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## BRINGING A KNIFE TO THE GUNFIGHT: THE ACADEMICALLY UNDERPREPARED LAW STUDENT & LEGAL EDUCATION REFORM

Susan Stuart & Ruth Vance\*

Regardless of their best intentions, law schools' efforts to "reform" themselves to produce practice-ready students will never succeed until they step back and address one of the great, unanswered questions in the current "reformation" literature: "How do students' abilities to quickly master sophisticated intellectual tasks in law school relate to prior academic experiences, pre-existing familiarity with structured forms of higher-order thinking, and choices of instructional strategies that may or may not link learning to familiar contexts outside of the law?"<sup>1</sup> This Article's answer to that question is that today's entering law students are demonstrably less prepared for law school because their critical-thinking and problem-solving skills are significantly lower than those of students in the 1970s and 1980s. As a consequence, although their portfolio of tasks is basically unchanged, law schools' capacity to accomplish those tasks is challenged by having to do more with less. And reform measures will be unsuccessful unless this problem is addressed.

The legal academy is being hit with pot-shots from every quarter, from the media to Congress, from students to the practicing bar. The academy is even taking pot-shots from within as we cannibalize ourselves over annually smaller pools of matriculants and hence smaller pools of tuition dollars. Of course, the most systemic and most recent critiques of the academy are *Educating Lawyers* (the "Carnegie Report")<sup>2</sup> and *Best Practices for Legal Education* ("Best Practices").<sup>3</sup> The 1992 MacCrate Report<sup>4</sup> had earlier raised the alarm about legal education as the American Bar Association tried to prod the academy into addressing the practicing bar's concerns about lawyering skills and

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<sup>1</sup> Judith Welch Wegner, *Reframing Legal Education's "Wicked Problems,"* 61 RUTGERS L. REV. 867, 939 (2009).

<sup>2</sup> WILLIAM M. SULLIVAN ET AL., *EDUCATING LAWYERS: PREPARATION FOR THE PROFESSION OF LAW* (2007).

<sup>3</sup> ROY STUCKEY ET AL., *BEST PRACTICES FOR LEGAL EDUCATION: A VISION AND A ROAD MAP* (2007).

<sup>4</sup> A.B.A. SEC. LEGAL EDUC. & ADMISSIONS TO THE BAR, *LEGAL EDUCATION AND PROFESSIONAL DEVELOPMENT—AN EDUCATIONAL CONTINUUM, REPORT OF THE TASK FORCE ON LAW SCHOOLS AND THE PROFESSION: NARROWING THE GAP* (1992) [hereinafter *NARROWING THE GAP*].

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professionalism:<sup>5</sup> “The Report’s core sets forth ‘The Statement of Fundamental Lawyering Skills and Professional Values’: ten fundamental lawyering skills and four professional values ‘which new lawyers should seek to acquire.’”<sup>6</sup> But drawing from our own observations within the academy, it was not until 2007 that Roy Stuckey et al. and the Carnegie Foundation for the Advancement of Teaching—and perhaps the eroding economy—finally brought home that the academy has to “fix” itself if it wants to continue to operate with the independence to which it has become accustomed.

There are any number of criticisms about the internal mechanisms of the academy that have brought us to this position: its uniformity of curriculum; its uniformity of pedagogy; its uniformity of faculty.<sup>7</sup> The number of internal quarrels about theory versus practice and research versus teaching is mind-numbing. And as a practical matter, the free-enterprise and “business” models of running institutions have made the costs of higher education sky-rocket. But by the 1990s, there was an innate significance about the timing of the criticisms raised by the practicing bar that was distinct from the cost of the education itself and the nature of the academic enterprise. That significance arose from the startling erosion of entering students’ academic preparation and the increasing numbers of academically underprepared law students.<sup>8</sup>

Legal educators have long been tasked with addressing “how they can most effectively prepare students for practice”<sup>9</sup> and with “linking [their] interests . . . with the needs of practitioners and the members of

<sup>5</sup> See, e.g., Russell Engler, *The MacCrate Report Turns 10: Assessing Its Impact and Identifying Gaps We Should Seek to Narrow*, 8 CLINICAL L. REV. 109, 113 (2001) (providing an overview of the MacCrate Report); Graham C. Lilly, *Skills, Values, and Education: The MacCrate Report Finds a Home in Wisconsin*, 80 MARQ. L. REV. 753, 753–54 (1997) (stating that legal commentators are concerned with restoring professionalism). See generally Stephen Gerst & Gerald Hess, *Professional Skills and Values in Legal Education: The GPS Model*, 43 VAL. U. L. REV. 513 (2009) (offering a model of educating law students about professional skills and values).

<sup>6</sup> Engler, *supra* note 5, at 113. The lawyering skills are: “Problem Solving; Legal Analysis and Reasoning; Legal Research; Factual Investigation; Communication; Counseling; Negotiation; Litigation and Alternative Dispute Resolution Procedures; Organization and Management of Legal Work[;] and Recognizing and Resolving Ethical Dilemmas.” *Id.* at 113 n.13. The elucidated professional values are: “Provision of Competent Representation; Striving to Promote Justice, Fairness[.] and Morality; Striving to Improve the Profession; and Professional Self-Development.” *Id.*

<sup>7</sup> SULLIVAN ET AL., *supra* note 2, at 3, 89–90; see Nancy B. Rapoport, *Rethinking U.S. Legal Education: No More “Same Old, Same Old,”* 45 CONN. L. REV. 1409, 1415 (2013) (discussing the lack of incentive for professors to create an innovative curriculum).

<sup>8</sup> See *infra* Part II.B (discussing the academically underprepared law student).

<sup>9</sup> STUCKEY ET AL., *supra* note 3, at 1.

the public the profession is pledged to serve.”<sup>10</sup> If we are honest with ourselves, those really are not new educational goals for the academy, although some members of the academy must be more forcefully reminded these days than perhaps in years past. If those of us in the academy who are over fifty are honest about our educational experiences,<sup>11</sup> we know that most of our best teachers were not law professors. Instead, we had the uniform curriculum, the uniform pedagogy, and the uniform faculty that the profession is now decrying. So what is different now? Why did the graduates of the 1960s, 1970s, and 1980s survive and indeed succeed with the same legal education and even fewer clinical and skills offerings? We all did not hire on with the largest firms that would “train” their associates, and the dynamic of requiring recent graduates to hit the ground running in smaller law firms is not new. Setting aside for the moment the economics of practice, the “new” law firm, and the advent of new technology, the fundamental demands of practice have not changed with regard to “thinking” like a lawyer and “doing” like a lawyer. So what did we draw on that made this “unsatisfactory” legal education work for us that is apparently absent now?

We opine that the precipitating problem is not the structure of the academy per se but the educational deficiencies of our students, which now makes the “old” structure of the academy ineffective today. Today, more students enter the legal academy without even rudimentary problem-solving skills.<sup>12</sup> Indeed, emerging empirical evidence reveals that fewer students possess the basic higher-order cognitive processes that the academy has assumed are the threshold educational attributes necessary for success in law school.<sup>13</sup> Without those threshold skills, an increasing number of students are unable to cope with the academic regimen in law school, which for years has presupposed their presence. Consequently, the critiques of both *Best Practices* and the Carnegie Report reflect the profession’s disappointment with the legal academy’s output, not because we do not understand our task, but because we do not understand the enormity of our task. Therein lies the need for law school reform: We must make up for deficiencies in our students’ earlier

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<sup>10</sup> SULLIVAN ET AL., *supra* note 2, at 4.

<sup>11</sup> This age group is relevant because not only are most senior faculty within that cohort, but also because Baby Boomers seem to represent the acme of adult literacy, which is in measurable decline in the United States. MARK KUTNER ET AL., U.S. DEP’T OF EDUC., NATIONAL ASSESSMENT OF ADULT LITERACY (NAAL): A FIRST LOOK AT THE LITERACY OF AMERICA’S ADULTS IN THE 21ST CENTURY 11 (2005).

<sup>12</sup> See *infra* Part II (discussing the shortcomings of current students’ skills).

<sup>13</sup> See *infra* Part II.B (contending that many students enter law school without the higher-order cognitive processes).

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education. *Best Practices* and the Carnegie Report reflect concerns about the quality of legal education both inside and outside the academy,<sup>14</sup> but that does not mean that the suggested reform can balance itself on a critique of the academy alone without taking a closer look at what the academy is encountering.

The reasons for less qualified students entering law schools are varied. First, the generation of students who are now admitted to law school has been almost wholly educated under the disaster that is No Child Left Behind ("NCLB"), enacted in 2001.<sup>15</sup> Second, higher education is not making up the deficits from NCLB. Not all matriculating law students have these problems: traditional students with liberal arts backgrounds tend to have stronger problem-solving credentials by reason of their past academic experiences while non-traditional law students have either escaped the problems of NCLB or have developed basic problem-solving skills through real-life experiences. Third, some dilution of the quality of students is to be expected with the increase in the absolute number of students being admitted. But something more serious is afoot<sup>16</sup> when even Harvard

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<sup>14</sup> Culling systemic criticisms of the academy by the practicing bar was rather difficult until the American Bar Association memorialized its concerns in 1992, in the MacCrate Report. See NARROWING THE GAP, *supra* note 4. Thereafter, the literature begins to supply empirical as well as anecdotal evidence that the practicing bar is increasingly disenchanted with the legal academy. See, e.g., THOMSON WEST, WHITE PAPER, RESEARCH SKILLS FOR LAWYERS AND LAW STUDENTS, 2, 4 (2007) (criticizing the legal academy for failing to adequately teach legal research); Aliza B. Kaplan & Kathleen Darvil, *Think [and Practice] Like a Lawyer: Legal Research for the New Millennials*, 8 LEGAL COMM. & RHETORIC: JALWD 153, 157-58 (2011); Molly Warner Lien, *Breach of Trust: Legal Education's Failure to Prepare Students for the Practice of Law*, 1 J. ASS'N LEGAL WRITING DIRECTORS 118, 119 (2002); Amy Vorenberg & Margaret Sova McCabe, *Practice Writing: Responding to the Needs of the Bench and Bar in First-Year Writing Programs*, 2 PHOENIX L. REV. 1, 4 (2010). Even the Carnegie Report seems more focused on the research of the academy rather than the complaints of the practicing bar. See SULLIVAN ET AL., *supra* note 2, at 128 (discussing how law schools can improve the profession).

<sup>15</sup> See No Child Left Behind Act of 2001, 20 U.S.C. § 6301 (2006) (discussing the purpose of NCLB).

<sup>16</sup> Anthony S. Niedwiecki, *Lawyers and Learning: A Metacognitive Approach to Legal Education*, 13 WIDENER L. REV. 33, 38 (2006).

The new focus on learning theory in some law schools and by a few law professors has probably been prompted by several factors, including fixing low bar passage rates, having to teach a more diverse student body, and addressing an increase in competition among the growing number of law schools. Many schools may have also been prompted by a perception that law students are less prepared out of undergraduate school, and students need to be given some basic instruction in reading, writing, and studying. The reality is that law students are different today than in the past, with the types of students

Law School provides problem-solving workshops for its first-year students.<sup>17</sup> Unfortunately, legal education is stuck with that buck, and unless K-12 and higher education change their currently misguided courses in the very near future, we have both ethical and legal obligations to our students to deliver what we promise.

Thus, our thesis is that real reform in the academy is not possible without addressing the cognitive deficiencies of our law students and that we must recognize that the Carnegie Report's presumption of academic preparedness may no longer be true for an increasing number of law students.<sup>18</sup> Part I of this Article outlines the critical-thinking and problem-solving skills required of practicing lawyers.<sup>19</sup> Part II outlines the legal academy's primary educational role in developing those skills then describes how an undergraduate degree no longer signals the attainment of basic problem-solving, critical-thinking, and communication foundations upon which those skills can be built.<sup>20</sup> Part III then links the academically underprepared learners with their maturational problems, which also hinder their critical-thinking and problem-solving skills.<sup>21</sup> Part IV gives hope and contextualizes these skills in neuroscience, aligning the development of cognitive processes with biological and neurological growth and maturity for this age

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going to law school changing dramatically over the past several decades.

*Id.* (footnotes omitted).

<sup>17</sup> Elaine McArdle, *An Innovative New Course Teaches Students to Solve Problems Right from the Start* (Video), HARV. L. SCH. (Feb. 23, 2010), [http://www.law.harvard.edu/news/spotlight/classroom/problem\\_solving.html](http://www.law.harvard.edu/news/spotlight/classroom/problem_solving.html).

<sup>18</sup> As the Carnegie Report opines:

[T]he students' intellectual skills have been honed prior to entering law school, at least if undergraduate grade point averages and admissions test scores tell the truth. These students may have developed their capacities through a variety of high school and college experiences, ranging from English literature to philosophy, physics, or engineering, or from more informal experiences in families, libraries, or jobs. Students with demonstrated analytical abilities very likely have also developed well-internalized skills of managing their own cognition by monitoring and diagnosing their own understanding and learning strategies. In short, such students typically enter law school with pre-existing intellectual scaffolds that have often become habitual and unconscious. This intellectual infrastructure supports their further work in becoming expert legal analysts in significant ways.

SULLIVAN ET AL., *supra* note 2, at 69.

<sup>19</sup> See *infra* Part I (overviewing the necessary critical-thinking and problem-solving skills of practicing lawyers).

<sup>20</sup> See *infra* Part II (indicating the importance of developing these skills and recognizing the shortcomings of undergraduate institutions in ensuring that these skills develop).

<sup>21</sup> See *infra* Part III (discussing why maturation problems hinder the development of critical-thinking and problem-solving skills).

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group.<sup>22</sup> This Article does not posit any particular solution to the problem, and the solutions may be varying and creative. But what the Article does hope to do is complement the “reformation” literature because, without having this conversation about the academically underprepared students, the legal academy will have a tough time repairing itself, regardless of its best intentions.

## I. THE GUNSLINGERS: CRITICAL THINKING IN THE PROFESSION

These days, the legal professoriate is deeply engaged in developing a significant body of literature on pedagogical and learning issues in the academy, indicating that there is a tacit recognition that we are facing a different kind of student. As a general matter, we often mark it down to generational differences and technological advances. But the deeper problem has eluded us. As a consequence, we assume that students who are academically underprepared are in need of the services of academic support personnel. Perhaps some of them are. However, the increasing academic underpreparedness is becoming systemic rather than singular. Thus, a systemic approach to connecting the dots to that deeper problem is vital. The dot we start with is the end result anticipated by both *Best Practices* and the Carnegie Report. This end result is a sophisticated set of cognitive skills unique to the law and within the nearly exclusive bailiwick of law schools to provide.

The reform texts anticipate that law schools will prepare students to be practice-ready. That is, law schools will teach students to “think like a lawyer,” with “the ability to resolve legal problems effectively and responsibly. . . . Law schools should help students acquire the attributes of effective, responsible lawyers including self-reflection and lifelong learning skills, intellectual and analytical skills, core knowledge and understanding of law, professional skills, and professionalism.”<sup>23</sup> There may be superficial disagreements about how to define “thinking like a lawyer,”<sup>24</sup> but all would likely agree that critical thinking and problem solving are essential to what it means to demonstrate competent legal skills.<sup>25</sup> Although cognitive science has focused little on what lawyers do

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<sup>22</sup> See *infra* Part IV (explaining neuroscience and its role in the development of these skills).

<sup>23</sup> STUCKEY ET AL., *supra* note 3, at 8.

<sup>24</sup> See, e.g., Larry O. Natt Gantt, II, *Deconstructing Thinking Like a Lawyer: Analyzing the Cognitive Components of the Analytical Mind*, 29 CAMPBELL L. REV. 413, 413 (2007).

<sup>25</sup> For purposes of addressing the over-arching cognitive problem, we do not distinguish between “thinking like a lawyer” and “doing like a lawyer.” See, e.g., Nancy B. Rapoport, *Is “Thinking Like a Lawyer” Really What We Want to Teach?*, 1 J. ASS’N LEGAL WRITING DIRECTORS 91, 94 (2002). As a practical matter, “doing like a lawyer” inherently includes

and how they think,<sup>26</sup> thinking like a lawyer is more than the retrieval of knowledge. Instead, lawyers must develop higher-order thinking skills for a particular professional subset of analysis. At the lowest level of cognitive processes developed in law school are the “fundamental educational processes associated with legal reasoning, the law, and lawyers themselves.”<sup>27</sup> These basic educational processes establish context because more advanced legal analysis “does not occur in a vacuum, but relates to a particular field (the law) and reflects the needs and objectives of persons playing specific roles (lawyers).”<sup>28</sup> Thus, the law school cognitive process starts with an “adequate core knowledge and understanding of the law” that creates a foundational understanding of the unique language and tools of the law.<sup>29</sup> At this level, one might imagine that students should be able to “read[] lengthy, complex, [and] abstract prose texts, . . . synthesiz[e] information[,] and mak[e] complex inferences.”<sup>30</sup>

Building upon this legal literacy, law schools then tease out the more sophisticated cognitive skills required of practicing lawyers: “Identifying and Diagnosing the Problem; . . . Generating Alternative Solutions and Strategies; . . . Developing a Plan of Action; . . . Implementing the Plan; [and] Keeping the Planning Process Open to New Information and New Ideas.”<sup>31</sup> Specific behaviors arising from these cognitive processes have been described as “‘case analysis, synthesis, deduction, induction, and analogical reasoning’” as well as “‘spotting and applying rules, recognizing corollaries, spotting holdings, . . . and recognizing logical syllogisms.’”<sup>32</sup> In its most theoretical sense, thinking like a lawyer “forces students to ‘domesticate

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“thinking like a lawyer.” See *id.* at 105–06 (asserting that practical, or skills, courses explicitly require facility with theory).

<sup>26</sup> Gary L. Blasi, *What Lawyers Know: Lawyering Expertise, Cognitive Science, and the Functions of Theory*, 45 J. LEGAL EDUC. 313, 314 (1995). But see Donald J. Kochan, “Learning” Research and Legal Education: A Brief Overview and Selected Bibliographical Survey, 40 SW. L. REV. 449, 449 (2011).

<sup>27</sup> STUCKEY ET AL., *supra* note 3, at 70.

<sup>28</sup> Wegner, *supra* note 1, at 892.

<sup>29</sup> STUCKEY ET AL., *supra* note 3, at 74.

<sup>30</sup> MARK KUTNER ET AL., *supra* note 11, at 3.

<sup>31</sup> Blasi, *supra* note 26, at 328. Blasi also opines that cognitive science can prove useful in determining how lawyers acquire problem-solving skills apart from those acquired in doctrinal classes. *Id.* at 315. For instance, legal employers want graduates who possess “competency, respect, trust, judgment, flexibility, communications skills, resilience, management skills, an ability to work with others, leadership, a strong work ethic, and a commitment to client service.” Lien, *supra* note 14, at 120.

<sup>32</sup> Wegner, *supra* note 1, at 897; see Niedwiecki, *supra* note 16, at 58. Niedwiecki notes that “[i]n addition, a lawyer must be able to think critically, read critically, and communicate clearly and effectively.” *Id.*



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doubt' and offers pragmatic strategies to do so: the recurring use of questions, a structured approach to reasoning, a phase shift in the nature of knowledge, conventions of legal literacy, an abstracted legal world, and superficial exposure to lawyers' roles and professional norms."<sup>33</sup> This evolution of cognitive skills from basic legal literacy to sophisticated reasoning about the law itself lies at the heart of the Carnegie Report's "cognitive apprenticeship" model for law schools.<sup>34</sup>

As an abstract proposition, there is little that is revolutionary in this model. Indeed, up until the past couple of decades, most of us would recognize this model as our own legal education: We absorbed how to think like a lawyer by listening to the ways in which our professors both read and discussed the law in the classroom and tested those problem-solving skills with extensive essay assessments, very much like real lawyers act, think, and write. The whole point of the education was focused on those higher level problem-solving skills and not necessarily on the specific doctrinal discipline while the mode of teaching was imitative rather than intentional. Among the reasons why that cognitive apprenticeship model is in difficulty now is because it presupposes a pre-existing problem-solving sophistication, the anticipated result from the cognitive apprenticeship of a liberal education. Unfortunately, law schools will have to dial back their expectations for pre-existing problem-solving skills if they hope to adopt any particular cognitive apprenticeship of their own because more students—by the decade—are entering law school without the foundational skills to be legal problem-solvers.

## II. THE O.K. CORRAL

The Carnegie Report's cognitive apprenticeship emphasizes the intentional teaching and observation of "the fundamental skills . . . related to memory, knowledge, comprehension, and interpretation."<sup>35</sup> The apprenticeship then advances to "the important skills that define effective lawyering: in developing evidence, interviewing, counseling, drafting documents, conducting research and

<sup>33</sup> STUCKEY ET AL., *supra* note 3, at 70–71; see Wegner, *supra* note 1, at 894.

<sup>34</sup> See Joan Middendorf & David Pace, *Decoding the Disciplines: A Model for Helping Students Learn Disciplinary Ways of Thinking*, NEW DIRECTIONS FOR TEACHING & LEARNING, Summer 2004, at 1, 2 (recognizing that "'cognitive apprenticeship'" involves comparing "the process of learning an academic discipline . . . with learning to function in a foreign culture"). See generally SULLIVAN ET AL., *supra* note 2 (examining the preparation of students for the profession of law).

<sup>35</sup> SULLIVAN ET AL., *supra* note 2, at 63.

negotiating.”<sup>36</sup> But the devil is in the details. First, the arc of the cognitive process needs to be articulated because it presupposes a hierarchy of skills that build upon each other from basic legal terms to highly sophisticated practice strategies. Second, and the point of this Article, is the cognitive starting point for entering law students: What critical-thinking skills must students have to even begin the cognitive apprenticeship as we know it today? Ultimately, if students do not have the skills for today’s cognitive apprenticeship, then what must law schools do to adapt?<sup>37</sup>

A. *The Gunfight: Critical Thinking in Law School*

If we start from the premise that legal problem solving can only evolve from more basic critical-thinking skills, we might start our journey with at least an elementary understanding of what critical thinking is. Unfortunately, epistemological disagreements fuel debates over what critical thinking is and whether it even matters, especially in higher education.<sup>38</sup> To the extent that how people learn and how the brain works remain mysteries, perhaps the better starting point to the journey is how we will know it when we see it. Thus, “[c]ritical thinking can include the thinker’s dispositions and orientations; a range of specific analytical, evaluative, and problem-solving skills; contextual influences; use of multiple perspectives; awareness of one’s own assumptions; capacities for metacognition; or a specific set of thinking processes or tasks.”<sup>39</sup> In other words, critical-thinking skills may be most

<sup>36</sup> *Id.* at 101.

<sup>37</sup> See Niedwiecki, *supra* note 16, at 37 (stating “[t]here has . . . never been a major change in the approach to legal education based on learning theory”).

<sup>38</sup> “[T]here is the problem of defining ‘critical thinking.’ Different definitions of the term abound. Not surprisingly, many college instructors and researchers report that this variability greatly impedes progress on all fronts.” Ahrash N. Bissell & Paula P. Lemons, *A New Method for Assessing Critical Thinking in the Classroom*, 56 BIOSCIENCE 66, 66 (2006) (citations omitted); see Paul F. Haas & Stuart M. Keeley, *Coping with Faculty Resistance to Teaching Critical Thinking*, 46 C. TEACHING 63, 63 (1998) (indicating that “other evidence suggests that many faculty have not embraced critical thinking as an essential value and, in fact, may not understand the concept as it has been constructed over the years by those convinced of its importance”).

<sup>39</sup> Martha L. A. Stassen et al., *Defining Critical Thinking in Higher Education: Determining Assessment Fit*, in 30 TO IMPROVE THE ACADEMY: RESOURCES FOR FACULTY, INSTRUCTIONAL, AND ORGANIZATIONAL DEVELOPMENT 126, 127 (Judith E. Miller & James E. Groccia eds., 2011); see Maryellen Weimer, *Critical Thinking: Definitions and Assessments*, THE TEACHING PROFESSOR (Magna Publ’ns, Madison, Wis.), Dec. 2011, at 8 (discussing the different elements critical thinking may encompass); *Strategy List: 35 Dimensions of Critical Thought*, CRITICAL THINKING COMMUNITY, <http://www.criticalthinking.org/pages/strategy-list-35-dimensions-of-critical-thought/466> (last visited Aug. 23, 2013). More epistemologically but also essentially behavioral is the following more detailed definition of “critical thinking”:

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easily defined by the behaviors and habits of the mind that we expect law students to have when they graduate from law school so as to function like lawyers.

What we also know to be true is that these behaviors are the destination, not the beginning. This level of critical thinking is more than the mere retrieval of information, like memorizing the elements of negligence or the rules of evidence or the other search words one could easily retrieve from a computer database. Instead, we anticipate that legal education will add the ability to solve client problems when suing for negligence and using the rules of evidence to try that case. Working with the ineluctable proposition that critical thinking and problem solving are built on other, more basic cognitive skills, we have to determine what cognitive behaviors are necessary before thinking like a lawyer can even begin.

One of the most useful heuristic tools for examining the building blocks of increasingly sophisticated cognitive skills is Bloom's *Taxonomy of Educational Objectives* ("Taxonomy").<sup>40</sup> This Taxonomy of cognitive skills "includes those objectives which [sic] deal with the recall or recognition of knowledge and the development of intellectual abilities

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"We understand critical thinking to be purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based. C[ritical thinking] is essential as a tool of inquiry. As such, [critical thinking] is . . . a pervasive and self-rectifying human phenomenon. The ideal critical thinker is habitually inquisitive, well-informed, trustful of reason, open-minded, flexible, fair-minded in evaluation, honest in facing personal biases, prudent in making judgments, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused in inquiry, and persistent in seeking results which are as precise as the subject and the circumstances of inquiry permit. Thus, educating strong critical thinkers means working toward this ideal. It combines developing [critical-thinking] skills with nurturing those dispositions which consistently yield useful insights and which are the basis of a rational and democratic society."

Peter A. Facione, *Critical Thinking: What It Is and Why It Counts*, INSIGHT ASSESSMENT 1, 26 (2013), [http://www.insightassessment.com/pdf\\_files/what&why2011.pdf](http://www.insightassessment.com/pdf_files/what&why2011.pdf).

<sup>40</sup> David R. Krathwohl & Lorin W. Anderson, *Merlin C. Wittrock and the Revision of Bloom's Taxonomy*, 45 EDUC. PSYCHOLOGIST 64, 64 (2010). But see Richard W. Paul, *Bloom's Taxonomy and Critical Thinking Instruction*, EDUC. LEADERSHIP, May 1985, at 36, 39, available at [http://www.ascd.org/ASCD/pdf/journals/ed\\_lead/el\\_198505\\_paul.pdf](http://www.ascd.org/ASCD/pdf/journals/ed_lead/el_198505_paul.pdf) (acknowledging that Bloom's Taxonomy is a "tour de force" but criticizing its "one-sided hierarchical" approach).

and skills.”<sup>41</sup> As originally conceived, “each level of the system [was built] on the successful completion of the previous levels,”<sup>42</sup> and “[t]he categories were ordered from simple to complex and from concrete to abstract.”<sup>43</sup> Constructed as a way to better define expected student behaviors in higher education, the Taxonomy also propounds it is “concerned [with] the changes produced in individuals as a result of educational experiences . . . . Therefore, th[e] taxonomy is designed to be a classification of the student behaviors which [sic] represent the intended outcomes of the educational process.”<sup>44</sup> Thus, the Taxonomy deals with behaviors—actual and intended—after instruction as evidence of increasingly sophisticated cognitive skills.<sup>45</sup>

The original six levels of Bloom’s Taxonomy consisted of an increasingly more challenging cognitive process: knowledge, comprehension, application, analysis, synthesis, and evaluation.<sup>46</sup> The recently revised Taxonomy is similar but is no longer treated as a formal, cumulative hierarchy.<sup>47</sup> The revised Taxonomy starts with the premise

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<sup>41</sup> TAXONOMY OF EDUCATIONAL OBJECTIVES: THE CLASSIFICATION OF EDUCATIONAL GOALS, HANDBOOK 1: COGNITIVE DOMAIN 7 (Benjamin S. Bloom ed., 1956) [hereinafter BLOOM’S TAXONOMY].

<sup>42</sup> Darcy Haag Granello, *Promoting Cognitive Complexity in Graduate Written Work: Using Bloom’s Taxonomy as a Pedagogical Tool to Improve Literature Reviews*, 40 COUNS. EDUC. & SUPERVISION 292, 294–95 (2001) (“The levels are assumed to be cumulative, with each level of the system building on the successful completion of the previous levels.”); Christine M. Venter, *Analyze This: Using Taxonomies to “Scaffold” Students’ Legal Thinking and Writing Skills*, 57 MERCER L. REV. 621, 637 (2006) (“Bloom anticipated that each level of the system would build on the successful completion of the previous levels.”).

<sup>43</sup> David R. Krathwohl, *A Revision of Bloom’s Taxonomy: An Overview*, 41 THEORY INTO PRAC. 212, 212 (2002) (comparing the original Taxonomy and the revised Taxonomy).

Our attempt to arrange educational behaviors from simple to complex was based on the idea that a particular simple behavior may become integrated with other equally simple behaviors to form a more complex behavior. Thus our classifications may be said to be in the form where behaviors of type A form one class, behaviors of type AB form another class, while behaviors of type ABC form still another class. If this is the real order from simple to complex, it should be related to an order of difficulty such that problems requiring behavior A alone should be answered correctly more frequently than problems requiring AB. We have studied a large number of problems occurring in our comprehensive examinations and have found some evidence to support this hypothesis.

BLOOM’S TAXONOMY, *supra* note 41, at 18.

<sup>44</sup> BLOOM’S TAXONOMY, *supra* note 41, at 12.

<sup>45</sup> *Id.*

<sup>46</sup> *Id.* at 18.

<sup>47</sup> A TAXONOMY FOR LEARNING, TEACHING, AND ASSESSING: A REVISION OF BLOOM’S TAXONOMY OF EDUCATIONAL OBJECTIVES 309 (Loren W. Anderson et al. eds., Abridged ed. 2001) [hereinafter REVISED TAXONOMY]. “[R]esearch provided empirical evidence for a cumulative hierarchy for the three middle categories [of the original Taxonomy],

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that knowledge is a distinct “dimension” upon which any or all of the cognitive process dimensions act: remembering, understanding, application, analysis, evaluation, and creation.<sup>48</sup> Thus, the revision’s cognitive processes tend to overlap, making the Taxonomy more “teacher-friendly” while still recognizing the empirical evidence that indicates the increasing complexity of succeeding steps of a hierarchy.<sup>49</sup> One might quibble with the exactitude of either Taxonomy,<sup>50</sup> but nothing better exists to serve a simplistic yet graphic example of a hierarchy of cognitive skills easily recognizable by the legal academy. Indeed, either or both Taxonomies have guided several pieces of legal scholarship about teaching legal analysis.<sup>51</sup> And in the absence of some sort of unified and universally recognized learning theory, either Taxonomy is appealing to a lawyerly mind because it presents a series of cognitive processes that “are abstractions of reality that simplify in order to facilitate perceptions of underlying orderliness.”<sup>52</sup>

In either Taxonomy, knowledge forms the foundation for all other (or later) cognitive processes. In the original Taxonomy, the cognitive

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Comprehension, Application, and Analysis, but empirical support was weak for ordering the last two [Synthesis and Evaluation].” *Id.*; see Krathwohl, *supra* note 43, at 218.

<sup>48</sup> REVISED TAXONOMY, *supra* note 47, at 5. The revised Taxonomy replaces a uni-dimensional hierarchy with a two-dimensional synthesis of knowledge with cognitive processes. *Id.*

<sup>49</sup> See *id.* at 267–68 (charting the different cognitive process dimensions and their overlapping functions). For instance, the processes of Bloom’s Taxonomy, in the context of teaching legal writing, “are recursive and not merely hierarchical.” Venter, *supra* note 42, at 638.

<sup>50</sup> Developments in cognitive science and expert-novice research suggest that a single taxonomy may not be appropriate. “The principles of cognitive science would dictate the development of numerous taxonomies, one for each distinctive discipline. This necessity follows from the proposition that the character of essential knowledge and procedures varies from domain to domain. Therefore, the objectives of learning and instruction must also be domain specific.” William D. Rohwer, Jr. & Kathryn Sloane, *Psychological Perspectives*, in BLOOM’S TAXONOMY: A FORTY-YEAR RETROSPECTIVE 41, 61 (Lorin W. Anderson & Lauren A. Sosniak eds., 1994); see Paul D. Callister, *Time to Blossom: An Inquiry into Bloom’s Taxonomy as a Hierarchy and Means for Teaching Legal Research Skills*, 102 LAW LIBR. J. 191, 199–212 (2010) (adapting Bloom’s Taxonomy to legal research). Bloom’s Taxonomy itself is not without its critics, as taxonomies in general might be. See, e.g., Edward J. Furst, *Bloom’s Taxonomy: Philosophical and Educational Issues*, in BLOOM’S TAXONOMY: A FORTY-YEAR RETROSPECTIVE, *supra*, at 28, 37–38. This is especially true if the Taxonomy is viewed as descriptive as opposed to normative. However, “the notion of hierarchy has much appeal. And rightly so, for hierarchy is fundamental in the make-up of skills, abilities, and conceptual organizations of subject matter.” *Id.* at 37.

<sup>51</sup> See, e.g., Hillary Burgess, *Deepening the Discourse Using the Legal Mind’s Eye: Lessons from Neuroscience and Psychology that Optimize Law School Learning*, 29 QUINNIPIAC L. REV. 1 (2011); Callister, *supra* note 50; Kurt M. Saunders & Linda Levine, *Learning to Think Like a Lawyer*, 29 U.S.F.L. REV. 121, 133–35 (1994); Venter, *supra* note 42, at 637–39.

<sup>52</sup> REVISED TAXONOMY, *supra* note 47, at 301.

skills move from knowledge and comprehension to application and analysis, with synthesis and evaluation as the highest orders of thinking.<sup>53</sup> In the revised Taxonomy, knowledge is a co-existent dimension because cognitive processes rarely exist in isolation<sup>54</sup> and are usually contextualized by the subject matter to which they are applied.<sup>55</sup> Those basic cognitive processes also include an array of, sometimes recursive, behaviors of differing difficulty and sophistication in the categories of remembering, understanding, application, analysis, evaluation, and creation.<sup>56</sup> For example, being able to use knowledge for any cognitive process requires remembering, the retrieval of “relevant knowledge from long-term memory” by recognizing and recalling.<sup>57</sup> Acting upon or with the two remembering processes is an array of seventeen designated cognitive processes loosely categorized within the other five cognitive dimensions.<sup>58</sup> Of those cognitive dimensions, the more sophisticated are analysis, evaluation, and creation, or—according to the original Taxonomy—analysis, synthesis, and evaluation.<sup>59</sup>

These heuristic benchmarks are familiar to the legal academy. Thus, if the basic law school process for thinking like a lawyer requires an understanding of core legal *knowledge*, the student then must learn to *synthesize* this knowledge and *apply* it to new situations to anticipate the ever-variable client’s problem. More specifically, thinking like a lawyer will require the student to *apply* “a procedure to a familiar task” and to *apply* “a procedure to an unfamiliar task.”<sup>60</sup> Inherent in that process of applying known information to new situations will also require the student to *analyze*, perhaps by differentiation and organization.<sup>61</sup> The student may have to go through the processes of generating hypotheses to *create* a solution, or even a variety of solutions, all of which will entail

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<sup>53</sup> See *supra* text accompanying note 46 and accompanying text (highlighting the six major classes of Bloom’s original Taxonomy).

<sup>54</sup> REVISED TAXONOMY, *supra* note 47, at 89.

<sup>55</sup> *Id.* at 88. If an educational outcome is a demonstrable cognitive behavior, that: objective contains a verb and a noun. The verb generally describes the intended cognitive process. The noun generally describes the knowledge students are expected to acquire or construct. Consider the following example: “The student will learn to distinguish (the cognitive process) among confederal, federal, and unitary systems of government (the knowledge).”

*Id.* at 4–5.

<sup>56</sup> See *id.* at 67–68.

<sup>57</sup> *Id.* at 67.

<sup>58</sup> See *id.* at 67–68.

<sup>59</sup> *Id.*

<sup>60</sup> *Id.* at 67.

<sup>61</sup> *Id.* at 68.

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a planning and production process to effectuate the solution.<sup>62</sup> Last, the student must continually *evaluate* the analysis and solution(s) by checking and critiquing.<sup>63</sup>

There is little doubt that the legal academy's instruction focuses on these higher-order cognitive processes<sup>64</sup>—application, analysis, synthesis, evaluation, creation—both by practice and by nomenclature. They are the processes we demonstrate to our students and the words we utter to explain what we are doing. A student's success in law school—not to mention in the profession—requires mastery of these processes, more so than even the retrieval of doctrinal knowledge. In the classroom, professors initially emphasize “[a]nalytical skills” in their first-year pedagogy: “fact analysis, case analysis and synthesis, statutory analysis, argumentation, and critical evaluation of legal and ethical issues. . . . as . . . components of thinking like a lawyer.”<sup>65</sup> As the Taxonomies reveal, higher-order problem-solving skills are part of the “practical” pedagogy, which includes “legal research, oral and written communication, counseling, negotiating, planning, and interviewing.”<sup>66</sup> The essence of what constitutes legal education is therefore a peculiar body of knowledge to which one must engage increasingly sophisticated critical-thinking and problem-solving skills essential to becoming practice-ready.

But these critical-thinking skills are not peculiar to the legal academy. Bloom's Taxonomy, as originally formulated, was meant to assist higher education in observing behaviors as evidence of increasingly sophisticated thinking skills in different disciplines. Indeed, developing and honing critical-thinking skills have long been considered, theoretically, one of the primary missions of higher education. As a consequence, the legal academy presumed their students' familiarity with these processes—application, analysis, synthesis, evaluation, creation—as a function of their undergraduate training and a foundation for the new discipline of law. Unfortunately,

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<sup>62</sup> *Id.*

<sup>63</sup> *Id.*

<sup>64</sup> Even outside the academy, the highest orders of critical thinking under either Taxonomy are analysis, synthesis, evaluation, and creation. Middendorf & Pace, *supra* note 34, at 1; Venter, *supra* note 42, at 637; see Callister, *supra* note 50, at 201 (graphically comparing the original and revised Taxonomies). Other authorities have added “application” as a higher-order thinking skill. *E.g.*, Bissell & Lemons, *supra* note 38, at 67; Alex Y. Zheng et al., *Application of Bloom's Taxonomy Debunks the “MCAT Myth,”* 319 SCI. 414, 414 (2008) (comparing the higher-order thinking skills required for AP Biology tests, undergraduate biology exams, and the Medical College Admission Test). See generally BLOOM'S TAXONOMY, *supra* note 41, at 18.

<sup>65</sup> Saunders & Levine, *supra* note 51, at 125.

<sup>66</sup> *Id.*

that presumption is no longer valid so law schools are not only tasked with teaching students how to think like a lawyer but with just how to think.<sup>67</sup>

*B. Packing a Knife: The Academically Underprepared Student*

If the assumption is correct that law schools' chief responsibility is to teach problem-solving skills—and there is no reason to think it is not—then we must deconstruct another assumption, that our students are matriculating with *some* problem-solving skills. In other words, legal education has traditionally started with the assumption that students bring some problem-solving skills to the table, so that all law schools need to do is add the layer of legal analysis to students' pre-existing skills. Thus, the assumption is that the legal academy only has to add value to pre-existing, higher-order thinking skills but with a different knowledge dimension and couched into a slightly different problem-solving paradigm unique to “thinking like a lawyer.” However, higher education is teaching inadequate higher-order thinking skills to the majority of students and no higher-order thinking skills at all to a significant number of students. There is every reason to believe that many matriculating law students suffer from those deficiencies.

This unfortunate phenomenon has been hurtling toward us for the past twenty or thirty years. To place this problem in perspective and suggest the current legal education “crisis” is tied to timing because of a devolution in U.S. education in general, a review of the National Assessment of Adult Literacy (“NAAL”) is instructive by illuminating that, over the past thirty years, Americans' proficiency in basic problem-solving skills has declined.<sup>68</sup> The three specific literacy scales on the NAAL are prose literacy,<sup>69</sup> document literacy,<sup>70</sup> and quantitative literacy.<sup>71</sup> Between 1985 and 1992, the raw score average declined for the

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<sup>67</sup> Lest we believe the LSAT adequately measures higher-order thinking skills, a recent study of the MCAT points to the contrary. Zheng et al., *supra* note 64, at 414–15. In a study meant to defend the MCAT from being less rigorous than other exams—such as the GRE, AP Biology, undergraduate, and medical school exams—a discouraging (albeit not significant to the research) conclusion is that the highest Taxonomy order that a multiple-choice exam can reach is analysis, the fourth level. *Id.* at 415. Such an examination does not (and perhaps cannot) evaluate the higher-order skills of synthesis and evaluation. *Id.*

<sup>68</sup> MARK KUTNER ET AL., *supra* note 11, at 11.

<sup>69</sup> “The knowledge and skills needed to perform prose tasks (i.e., to search, comprehend, and use information from continuous texts).” *Id.* at 2.

<sup>70</sup> “The knowledge and skills needed to perform document tasks (i.e., to search, comprehend, and use information from noncontinuous texts in various formats).” *Id.*

<sup>71</sup> “The knowledge and skills required to perform quantitative tasks (i.e., to identify and perform computations, either alone or sequentially, using numbers embedded in printed materials).” *Id.*



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traditional law student age cohort—young adults between twenty-one and twenty-five—on all three scales.<sup>72</sup> Even more frightening, the scores of the 21–25 age cohort (1985) declined in all three categories when they aged into the 28–32 age cohort in 1992; in other words, their proficiency declined with age.<sup>73</sup>

The 2003 NAAL assessment then measured the same three literacy scales and compared them to the 1992 assessment. The age cohorts were shifted slightly as were the categories of literacy attainment: the 2003 report segregated out four levels of each literacy scale's scores as "Below Basic," "Basic," "Intermediate," and "Proficient."<sup>74</sup> In 2003, the potential law student cohort's (19–24 years) mean scores remained fairly static, with insignificant declines in raw scores across all three literacy scales.<sup>75</sup> But the 2003 report noted declines in the "proficient" level.<sup>76</sup> Given the cognitive skills demanded in law school, the tasks at the "proficient" level are most salient: "[p]roficient indicates skills necessary to perform more complex and challenging literacy activities."<sup>77</sup> A person proficient at prose literacy is able to read "lengthy, complex, [and] abstract prose texts as well as synthesiz[e] information and mak[e] complex inferences," such as "comparing viewpoints in two editorials."<sup>78</sup> Proficiency in document literacy requires "integrating, synthesizing, and analyzing multiple pieces of information located in complex documents," such as "interpreting a table about blood pressure, age, and physical activity."<sup>79</sup> And an adult proficient at quantitative literacy is able to "locat[e] more abstract quantitative information and [use] it to solve multi-step problems when the arithmetic operations are not easily inferred and the problems are more complex," such as "computing and comparing the cost per ounce of food items."<sup>80</sup>

According to the NAAL comparison of the 1992 and 2003 data, the percentage of college graduates proficient in prose literacy declined from 40% to 31%; proficient document literacy declined from 37% to 25%; and proficient quantitative literacy stayed static at 31%.<sup>81</sup> For adults who had taken graduate classes or had graduate degrees, the declines in

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<sup>72</sup> IRWIN S. KIRSCH ET AL., U.S. DEP'T. OF EDUC., NAT'L CTR. FOR EDUC. STAT., NCES 1993-275, ADULT LITERACY IN AMERICA: A FIRST LOOK AT THE FINDINGS OF THE NATIONAL ADULT LITERACY SURVEY 24 (3d ed. 2002).

<sup>73</sup> *Id.*

<sup>74</sup> MARK KUTNER ET AL., *supra* note 11, at 3.

<sup>75</sup> *Id.* at 10–11.

<sup>76</sup> *Id.* at 11.

<sup>77</sup> *Id.* at 3.

<sup>78</sup> *Id.*

<sup>79</sup> *Id.*

<sup>80</sup> *Id.*

<sup>81</sup> *Id.* at 15.

proficiency were nearly as steep: in prose literacy, from 51% to 41%; in document literacy, from 45% to 31%; and in quantitative literacy, from 39% to 36%.<sup>82</sup> So in the period of a mere eleven years, proficient prose literacy of American adults—the ability to compare viewpoints in two editorials—declined by 25% in the pool of college graduates and 20% for graduate degrees.<sup>83</sup> And so on.

NCLB can rightly be blamed for wreaking any number of harms to the age cohort that is starting to matriculate in law school. But NCLB, enacted in 2001, is not the culprit in the 2003 NAAL assessment. Instead, higher education itself has become a major factor in the degradation of basic critical-thinking skills for many of our students. Indeed, the empirical evidence shows little or no institutional progress in learning and thinking in higher education for a large number of college graduates.

In 2011, sociologists Richard Arum and Josipa Roksa published their findings at an interim point in their longitudinal research to assess four years of student learning at twenty-four four-year colleges and universities.<sup>84</sup> Their book, *Academically Adrift: Limited Learning on College Campuses* (“*Academically Adrift*”), documented the learning trajectories of more than 2,300 students through the administration of an examination at the beginning of their freshman year and another at the end of their sophomore year.<sup>85</sup> Arum and Roksa’s conclusions are a devastating indictment of higher education’s failure to deliver on “core outcomes espoused by all of higher education—critical thinking, analytical reasoning, problem solving and writing.”<sup>86</sup>

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<sup>82</sup> *Id.* It is also instructive to review the data on the prose and document literacy scales in which proficient scores declined in all the age brackets of 16–18; 19–24; 25–39; and 40–49, and sometimes significantly so, until one reaches the 50–64 and the 65+ ranges, where they rise. *Id.* at 11.

<sup>83</sup> See *supra* text accompanying notes 81–82 (listing the percentage drop in proficient prose literacy scores among adults).

<sup>84</sup> RICHARD ARUM & JOSIPA ROKSA, *ACADEMICALLY ADRIFT: LIMITED LEARNING ON COLLEGE CAMPUSES* 20 (2011).

<sup>85</sup> *Id.*

<sup>86</sup> *Id.* at 21. Arum and Roksa highlight four core “important lessons” from their research. *Id.* at 30.

First, in terms of undergraduate learning, four-year colleges and universities and students attending them are too often “academically adrift.” While U.S. higher education is expected to accomplish many tasks, [they] draw on students’ reports of their collegiate experiences to demonstrate that undergraduate learning is rarely adequately prioritized. Second, gains in student performance are disturbingly low; a pattern of limited learning is prevalent on contemporary college campuses. Third, individual learning in higher education is characterized by persistent and/or growing inequality. Fourth, while

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Starting from the proposition that “[t]eaching students to think critically and communicate effectively are . . . the principal goals of higher education,” Arum and Roksa employed the Collegiate Learning Assessment (the “CLA”) to test whether higher education delivers on that proposition.<sup>87</sup> The CLA consists of “a performance task and two analytical writings tasks (i.e., to make an argument and to break an argument).”<sup>88</sup> The published results for the two-year benchmark focus on the performance task as the CLA’s “most well-developed and sophisticated” component.<sup>89</sup> The performance task is not designed to test subject matter but “allows students ninety minutes to respond to a writing prompt that is associated with a set of background documents.”<sup>90</sup> The written result is then scored by a rubric with criteria for assessing problem solving, critical thinking, analytical reasoning, and written communication (presentation, structure, effectiveness, persuasion, mechanics, and reader interest).<sup>91</sup> What the researchers discovered was disheartening. On average, students improved only 0.18 of a standard deviation—or seven percentile points—from the beginning of their freshman year to the end of their sophomore year.<sup>92</sup>

Stated differently, freshmen who enter higher education at the 50th percentile would reach a level equivalent to the 57th percentile of an incoming freshman class by the end of their sophomore year. Three semesters of college education thus have a barely noticeable impact on students’ skills in critical thinking, complex reasoning, and writing.<sup>93</sup>

In the follow-up analysis for the entire four years, seniors had gained less than half of a standard deviation—0.47—over freshman skills.<sup>94</sup> This is less than half the progress documented in higher education in the

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the overall level of learning is low, there is notable variation both within and across institutions that is associated with measurable differences in students’ educational experiences.

*Id.*; see Thomas H. Benton, *A Perfect Storm in Undergraduate Education, Part I*, THE CHRON. HIGHER EDUC. (Feb. 20, 2011), <http://chronicle.com/article/A-Perfect-Storm-in/126451/>.

<sup>87</sup> ARUM & ROKSA, *supra* note 84, at 20, 35.

<sup>88</sup> *Id.* at 21.

<sup>89</sup> *Id.*

<sup>90</sup> *Id.*

<sup>91</sup> *Id.* at 22.

<sup>92</sup> *Id.* at 35.

<sup>93</sup> *Id.*

<sup>94</sup> RICHARD ARUM ET AL., IMPROVING UNDERGRADUATE LEARNING: FINDINGS AND POLICY RECOMMENDATIONS FROM THE SSRC-CLA LONGITUDINAL PROJECT 5 (2011).

1980s, when seniors had a full standard deviation advantage over freshmen.<sup>95</sup> As for absolute numbers of students who had made no progress whatsoever, at least 45% had no statistically significant gains in critical-thinking, analytical-reasoning, and communication skills by the end of their sophomore year,<sup>96</sup> while 36% demonstrated no improvement after four years.<sup>97</sup>

Lest the Arum and Roksa study be criticized as being based on a faulty testing instrument, similar results were gathered in another study, the Wabash National Study,<sup>98</sup> with a 0.44 standard deviation improvement at the end of four years, using a “close-ended, multiple choice assessment indicator of critical thinking and complex reasoning (ACT’s Collegiate Assessment of Academic Proficiency).”<sup>99</sup> The Wabash National Study similarly noted that 30% of those tested showed no growth or declined in critical-thinking skills.<sup>100</sup> Although cautioning that Arum and Roksa’s study cannot account for the “value-added” measures of college attendance,<sup>101</sup> researchers noted that other studies “do not diminish the potential importance of the findings of *Academically Adrift* and the fact that these findings have essentially met the standard of independent replication with different samples of institutions and students and a different measure of critical thinking skills.”<sup>102</sup>

Although Arum and Roksa offer several reasons for this decline, one of the crudest measures of the rigor of higher education—time spent on academic activities—is telling. Today’s full-time college students spend, on average, twenty-seven hours on *any* academic activities, both in the class and studying.<sup>103</sup> High school seniors spend more time than that just by being in the classroom.<sup>104</sup> Study time in college has fallen 50% in the past fifty years: average study time was twenty-five hours per week in the 1960s, twenty hours per week in the 1980s, and thirteen hours per

<sup>95</sup> ARUM & ROKSA, *supra* note 84, at 35–36.

<sup>96</sup> *Id.* at 36.

<sup>97</sup> ARUM ET AL., *supra* note 94, at 4.

<sup>98</sup> *How Do Students Change Over Four Years of College?*, WABASH NAT’L STUDY OF LIBERAL ARTS EDUC. (2013), <http://www.liberalarts.wabash.edu/storage/4-year-change-summary-website.pdf>. The Wabash National Study compiled data from 2200 students located at seventeen four-year colleges and universities, with tests administered to students upon arriving on campus, at the end of freshman year, and at the end of senior year. *Id.*

<sup>99</sup> ARUM, ET AL., *supra* note 94, at 5.

<sup>100</sup> *How Do Students Change Over Four Years of College?*, *supra* note 98.

<sup>101</sup> The notion that “value-added” is a useful metric for assessing higher education is not, itself, without critics. See, e.g., James A. Yunker, *The Dubious Utility of the Value-Added Concept in Higher Education: The Case of Accounting*, 24 ECON. EDUC. REV. 355 (2005).

<sup>102</sup> Ernest T. Pascarella et al., *How Robust Are the Findings of Academically Adrift?*, CHANGE, May–June 2011, at 20, 24.

<sup>103</sup> ARUM & ROKSA, *supra* note 84, at 3.

<sup>104</sup> *Id.*

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week in 2003.<sup>105</sup> Ironically, this decline in study time has had no impact on students' grade point averages.<sup>106</sup>

At a more specific level, undergraduate education is simply no longer as rigorous, which unfortunately fits the consumer-student who wants the best educational credentials with the least amount of effort.<sup>107</sup>

Fifty percent of students in our sample reported that they had not taken a single course during the prior semester that required more than twenty pages of writing, and one-third had not taken one that required even forty pages of reading per week. Combining these two indicators, we found that a quarter of the students in the sample had not taken any courses that required either of these two requirements, and that only 42 percent had experienced *both* a reading and writing requirement of this character during the prior semester.<sup>108</sup>

Lest one assumes an anomaly arising from a smaller set of subjects, another national study of 587 four-year colleges and universities—with approximately 300,000 students—revealed that 83% of freshmen and 51% of seniors reported they had not written a paper of twenty or more pages the preceding academic year.<sup>109</sup>

Not all students graduate from college with few or limited critical-thinking skills:

[E]xceptional students, who have demonstrated impressive growth over time on CLA performance, exist in all the settings we examined. In addition, students attending certain high-performing institutions had more beneficial college experiences in terms of experiencing rigorous reading/writing requirements and spending greater numbers of hours studying. Students attending these institutions demonstrated significantly higher

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<sup>105</sup> *Id.*; see Philip Babcock & Mindy Marks, *Leisure College, USA: The Decline in Student Study Time*, AM. ENTERPRISE INST. FOR PUB. POL'Y RES. 1 (Aug. 2010), <http://www.aei.org/files/2010/08/05/07-EduO-Aug-2010-g-new.pdf> (indicating a 1960's student studied twenty-four hours a week while today's student studies only fourteen hours a week).

<sup>106</sup> ARUM & ROKSA, *supra* note 84, at 4.

<sup>107</sup> *See id.* at 70.

<sup>108</sup> *Id.* at 71.

<sup>109</sup> *Id.*

gains in critical thinking, complex reasoning and writing skills over time than students enrolled elsewhere.<sup>110</sup>

But given the bleak numbers, we know it is statistically improbable that only those accomplished students are entering law school. Once again, if we are honest with ourselves, then we should recognize that an increasing number of those students with high LSATs and impressive GPAs do not possess some of the basic critical-thinking skills that the academy has long taken for granted in its entering classes:<sup>111</sup> “Assuming, perhaps, that [the] classical [liberal-arts] curriculum still reigns in American schools, law professors expect entering law students to be equipped with the basic linguistic and analytical skills to rapidly grasp the techniques of case and statutory analysis.”<sup>112</sup> However, the evidence is to the contrary.

### III. DRIFTERS OR HOMESTEADERS?

#### A. *Drifters: The Millennial Generation*

Born between 1982 and 2001, the Millennial Generation<sup>113</sup> started law school in 2004 and will fill the majority of law school classrooms for the next fifteen to twenty years.<sup>114</sup> Neil Howe and William Strauss, the “generations” theorists that described this generation in 2000 as “the next great generation,”<sup>115</sup> named seven core traits of Millennials. According to Howe and Strauss, Millennials are special, sheltered, confident, team-oriented, achieving, pressured, and conventional.<sup>116</sup> Howe and Strauss’s optimistic view of Millennials is not without its critics,<sup>117</sup> and, as time has passed, others have pointed out a dark side to

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<sup>110</sup> *Id.* at 122.

<sup>111</sup> The problems are even worse for minority students, especially African-Americans, where the inequalities in critical thinking, complex reasoning, and writing competencies increase in college. *Id.*

<sup>112</sup> James Etienne Viator, *Legal Education’s Perfect Storm: Law Students’ Poor Writing and Legal Analysis Skills Collide with Dismal Employment Prospects, Creating the Urgent Need to Reconfigure the First-Year Curriculum*, 61 CATH. U. L. REV. 735, 753 (2012).

<sup>113</sup> DAVID I. C. THOMSON, LAW SCHOOL 2.0: LEGAL EDUCATION FOR A DIGITAL AGE 14 (2009) (stating that the Millennial generation is also called “Generation Y” or “Net Generation”); Leslie Larkin Cooney, *Giving Millennials a Leg-Up: How to Avoid the “If I Knew Then What I Know Now” Syndrome*, 96 KY. L.J. 505, 505 (2007–2008).

<sup>114</sup> THOMSON, *supra* note 113, at 14.

<sup>115</sup> See generally NEIL HOWE & WILLIAM STRAUSS, MILLENNIALS RISING: THE NEXT GREAT GENERATION (2000) (arguing that the Millennials will become the next great generation).

<sup>116</sup> *Id.* at 43–44.

<sup>117</sup> See, e.g., Michael Wilson & Leslie E. Gerber, *How Generational Theory Can Improve Teaching: Strategies for Working with the “Millennials,”* 1 CURRENTS IN TEACHING &

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these traits.<sup>118</sup> Millennials are said to be special because they were planned and wanted by their parents, who sometimes had a change of heart late in their child-bearing years about their decision not to have children.<sup>119</sup> They were also brought up under an educational system that had embraced the self-esteem movement,<sup>120</sup> where every child received an award just for showing up.<sup>121</sup>

Howe and Strauss found Millennials sheltered because of all the safety rules enacted for them as children.<sup>122</sup> Millennials are further sheltered by their “helicopter parents” who swoop in and take care of their children’s problems instead of letting them figure things out for themselves. What is more, helicopter parents keep hovering long after their children have graduated from high school and college.<sup>123</sup>

Millennials are seen as confident and optimistic about their abilities and their futures.<sup>124</sup> Besides this, they are intelligent, ambitious, and are committed to making the world a better place.<sup>125</sup> However, their confidence is not always grounded in reality. For example, 51% of recent high school students thought that they would obtain graduate or professional degrees, when the fact is that “only 9[%] of 25- to 34-year-old high school graduates actually hold these degrees.”<sup>126</sup> In 1976, high school students had much less confidence; only 27% thought they would

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LEARNING, Fall 2008, at 29, 30 (commenting that Howe and Strauss failed to “deal adequately with the demographics and social reality of race, ethnicity and class”).

<sup>118</sup> See generally MARK BAUERLEIN, *THE DUMBEST GENERATION: HOW THE DIGITAL AGE STUPEFIES YOUNG AMERICANS AND JEOPARDIZES OUR FUTURE* (2008) (stating that Millennials are academically unprepared because of their overuse of technology); JEAN M. TWENGE, *GENERATION ME: WHY TODAY’S YOUNG AMERICANS ARE MORE CONFIDENT, ASSERTIVE, ENTITLED—AND MORE MISERABLE THAN EVER BEFORE* (2006) (arguing that Millennials’ traits can have negative consequences for them and for others).

<sup>119</sup> HOWE & STRAUSS, *supra* note 115, at 76, 80.

<sup>120</sup> TWENGE, *supra* note 118, at 65 (“Even the book sponsored by the California Task Force to Promote Self-Esteem and Personal and Social Responsibility . . . found that self-esteem isn’t linked to academic achievement, good behavior, or any other outcome the Task Force was formed to address.”).

<sup>121</sup> RON ALSOP, *THE TROPHY KIDS GROW UP: HOW THE MILLENNIAL GENERATION IS SHAKING UP THE WORKPLACE* 102 (2008).

<sup>122</sup> HOWE & STRAUSS, *supra* note 115, at 43.

<sup>123</sup> See Stephanie Armour, ‘Helicopter’ Parents Hover When Kids Job Hunt, *USA TODAY* (Apr. 23, 2007, 11:17 PM), [http://usatoday30.usatoday.com/money/economy/employment/2007-04-23-helicopter-parents-usat\\_N.htm#.UH5HNB07mGQ.email](http://usatoday30.usatoday.com/money/economy/employment/2007-04-23-helicopter-parents-usat_N.htm#.UH5HNB07mGQ.email) (explaining that parents actively involve themselves in their children’s job choices).

<sup>124</sup> *Millennials in the Workplace*, CENTER FOR WOMEN & BUS., <http://www.bentley.edu/centers/center-for-women-and-business/millennials-workplace> (last visited Sept. 14, 2013).

<sup>125</sup> ALSOP, *supra* note 121, at 6–7.

<sup>126</sup> Jean M. Twenge & Stacy M. Campbell, *Generational Differences in Psychological Traits and Their Impact on the Workplace*, 23 J. MANAGERIAL PSYCHOL. 862, 866 (2008).

earn graduate or professional degrees.<sup>127</sup> Millennials' confidence is not just high, it is off the charts.<sup>128</sup>

Liking group work, Millennials are team-oriented.<sup>129</sup> Perhaps this is due to the use of collaborative learning in schools. Millennials work well with others; however, this teamwork can lead to weakness in independent and creative thinking.<sup>130</sup> Using the group as a crutch, employers complain that Millennials are unwilling to take the risk of making independent decisions and taking responsibility for failing.<sup>131</sup> Although teamwork skills are important, their over-emphasis has left Millennials underprepared for leadership roles.<sup>132</sup>

Millennials were taught to be achievers by parents who structured every minute of their children's days,<sup>133</sup> and schools "taught to the test" so that students would meet imposed standards.<sup>134</sup> Consequently, Millennials feel pressured to excel and please their elders.<sup>135</sup> On the other hand, teachers report that students are more concerned with getting good grades than with learning.<sup>136</sup> The pressure to get good grades has led to stress and anxiety, which may explain today's widespread cheating.<sup>137</sup> Finally, Howe and Strauss found Millennials to be conventional.<sup>138</sup> Key here is the family, and Millennials have closer family ties and share their parents' values more than generations of the recent past.<sup>139</sup>

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<sup>127</sup> *Id.*

<sup>128</sup> *Id.* at 864–65.

<sup>129</sup> Cooney, *supra* note 113, at 506 (citing Tricia Kasting, Commentary, *The "Millennial" Law Student Generation*, 186 N.J.L.J. 265 (2006)).

<sup>130</sup> ALSOP, *supra* note 121, at 125.

<sup>131</sup> *Id.* at 116, 125. Parents have sheltered their children from failure. *Id.* at 123.

<sup>132</sup> *Id.* at 125.

<sup>133</sup> See generally ALVIN ROSENFELD & NICOLE WISE, *THE OVER-SCHEDULED CHILD: AVOIDING THE HYPER-PARENTING TRAP* (2000) (stating that the reason today's children are on such tight schedules is that their parents are trying to make their children super-achievers).

<sup>134</sup> No Child Left Behind Act of 2001, 20 U.S.C. § 6301 (2006).

<sup>135</sup> HOWE & STRAUSS, *supra* note 115, at 44.

<sup>136</sup> ALSOP, *supra* note 121, at 14, 104.

<sup>137</sup> *Id.* at 14 (citing a 2007 Harris Interactive Survey that found students, eight to twenty-one, worry most about getting good grades, which causes stress, lost sleep, and anxiety; teachers attribute this worrying to student ambition to gain admittance into elite colleges and universities); Wilson & Gerber, *supra* note 117, at 38 (citing a 2002 survey of 12,000 college students where approximately 40% stated "that they were willing to lie or cheat to get into college" (internal quotation marks omitted)).

<sup>138</sup> HOWE & STRAUSS, *supra* note 115, at 44.

<sup>139</sup> ALSOP, *supra* note 121, at 13; HOWE & STRAUSS, *supra* note 115, at 44; Wilson & Gerber, *supra* note 117, at 32.



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Besides having these core traits, Millennials are unique in being the first generation to have grown up with computers.<sup>140</sup> Technology's influence has made its mark on this generation and will continue to influence all succeeding generations. The Millennials have had the latest technology, including the Internet, in K-12 and through college; they will expect it in law school.<sup>141</sup> However, just because Millennials are "digital natives," they are not necessarily digitally literate.<sup>142</sup> They may not use technology "well, appropriately or optimally."<sup>143</sup> Because technology is a growing part of law practice and judicial administration, its effective use has become one of the "attributes of effective, responsible lawyers."<sup>144</sup>

As useful as technology is for legal education and law practice, its use by Millennials is thought to have contributed to the loss of cognitive and social skills once possessed by matriculating law students.<sup>145</sup> Employers complain that Millennials cannot compose a "coherent, well-written memo" and that their writing "lacks clarity" and "logical organization."<sup>146</sup> They also complain that Millennial employees cannot make persuasive arguments to support their assertions.<sup>147</sup> Employers blame colleges, and colleges blame K-12, but some of the blame lies with Millennials using technological modes of communicating via texts, instant messages, and email. Social networking has contributed to Millennials' poor writing skills, not only in terms of spelling, punctuation, and grammar, but also when it comes to writing clear, organized prose and arguing persuasively.<sup>148</sup> In the digital age, law schools cannot assume students arrive with basic writing skills on which to build.

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<sup>140</sup> THOMSON, *supra* note 113, at 26. Millennials are sometimes also called the "Net Generation." *Id.* at 14.

<sup>141</sup> *Id.* at 21.

<sup>142</sup> *Id.* at 28.

<sup>143</sup> *Id.*; see Eszter Hargittai & Heather Young, *Searching for a "Plan B": Young Adults' Strategies for Finding Information about Emergency Contraception Online*, POL'Y & INTERNET, Mar. 2012, at 1, 2 (indicating that adolescents struggle to find relevant information online).

<sup>144</sup> See *supra* text accompanying note 23 (listing the attributes of effective responsible lawyers).

<sup>145</sup> See ALSOP, *supra* note 121, at 159 (discussing how Millennials' obsession with technology prevents them from developing important interpersonal and social skills).

<sup>146</sup> *Id.* at 155.

<sup>147</sup> *Id.*

<sup>148</sup> *Id.* at 156. See generally Sue Shellenbarger, *This Embarrasses You and I\*: Grammar Gaffes Invade the Office in an Age of Informal Email, Texting and Twitter*, WALL ST. J. (June 20, 2012), [http://online.wsj.com/article/SB10001424052702303410404577466662919275448.html?mod=wsj\\_share\\_tweet](http://online.wsj.com/article/SB10001424052702303410404577466662919275448.html?mod=wsj_share_tweet) (providing an overview of the many grammar mistakes employees make in the office).

Connected to their poor written communication skills, Millennials spend so much time on social media that they also lack vital social skills.<sup>149</sup> They avoid face-to-face interaction, even preferring texting over having a telephone conversation.<sup>150</sup> Anecdotal evidence suggests that Millennials would prefer texting a co-worker even when that co-worker's office is just a few steps down the hall.<sup>151</sup> Millennials, unlike previous generations, come to law school needing basic training in interpersonal, listening, and other social skills, so they will be able to function in the legal community. As a result, law schools' teaching responsibilities keep on growing.

The greater ability to multi-task enabled by the Internet has been lauded as making all those who surf the net, not only Millennials, more productive.<sup>152</sup> Because of brain plasticity, the more we use the Internet and multi-task, the more neural circuitry is developed and strengthened so that our brains become adept at attending to multiple distractions with focused, short-term attention.<sup>153</sup> However, UCLA developmental psychologist, Patricia Greenfield, has found that that new productivity comes at the expense of weakening older circuitry that was dedicated to "the kind of 'deep processing' that underpins 'mindful knowledge acquisition, inductive analysis, critical thinking, imagination, and reflection.'"<sup>154</sup> Given that higher education might not have taught today's law students critical-thinking skills, the brain circuitry supporting critical thinking might not have developed. Even those students who did learn higher-order thinking, might have weakened their brain circuitry for that function by their heavy use of the Internet and multi-tasking. This is yet another reason for underprepared law students.

Another consequence of Millennials having grown up with technology and the Internet is a general decline in the desire to read long texts.<sup>155</sup> Millennial college students balk at reading entire books because

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<sup>149</sup> ALSOP, *supra* note 121, at 159.

<sup>150</sup> *Id.*

<sup>151</sup> *Id.*; Jenny Montgomery, *Bridging the Generation Gap: Young Lawyers Adapt to the Profession by Understanding Tradition*, IND. LAW., Nov. 9, 2011 (quoting a Millennial lawyer who stated that "[b]ecause people communicate differently, I think you have to know when a telephone call is appropriate, when an email is appropriate, when it's time to go to someone's office and just sit across from them and talk some things out").

<sup>152</sup> ALSOP, *supra* note 121, at 136.

<sup>153</sup> NICHOLAS CARR, *THE SHALLOWS: WHAT THE INTERNET IS DOING TO OUR BRAINS* 140 (2010).

<sup>154</sup> *Id.* at 141 (quoting Patricia M. Greenfield, *Technology and Informal Education: What Is Taught, What Is Learned*, 323 SCI. 69, 71 (2009)).

<sup>155</sup> ALSOP, *supra* note 121, at 155 (explaining how Millennials resist reading long assigned texts from professors).

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of the difficulty of sustained attention.<sup>156</sup> Perhaps this is due to the heavy use of the Internet, which emphasizes images over words. Moreover, the text found on the Internet is generally either photography captions or short articles. As a result of Millennials' distaste for reading large amounts of text, more college professors are giving in to student pressure and only assign the reading of book excerpts, short stories, and articles.<sup>157</sup> Overall, Americans spend less time reading, according to a National Endowment for the Arts 2007 Report, but Millennials read even less than adults.<sup>158</sup> In 1982, 60% of eighteen- to twenty-four-year-olds read literature, but by 2002 only 43% of that same age group did.<sup>159</sup> The lack of motivation to read and difficulty concentrating for long periods will certainly compromise Millennial law students' learning.

Critics of Howe and Strauss's core Millennial traits suggest that the "special" and "confident" traits have negative consequences for Millennials' academic and life success. The core belief of Millennials is that the individual comes first;<sup>160</sup> hence, the other name for this generation: Generation Me.<sup>161</sup> Parents, the educational system, and society in general have communicated to this generation that they are important and that they can be anything they want to be, even if it is unrealistic.<sup>162</sup> Case in point: the top goals of eighteen- to twenty-five-year-olds studied by the Pew Research Center in Washington, D.C. were to be rich and famous.<sup>163</sup> These dreams are in line with Millennials' love of attention and recognition. In an article on how these Millennial traits impact medical education, Jean Twenge, Associate Professor of Psychology at San Diego State University, asserts that medical students have "higher expectations; higher levels of narcissism and entitlement; increases in anxiety and mental problems[,] and a decline in the desire to read long texts."<sup>164</sup> These self-centered traits will likely have a similar impact on legal education.

Millennials' higher levels of narcissism and entitlement can be linked in part to the self-esteem programs put in place by schools during the 1980s in an apparent attempt to eliminate low self-esteem among

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<sup>156</sup> *Id.*

<sup>157</sup> *Id.*

<sup>158</sup> *Id.* (citing NAT'L ENDOWMENT FOR THE ARTS, TO READ OR NOT TO READ: A QUESTION OF NATIONAL CONSEQUENCE, Research Report No. 47 (2007), available at <http://arts.gov/sites/default/files/ToRead.pdf>).

<sup>159</sup> *Id.*

<sup>160</sup> TWENGE, *supra* note 118, at 43, 49.

<sup>161</sup> See generally *id.* (describing the Millennial generation).

<sup>162</sup> *Id.* at 49, 77-86.

<sup>163</sup> ALSOP, *supra* note 121, at 11.

<sup>164</sup> Jean M. Twenge, *Generational Changes and Their Impact in the Classroom: Teaching Generation Me*, 43 MED. EDUC. 398, 400 (2009).

children and to help children feel good about themselves.<sup>165</sup> The programs must have worked because data collected from college students using the Rosenberg Self-Esteem Scale indicated that in “the mid-1990s, the average [Millennial] college man had higher self-esteem than 86% of college men in 1968. The average mid-1990s college woman had higher self-esteem than 71% of Boomer college women.”<sup>166</sup> To avoid tearing down a student’s self-esteem, some teachers have intentionally not corrected mistakes in student papers.<sup>167</sup> The self-esteem movement has led to grade inflation and feeling good has replaced learning.<sup>168</sup> This has created people who cannot take criticism once they get into the real world<sup>169</sup>—and into law school. Building the self-esteem of students who already think of themselves as important and special can lead to the negative trait of narcissism.<sup>170</sup>

The increase in narcissism, self-focus gone to the extreme, has not only serious implications for the character of the next generation entering the legal profession but also for their education as law students. “Narcissists have great difficulty getting along with others; they lack empathy and cannot take someone else’s perspective.”<sup>171</sup> Rates of narcissism have increased significantly over the last twenty-five years.<sup>172</sup> Using results from the Narcissistic Personality Inventory, “[t]he average college student in 2006 scored higher in narcissism than 65 percent of students in the early 1980s, more likely to agree with items such as ‘If I ruled the world it would be a better place,’ ‘I think I am a special person,’ and ‘I can live my life any way I want to.’”<sup>173</sup> Indeed, Millennials are the most narcissistic generation to date.<sup>174</sup>

Narcissistic people feel a sense of entitlement that the world owes them something.<sup>175</sup> This translates to students expecting to get good grades based on effort, not performance.<sup>176</sup> Additionally, Millennial students will probably expect good grades because of grade inflation

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<sup>165</sup> TWENGE, *supra* note 118, at 53.

<sup>166</sup> *Id.* at 52.

<sup>167</sup> *Id.* at 61. The author mentions one method of teaching that does not allow correcting of spelling errors so that students may be treated as individuals. *Id.* Some pedagogical methods espouse that maintaining a positive atmosphere in the classroom is more important than correcting errors. *Id.* at 61–62.

<sup>168</sup> *Id.* at 63–64.

<sup>169</sup> *Id.* at 64, 68.

<sup>170</sup> *Id.* at 68.

<sup>171</sup> Twenge & Campbell, *supra* note 126, at 865.

<sup>172</sup> *See id.* (discussing students’ increasing scores on the narcissism scale).

<sup>173</sup> *Id.* The data was collected from twenty-seven campuses across the nation. *Id.*

<sup>174</sup> TWENGE, *supra* note 118, at 70.

<sup>175</sup> Twenge, *supra* note 164, at 401.

<sup>176</sup> *Id.*

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they experienced in high school. In the world of work, this translates to expecting fast promotions and work-life balance.<sup>177</sup> The co-chair of the hiring committee at the law firm Choate, Hall & Stewart in Boston stated that although most new associates know that clients come first, some still expect flexibility no matter what the law practice demands and do not understand that the law practice is a business.<sup>178</sup>

Along with a sense of entitlement, many Millennials suffer from inflated expectations and over-confidence.<sup>179</sup> For example:

[i]n 2003, an incredible 3 out of 4 American college freshmen said that they wanted to earn an advanced degree (such as a master's, Ph.D., M.D., or law degree). For example, 39% say they will earn a master's degree, 19% a Ph.D., and 12% an M.D. Grand ambitions indeed, since the number of Ph.D.'s granted each year is only 4% of the bachelor's degrees given, and M.D.'s only 1%.<sup>180</sup>

Not considered is how many of these freshmen will actually finish their bachelor's degree.<sup>181</sup> In fact, this over-confidence is more likely to lead to failure than success.<sup>182</sup> Over-confidence has been shown to be "highest among those who failed a course and lowest among those who earned A-grades."<sup>183</sup> This type of student, who has more ambition than skill, may be found more frequently in law school with the matriculation of the Millennials. With Millennials focusing so much on themselves, it is not surprising that the prevalence of anxiety and mental problems, such as depression, are greater in Millennials than in previous generations.<sup>184</sup> Legal education has always been stressful,<sup>185</sup> and the legal profession has

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<sup>177</sup> ALSOP, *supra* note 121, at 47.

<sup>178</sup> *Id.* at 165-66.

<sup>179</sup> See *supra* text accompanying notes 126-28 (reviewing the overconfidence and high expectations of Millennials in comparison to previous generations).

<sup>180</sup> TWENGE, *supra* note 118, at 79.

<sup>181</sup> See *id.* (identifying that less than 50% of entering college freshmen will earn a bachelor's degree within five years).

<sup>182</sup> See Twenge, *supra* note 164, at 401.

<sup>183</sup> *Id.*

<sup>184</sup> See Jean M. Twenge et al., *Birth Cohort Increases in Psychopathology Among Young Americans, 1938-2007: A Cross-Temporal Meta-Analysis of the MMPI*, 30 CLINICAL PSYCHOL. REV. 145, 152 (2010) (observing that each successive generation demonstrates increased symptoms of psychopathology and previous findings demonstrate an increase in depression).

<sup>185</sup> See generally Edward Rubin, *Curricular Stress*, 60 J. LEGAL EDUC. 110 (2010) (describing the various types of stress that the legal curriculum imposes on law students, including ideological stress, pedagogic stress, and ethical stress).

long had a high rate of depression and alcoholism.<sup>186</sup> It is particularly troubling that more students who are experiencing anxiety and mental problems will bring those problems into the stressful law school environment.<sup>187</sup>

Although it has been hard to pinpoint the reasons, colleges “now have a larger percentage of students with more serious mental health problems.”<sup>188</sup> Analyses of the Minnesota Multiphasic Personality Inventory (“MMPI”) results of 63,706 college students from 1938 to 2007 and 13,870 high school students from 1951 to 2002<sup>189</sup> show that students reported “significantly more symptoms of psychopathology on the MMPI over the generations. Each successive generation report[ed] more mental health problems.”<sup>190</sup> “Recent generations include more people scoring high,” which “predicts moodiness, restlessness, dissatisfaction, and instability.”<sup>191</sup> Results indicate that “something is changing in American culture that is related to increased psychopathology among youth.”<sup>192</sup> Correlational studies, like this one, are difficult to use to prove causation, but this study can note what changes have occurred alongside the increase in mental health problems.<sup>193</sup> It might be a reasonable assumption that the recession starting in 2008 has something to do with the increase. However, the study rules out this potential connection because, for economic problems to be a cause, the MMPI scores would have had to “rise and fall along with the economic depressions and recessions of the last 7 decades,”<sup>194</sup> and there is no such correlation.<sup>195</sup>

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<sup>186</sup> J. Nick Badgerow, *Apocalypse at Law: The Four Horsemen of the Modern Bar – Drugs, Alcohol, Gambling, and Depression*, J. KAN. B. ASS’N, February 2008, at 19, 20–21, 23–24.

<sup>187</sup> See *infra* note 188 and accompanying text (discussing the increase of students with serious mental health problems).

<sup>188</sup> Twenge et al., *supra* note 184, at 153; see Susan P. Stuart, “Hope and Despondence”: *Emerging Adulthood and Higher Education’s Relationship with Its Nonviolent Mentally Ill Students*, 38 J.C. & U.L. 319, 325–29 (2012) (noting that the number of mentally ill students in higher education is increasing and giving several reasons for this increase). But see Kali H. Trzesniewski & M. Brent Donnellan, *Rethinking “Generation Me”: A Study of Cohort Effects from 1976–2006*, 5 PERSP. ON PSYCHOL. SCI. 58, 69 (2010) (finding that student profiles have changed little over the past thirty years).

<sup>189</sup> Twenge et al., *supra* note 184, at 145–46.

<sup>190</sup> *Id.* at 152.

<sup>191</sup> *Id.*

<sup>192</sup> *Id.*

<sup>193</sup> *Id.*

<sup>194</sup> *Id.* at 147.

<sup>195</sup> *Id.* at 152 (finding that the increases in psychopathology are “relatively independent of economic cycles”).

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The test results do indicate that “something is changing in American culture that is related to increased psychopathology among youth.”<sup>196</sup>

These data suggest that the rise in psychopathology has coincided with greater importance placed on extrinsic goals such as material wealth and less importance on intrinsic goals such as affiliation. . . . As American culture shifted toward emphasizing individual achievement, money, and status rather than social relationships and community, psychopathology increased among young people. . . . [S]ocieties emphasizing extrinsic goals “may be promoting a cultural norm of personal autonomy and attainment that is unrealistic, unattainable or otherwise inappropriate, resulting in a gap between expectations and realities.”<sup>197</sup>

These reasons square with Millennials’ traits.<sup>198</sup>

The stereotypical Millennial comes to the first year of law school woefully underprepared. Will the next generation, entering law school in 2023, fare any better? Given the crisis surrounding legal education, law schools cannot afford to wait and see. Typically, each generation carries different traits; however, the young people of the United States and other westernized countries are delaying adulthood in such a regular pattern that it appears as if a new life stage between adolescence and adulthood is forming. Psychologist Jeffrey Jensen Arnett claims that some of the characteristics of the current generation of young people, the Millennials, are not generational at all, but are a part of this new life stage he proposes be recognized, known as emerging adulthood.<sup>199</sup> If these characteristics are here to stay, it becomes even more imperative that law schools and other educational and societal institutions change to meet emerging adults’ needs.

B. *Homesteaders: Emerging Adults*

Professor Arnett proposed the recognition of a new life stage called emerging adulthood, occurring between adolescence and adulthood.<sup>200</sup>

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<sup>196</sup> *Id.*

<sup>197</sup> *Id.* (citations omitted) (quoting Richard Eckersley & Keith Dear, *Cultural Correlates of Youth Suicide*, 55 SOC. SCI. & MED. 1891, 1901 (2002)).

<sup>198</sup> See *supra* text accompanying notes 115–39 (describing the core traits of Millennials).

<sup>199</sup> Jeffrey Jensen Arnett, *Emerging Adulthood: A Theory of Development From the Late Teens Through the Twenties*, 55 AM. PSYCHOLOGIST 469, 469 (2000).

<sup>200</sup> *Id.*

It lasts from the late teens until the mid- to late-twenties.<sup>201</sup> Becoming an adult in Western industrial and post-industrial society takes much longer than in the past.<sup>202</sup> Its existence is dependent on the presence of certain cultural conditions and is not a national phenomenon.<sup>203</sup> The length of emerging adulthood depends on socioeconomic and life circumstances.<sup>204</sup> Professor Arnett describes emerging adulthood as a time when individuals:

[f]rom their late teens to their late twenties . . . explore the possibilities available to them in love and work, and move gradually toward making enduring choices. Such freedom to explore different options is exciting, and this period is a time of high hopes and big dreams. However, it is also a time of anxiety and uncertainty, because the lives of young people are so unsettled, and many of them have no idea where their explorations will lead. They struggle with uncertainty even as they revel in being freer than they ever were in childhood or ever will be once they take on the full weight of adult responsibilities. To be a young American today is to experience both excitement and uncertainty, wide-open possibility and confusion, new freedoms and new fears.<sup>205</sup>

The new life stage is possible partly because of a higher age for marriage and parenthood.<sup>206</sup> In 1970, the median age at marriage for women was twenty-one and twenty-three for men.<sup>207</sup> By 2009, those ages had risen to twenty-six for women and twenty-eight for men.<sup>208</sup> Likewise, parenthood came in the early twenties in 1970 and now occurs

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<sup>201</sup> JEFFREY JENSEN ARNETT, *EMERGING ADULTHOOD: THE WINDING ROAD FROM THE LATE TEENS THROUGH THE TWENTIES* 4 (2004).

<sup>202</sup> *Id.* at 3, 21.

<sup>203</sup> *Id.* at 21–22.

<sup>204</sup> *Id.* at 22.

<sup>205</sup> *Id.* at 3.

<sup>206</sup> See Robin Marantz Henig, *What is it About 20-Somethings?*, N.Y. TIMES (Aug. 18, 2010), [http://www.nytimes.com/2010/08/22/magazine/22Adulthood-t.html?pagewanted=all&\\_r=0](http://www.nytimes.com/2010/08/22/magazine/22Adulthood-t.html?pagewanted=all&_r=0) (explaining how young adults are delaying marriage and parenthood).

<sup>207</sup> *Id.*

<sup>208</sup> *Id.*



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in the late twenties.<sup>209</sup> By the late twentieth century, marriage and parenthood were no longer major markers of adulthood.<sup>210</sup>

Another reason for emerging adulthood as a distinct life stage is that more people are pursuing education beyond high school than ever before and are waiting until completing their education to marry and have a family.<sup>211</sup> Largely, emerging adults go to college because having a degree gives a person more employment opportunities at a living wage.<sup>212</sup> Less than one-third of eighteen to twenty-four year-olds have jobs that allow them to be self-sufficient.<sup>213</sup> So, in 2000, over 60% of high school graduates went to college;<sup>214</sup> this increase has been a significant reason for emerging adulthood.<sup>215</sup> Nearly one-third of college graduates enter graduate school the following year.<sup>216</sup> In the National Survey of Undergraduates, only one-fourth of the respondents said they would end their education upon receiving their Bachelor's degree.<sup>217</sup> Nearly 40% planned to obtain a Master's degree, and 30% intended to obtain a Ph.D., medical, or law degree.<sup>218</sup> Many of these people must be following their plans because The National Center for Education Statistics reported that between 1970 and 1999 "there was an 80% increase in the number of advanced degrees awarded."<sup>219</sup> The emerging adulthood stage is supported by American higher education, which enrolled the highest number of American emerging adult students in its history and in the industrialized world.<sup>220</sup>

Among other reasons for the longer road to adulthood, emerging adults are understandably apprehensive about taking on adult responsibilities for they fear their lives will stagnate and it will be the end of their fun.<sup>221</sup> They know that once they take on adulthood there will be no going back.<sup>222</sup>

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<sup>209</sup> ARNETT, *supra* note 201, at 5.

<sup>210</sup> See *supra* text accompanying notes 206–09 (discussing how adults now delay marriage and parenthood).

<sup>211</sup> ARNETT, *supra* note 201, at 6.

<sup>212</sup> *Id.* at 119.

<sup>213</sup> JAMES E. CÔTÉ, ARRESTED ADULTHOOD: THE CHANGING NATURE OF MATURITY AND IDENTITY 166 (2000).

<sup>214</sup> ARNETT, *supra* note 201, at 121 fig. 6.1.

<sup>215</sup> See *id.* at 119–20 (explaining the significance of earning a college education and its effect on emerging adulthood).

<sup>216</sup> *Id.* at 131.

<sup>217</sup> *Id.*

<sup>218</sup> *Id.*

<sup>219</sup> *Id.* at 131–32.

<sup>220</sup> *Id.* at 120.

<sup>221</sup> *Id.* at 219.

<sup>222</sup> *Id.*

Professor Arnett describes five main features of emerging adulthood.<sup>223</sup> He claims that emerging adulthood is a time of identity exploration, instability, transition, self-focus, and possibilities.<sup>224</sup> In looking at these features in more detail, it appears that the features of self-focus and possibilities overlap with characteristics of the Millennial generation.<sup>225</sup>

Identity exploration is a continuation of the identity formation in love and work that Erik Erikson thought central to the adolescent stage of life.<sup>226</sup> Erikson realized that dealing with the identity crisis was a big task in industrialized societies and that it prolonged adolescence.<sup>227</sup> Indeed, identity formation is a process that begins in adolescence but is not completed by the end of high school; it continues in emerging adulthood.<sup>228</sup> College gives emerging adults more unstructured time to explore their identity in terms of both love relationships and possible career paths.<sup>229</sup>

The explorations of emerging adults in love and work cause instability.<sup>230</sup> One example of instability is the frequency with which people between ages eighteen and twenty-five change residences.<sup>231</sup> With each revision of plans, emerging adults learn something about themselves that will help them in defining their futures.<sup>232</sup>

Emerging adults are in transition between adolescence and adulthood; they feel stuck in-between, not ready to be fully adult.<sup>233</sup> The majority of emerging adults name three criteria that would signal they have reached adulthood: accepting responsibility for themselves, making independent decisions, and being financially independent.<sup>234</sup> Ninety percent of emerging adults feel that they have reached adulthood by age thirty.<sup>235</sup>

Professor Arnett describes emerging adulthood as the most self-focused stage of life.<sup>236</sup> This is when people have the most time to focus

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<sup>223</sup> See *id.* at 8 (listing the five main features of emerging adulthood).

<sup>224</sup> *Id.*

<sup>225</sup> See *supra* text accompanying notes 115–39 (reviewing the core characteristics of Millennials).

<sup>226</sup> ARNETT, *supra* note 201, at 8.

<sup>227</sup> *Id.*

<sup>228</sup> *Id.* at 9.

<sup>229</sup> *Id.* at 9–10.

<sup>230</sup> *Id.* at 10.

<sup>231</sup> *Id.* at 11.

<sup>232</sup> *Id.*

<sup>233</sup> *Id.* at 14.

<sup>234</sup> *Id.* at 15.

<sup>235</sup> *Id.* at 218.

<sup>236</sup> *Id.* at 12.

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on self-development, and they usually concentrate on educational and occupational preparation for adulthood.<sup>237</sup> Emerging adults usually have fewer daily commitments than adults and make all their own daily decisions such as when to eat, study, socialize, and do laundry.<sup>238</sup> This helps them develop life skills, learn who they are and what they want, and build a foundation for their adult lives.<sup>239</sup> Their ultimate goal is self-sufficiency.<sup>240</sup>

The self-focus of emerging adults is similar to the core belief of Millennials that the individual comes first, which has led to a sense of entitlement.<sup>241</sup> Some emerging adults could take their self-focus to the extreme of narcissism, a problem with this generation.<sup>242</sup>

Professor Arnett also describes emerging adulthood as a hopeful time of possibilities where a young person has the chance to transform his or her life.<sup>243</sup> Because they have not decided much yet, emerging adults can dramatically change their lives.<sup>244</sup> Emerging adults think their futures hold promise,<sup>245</sup> but their dreams have not been tested by reality yet.<sup>246</sup> They expect to be better educated than their parents,<sup>247</sup> or, if their parents are successful professionals, emerging adults believe their lives will be better than their parents' lives because their relationships, income level, and work-life balance will be superior to that of their parents.<sup>248</sup> The optimism of emerging adults, untested by reality, is comparable to the Millennial traits of inflated expectations and over-confidence.<sup>249</sup>

Characteristics of the Millennial generation and the emerging adulthood life stage overlap.<sup>250</sup> The experts do not agree whether these

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<sup>237</sup> Jeffrey Jensen Arnett, *Suffering, Selfish, Slackers? Myths and Reality About Emerging Adults*, 36 J. YOUTH ADOLESCENCE 23, 26 (2007).

<sup>238</sup> ARNETT, *supra* note 201, at 13.

<sup>239</sup> *Id.*

<sup>240</sup> *Id.* at 13–14.

<sup>241</sup> See *supra* text accompanying notes 175–78 (discussing the sense of entitlement among Millennials).

<sup>242</sup> See *supra* text accompanying notes 171–74 (reviewing the high levels of narcissism among Millennials).

<sup>243</sup> See ARNETT, *supra* note 201, at 8 (describing the path to clarifying young adults' identity through the pursuit of love and work).

<sup>244</sup> *Id.*

<sup>245</sup> *Id.* at 227.

<sup>246</sup> *Id.* at 222.

<sup>247</sup> *Id.* at 223.

<sup>248</sup> *Id.* at 225–26.

<sup>249</sup> See *supra* text accompanying notes 126–28 (explaining the inflated expectations and overconfidence of Millennials).

<sup>250</sup> See *supra* text accompanying note 225 (recognizing that the characteristics of Millennials and emerging adulthood overlap). Compare *supra* notes 116–39 and accompanying text (explaining the core characteristics of Millennials), with *supra* text accompanying notes 223–49 (listing and discussing in detail the characteristics of emerging adulthood).

characteristics are generational or a new stage of the life course, nor do they agree on whether the characteristics are mostly positive or negative.<sup>251</sup> Generations will change, but emerging adulthood is here to stay. Whether called Millennials or emerging adults, they will continue to be the majority of students at law school. Furthermore, the digital age is not going away. Law schools must change the way they educate today's students. New discoveries in neuroscience can be helpful in designing a law curriculum that addresses the deficits common to many of today's law students.<sup>252</sup>

#### IV. THE NEW FRONTIER: NEUROSCIENCE

Neuroscience, the scientific study of the brain's biology<sup>253</sup>—how it develops and how it works—is a burgeoning field.<sup>254</sup> With the advent of magnetic resonance imaging (“MRI”) during the last twenty years, scientists have, for the first time, been able to study the live human brain.<sup>255</sup> Before this, the only way to study a human brain was through autopsy.<sup>256</sup> Therefore, little was known about how the brain developed from infancy through young adulthood because of the low death rate in these categories.<sup>257</sup>

Historically, scientists thought that the brain was fully developed at the end of childhood, at about twelve years.<sup>258</sup> During the late 1960s and 1970s, post-mortem research on human brains revealed that the prefrontal cortex and other areas continued to develop after early childhood.<sup>259</sup> Further research in the 1970s and 1980s showed significant change in the structure of the prefrontal cortex during puberty and

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<sup>251</sup> See *supra* text accompanying note 199 (indicating that the characteristics of Millennials are not generational but rather a part of the proposed emerging adulthood life stage).

<sup>252</sup> See *infra* Part IV (discussing neuroscience, the scientific study of the brain).

<sup>253</sup> Daniel R. Weinberger et al., *The Adolescent Brain: A Work in Progress*, THE NAT'L CAMPAIGN TO PREVENT TEEN PREGNANCY 1 (2005), <http://www.thenationalcampaign.org/resources/pdf/brain.pdf>.

<sup>254</sup> See generally *Neuroscience*, YALE UNIV., <http://bbs.yale.edu/neuroscience/index.aspx> (last visited July 17, 2013) (providing an overview of neuroscience research at Yale University); *Research*, NEUROSCIENCE U. CHI., <http://neuroscience.uchicago.edu/?p=neuro/research> (last visited July 17, 2013) (discussing the neuroscience research taking place at the University of Chicago).

<sup>255</sup> Sarah-Jayne Blakemore & Suparna Choudhury, *Development of the Adolescent Brain: Implications for Executive Function and Social Cognition*, 47 J. CHILD PSYCHOL. & PSYCHIATRY 296, 297 (2006).

<sup>256</sup> *Id.*

<sup>257</sup> Elizabeth R. Sowell et al., *In Vivo Evidence for Post-Adolescent Brain Maturation in Frontal and Striatal Regions*, 2 NATURE NEUROSCIENCE 859, 859 (1999).

<sup>258</sup> Weinberger et al., *supra* note 253, at 1.

<sup>259</sup> Blakemore & Choudhury, *supra* note 255, at 296.

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adolescence.<sup>260</sup> This more modern research led to the conclusion that the brain is far from complete at the end of childhood.<sup>261</sup>

This conclusion was confirmed as more details became available with MRI research. Scientists discovered that twice in a lifetime the brain forms an enormous number of neurons that pair up, grow synapses between them, and begin two-way communication.<sup>262</sup> Both times, this overproduction is followed by a process of “pruning” where the cells and connections that are used are kept, and those that are not used are pruned.<sup>263</sup> The first time this overproduction occurs is in the womb and pruning occurs from birth to age five.<sup>264</sup> The second time, overproduction occurs right before puberty and pruning occurs during adolescence.<sup>265</sup>

Further, scientists found that axons, long extensions connecting neurons from one area of the brain to another, become covered by a white fatty substance called myelin so they can more efficiently send electrical impulses longer distances.<sup>266</sup> The myelination process increases the speed of signals traveling between brain cells by up to 100 times that of non-myelinated axons.<sup>267</sup> As the brain matures and handles more complex information, the brain’s circuits become more efficient and shift from a sequential processing of information to a parallel processing, handling several pieces of information at once.<sup>268</sup> This parallel processing is used for abstract information and is therefore “critical for learning and memory of such concepts as rules, laws, and codes of social conduct.”<sup>269</sup> The myelination process, which vastly increases the efficiency of neural circuits, does not occur in the prefrontal cortex and related regions until the mid-twenties.<sup>270</sup> “By the end of the twenties, the profile of cell-to-cell contacts reaches an adult pattern and the number of connections reaches a steady state that persists until old

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<sup>260</sup> *Id.*

<sup>261</sup> *Id.*

<sup>262</sup> Weinberger et al., *supra* note 253, at 5–6.

<sup>263</sup> *Id.*

<sup>264</sup> *Id.* at 5, 7. Studies of monkeys found a large net loss of synapses during the first six months of life, which corresponds to five years of human life. *Id.*

<sup>265</sup> *Id.* at 6.

<sup>266</sup> *Id.* at 9.

<sup>267</sup> *Id.*

<sup>268</sup> *Id.* at 8.

<sup>269</sup> *Id.*

<sup>270</sup> Seymour Moskowitz, *Save the Children: The Legal Abandonment of American Youth in the Workplace*, 43 AKRON L. REV. 107, 150–51 (2010) (citing Blakemore & Choudhury, *supra* note 255, at 296); Weinberger et al., *supra* note 253, at 9.

age.”<sup>271</sup> Hence, the part of the brain used for the critical thinking involved in legal education is still developing in most law students.

The discovery that the prefrontal cortex and related areas<sup>272</sup> continue to develop in adolescence *and* into adulthood caused a significant shift in scientific thinking and has far-reaching consequences for academic and social aspects of life.<sup>273</sup> Two recent studies confirm this.<sup>274</sup>

In a study published in 2006, freshman college students’ brain structures changed significantly over that traditional period of normative maturation.<sup>275</sup> Scientists confirmed that brain structure continues to change past the age of eighteen, when adulthood is said to be attained.<sup>276</sup> The study’s authors concluded that these changes were in response to the environmental demands placed on college freshman.<sup>277</sup> More specifically, the scientists recognized that the changes were caused by the myelination process,<sup>278</sup> which coated matured brain circuits like insulation on electric wiring and sped communication between brain cells, as evidenced by the changes that occurred from the first brain scans to the second scans of college freshmen.<sup>279</sup> These areas of the brain are responsible for processing complex abstract information such as organizing, planning, strategizing, prioritizing, and decision making.<sup>280</sup> The scientists confirmed that white matter maturation is not only associated with cognitive development in childhood, but also in early

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<sup>271</sup> Weinberger et al., *supra* note 253, at 2.

<sup>272</sup> STEVEN JOHNSON, MIND WIDE OPEN: YOUR BRAIN AND THE NEUROSCIENCE OF EVERYDAY LIFE 206 (2004) (stating that the pre-frontal cortex and related areas are responsible for “executive brain” functioning); Melissa S. Caulum, Comment, *Postadolescent Brain Development: A Disconnect Between Neuroscience, Emerging Adults, and the Corrections System*, 2007 WIS. L. REV. 729, 741 (2007) (stating that the pre-frontal cortex governs a person’s judging, reasoning, and planning activities).

<sup>273</sup> See Craig M. Bennett & Abigail A. Baird, *Anatomical Changes in the Emerging Adult Brain: A Voxel-Based Morphometry Study*, 27 HUM. BRAIN MAPPING 766, 767 (2006) (discussing how the brain continues to develop into adulthood); Blakemore & Choudhury, *supra* note 255, at 297 (explaining that MRI imaging provided further evidence that the brain develops into adulthood).

<sup>274</sup> See *infra* notes 275–97 and accompanying text (discussing a study conducted on first-year college students’ brain structures and a study that tracked the change in brain structure of prospective law students throughout a review course for the Law School Admissions Test).

<sup>275</sup> Bennett & Baird, *supra* note 273, at 767.

<sup>276</sup> *Id.*

<sup>277</sup> *Id.* at 775.

<sup>278</sup> *Id.* at 772.

<sup>279</sup> See Weinberger et al., *supra* note 253, at 9 (explaining how myelin increases the speed of signals sent between brain cells); see also Bennett & Baird, *supra* note 273, at 767, 770–73 (explaining the findings from nineteen college freshmen who were examined during the study).

<sup>280</sup> Weinberger et al., *supra* note 253, at 9, 11.

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emerging adulthood.<sup>281</sup> They further recognized that the socio-cognitive skills these students acquired while adapting to their new environment were related to the changes that occurred in regions of the brain connected to emotional experience and behavioral regulation.<sup>282</sup> Therefore, the brain, once thought static by the end of adolescence, continues to develop in emerging adulthood. In fact, the brain is always learning and changing.<sup>283</sup>

In addition to a change in brain structure in college freshmen, caused by adapting to a new environment, intense training in reasoning skills in preparation for the Law School Admission Test ("LSAT") increased brain plasticity<sup>284</sup> and ability for dual-hemisphere cooperation,<sup>285</sup> resulting in more efficient and effective problem-solving.<sup>286</sup> Specifically, a study published in 2012 concluded that three months of formal reasoning training, consisting of 100 hours of preparation for the LSAT by students in their early twenties, resulted in changes of white matter microstructure.<sup>287</sup> The scientists further concluded that the white matter changes might not be limited to myelination, which commonly occurs in the early twenties.<sup>288</sup> Using an "age- and IQ-matched control group"

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<sup>281</sup> Bennett & Baird, *supra* note 273, at 772.

<sup>282</sup> *Id.*

<sup>283</sup> CATHY N. DAVIDSON, NOW YOU SEE IT: HOW THE BRAIN SCIENCE OF ATTENTION WILL TRANSFORM THE WAY WE LIVE, WORK, AND LEARN 15 (2011).

<sup>284</sup> Sam Favate, *Study Shows Why Lawyers Are So Smart*, WALL ST. J., Aug. 28, 2012, at D3, available at <http://online.wsj.com/article/SB2000087239639044230504577615443664768610.html>; see *Definition of Neuroplasticity*, MEDICINET.COM, <http://www.medterms.com/script/main/art.asp?articlekey=40362> (last visited Aug. 22, 2012) (defining Neuroplasticity as "[t]he brain's ability to reorganize itself by forming new neural connections throughout life. Neuroplasticity allows the neurons (nerve cells) in the brain to compensate for injury and disease and to adjust their activities in response to new situations or to changes in their environment.").

<sup>285</sup> The scientists studying the students preparing for the LSAT found that the "homologous cortex in the right hemisphere can be recruited as needed to support complex reasoning." Allyson P. Mackey et al., *Experience-Dependent Plasticity in White Matter Microstructure: Reasoning Training Alters Structural Connectivity*, FRONTIERS IN NEUROANATOMY, August 2012, at 1, 7 (opining that "[p]erhaps learning to reason more efficiently involves recruiting compensatory neural circuitry more consistently"). The brain is made up of a left hemisphere, which focuses on linear thought and is used more for reasoning, and a right hemisphere, which focuses on patterns and connections. Deborah J. Merritt, *Legal Education in the Age of Cognitive Science and Advanced Classroom Technology*, 14 B.U. J. SCI. & TECH. L. 39, 42 (2008). "The left brain analyzes the pieces, while the right brain synthesizes the big picture." *Id.* In legal education, we focus on the left brain almost to the exclusion of the right; but, both sides of the brain are needed for the best learning. *Id.* at 43.

<sup>286</sup> Mackey et al., *supra* note 285, at 7. They opined that "[p]erhaps learning to reason more efficiently involves recruiting compensatory neural circuitry more consistently." *Id.*

<sup>287</sup> *Id.* (stating that the white matter changes are from myelination).

<sup>288</sup> *Id.*

made the “strongest evidence for experience-dependent plasticity.”<sup>289</sup> The scientists “compared the scores on each of the LSAT sections for the first and fourth practice test as an index of change from time 1 to time 2.”<sup>290</sup> Using diffusion tensor imaging scans<sup>291</sup> and scores from all four practice tests for whom four test scores were available,<sup>292</sup> the scientists found that the three month “training was associated with a gain of nine points on the LSAT.”<sup>293</sup> The training strengthened connections between the brain’s left and right hemispheres.<sup>294</sup> The left hemisphere dominates control of reasoning, but, through training, the right hemisphere was called upon to assist.<sup>295</sup> Thus, the brain is able to actively alter its neural pathways through particular mental exercises and continue to increase its problem-solving potential.<sup>296</sup>

Cognitive Neuroscience Professor John D. E. Gabrieli of the Massachusetts Institute of Technology, who was not involved in the study, stated that this discovery “shows, with rigorous analysis, that brain pathways important for thinking and reasoning remain plastic in adulthood, and that intensive, real-life educational experience that trains reasoning also alters the brain pathways that support reasoning ability.”<sup>297</sup> The study’s senior author, Silvia Bunge, Associate Professor in UC Berkeley’s Psychology Department and the Helen Wills Neuroscience Institute, stated:

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The results featured here meet a more conservative criterion than several prior training studies, in that changes in the trained group needed to surpass changes in the control group to be considered significant. The participants in our study were, on average, in their early twenties, and developmental changes in white matter are known to occur during this age range. Additionally, both groups consisted largely of university students, and their academic experiences over the course of 3 months alone could have altered their white matter microstructure. Thus, changes that were significantly greater in the trained group than in a well-matched control group provide strong evidence for experience-dependent plasticity, and not simply maturational changes.

*Id.* (citation omitted).

<sup>289</sup> *Id.* at 2.

<sup>290</sup> *Id.* at 3.

<sup>291</sup> *Id.* at 1.

<sup>292</sup> Sixteen of the twenty-three test subjects had all four practice test scores available. *Id.* at 5.

<sup>293</sup> *Id.*

<sup>294</sup> *Id.* at 7.

<sup>295</sup> *Id.*

<sup>296</sup> See *supra* text accompanying notes 290–95 (explaining that using practice tests for the LSAT helped students strengthen the connections between the right and left hemispheres).

<sup>297</sup> Robert Sanders, *Intense Prep for Law School Admission Test Alters Brain Structure*, U. CAL. BERKELEY NEWSCENTER (Aug. 22, 2012), <http://newscenter.berkeley.edu/2012/08/22/intense-prep-for-law-school-admissions-test-alters-brain-structure/>.



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“How you perform on one of these tests is not necessarily predictive of your *future* success, it merely reflects your *prior* history of cognitive engagement, and potentially how prepared you are *at this time* to enter a graduate program or a law school, as opposed to how prepared you could ever be.”<sup>298</sup>

For under-prepared law students and their professors, this is good news. It means that, if they are sufficiently motivated, it is possible for under-prepared law students to make up for the deficits they brought to law school.<sup>299</sup>

## V. THE HATFIELDS &amp; THE MCCOYS

Legal education reform has been gathering a lot of steam since the publication of both *Best Practices* and the Carnegie Report.<sup>300</sup> They are certainly the impetus for law schools’ re-examination of their curricular offerings, hiring of more academic support personnel, and addition of practical skills experiences. All these are good things and can lead to richer academic experiences for law students. But what both fail to acknowledge is that the burden for making law students practice-ready is not one-sided.

When the practicing bar started raising its concerns about graduates’ lack of practice-ready skills, the onus fell on the law schools. Indeed, that seems to be the underlying message of the Carnegie Report: if the academy fixes itself, then all will be well.<sup>301</sup> But a law school cannot make a student practice-ready when the student lacks the tools to do so. The seeds for thinking like a lawyer might be there—as the brain science suggests—but we are sowing on a barren plain if the ground has not yet been plowed.

The Carnegie Report’s cognitive apprenticeship is a valuable metaphor for what law schools do, and it is a valuable reminder of the service we render in helping students learn to solve problems and in demonstrating to them higher-order critical-thinking skills. However, that metaphor only works if law schools and students are operating

<sup>298</sup> *Id.*; see Leah M. Christensen, *Enhancing Law School Success: A Study of Goal Orientations, Academic Achievement and the Declining Self-Efficacy of Our Law Students*, 33 LAW & PSYCHOL. REV. 57, 87-91 (2009) (arguing that LSAT scores are the least accurate predictor, among UGPA and Lawyering Skills grade, of law school success).

<sup>299</sup> See *supra* text accompanying notes 298-99 (suggesting that students may improve their cognitive abilities and become better students over time).

<sup>300</sup> See *supra* notes 2-3 (citing the Carnegie Report and *Best Practices for Legal Education*).

<sup>301</sup> See *supra* text accompanying notes 2-8 and accompanying text (providing an overview of criticisms outlined by the Carnegie and MacCrate Reports).

under the same sets of understandings, and we are not. The apprentices are no longer bringing the useful tools upon which to build the more advanced problem-solving skills required of practicing lawyers. Many are no longer being challenged to engage in higher-order thinking skills in college, and therefore, are objectively weaker candidates for becoming practice-ready, regardless of whether or not they pass the bar.<sup>302</sup> And their maturational issues do not add only to their own frustrations but to the frustrations of the academy, which no longer seems to speak the same language. In many respects, the academy and its students are struggling over the essence of legal education. Whereas the academy still maintains vestiges of a cognitive apprenticeship model, many of its students come to the academy indifferent to the cognitive process, believing they are already journeymen and all they have to do is wait out the three years, pass the bar, and get a job. Unfortunately, this “feud” will continue if we assign the blame only to the academy.

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<sup>302</sup> See *supra* text accompanying notes 68–83 (discussing the decreases in literacy proficiency of potential law students).