeholders to collectively address critical reading deficiencies.[366] As a great legal writing professor once said, however, "Revolutions often begin with small steps, and those small steps sometimes lead to giant strides."[367] By taking a few small steps, we can eventually revolutionize our students' education and careers. Legal education stakeholders must accept that critical reading is a persistent, growing problem for a large swath of incoming law students. They should recognize that the problem is a wicked one, not a tame one, and therefore improvable but not completely solvable. Most importantly, legal education stakeholders need to understand and acknowledge their role in the solutions without resorting to allocating blame only to legal writing or ASP professors.

The starting point will be having incoming law students take the TV1 test sometime during their first year and the TV2 test sometime later in their law school experience. That way, there is hard empirical evidence to show students and casebook faculty—the hardest stakeholders to convince of this problem. At that point, all stakeholders in that law school can move forward to build a common understanding of the problem and its solutions through ongoing dialogue.

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364 Sanbum, *supra* note 76 (quoting MTV President Sean Atkins).

365 CONKLIN, *supra* note 15, at 21-22.

366 *See* Dewitz, *A Problem of Learning from Text*, *supra* note 3, at 246.

367 Mary Beth Beazley, *Better Writing, Better Thinking: Using Legal Writing Pedagogy in the "Casebook" Classroom (Without Grading Papers)*, 10 LEG. WRITING 23, 28 (2004).