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Performance Isn't Everything: The Importance of Conceptual Competence in Outcome Assessment of Experimental Learning

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PERFORMANCE ISN'T EVERYTHING: THE IMPORTANCE OF CONCEPTUAL COMPETENCE IN OUTCOME ASSESSMENT OF EXPERIENTIAL LEARNING

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This article scrutinizes—and ultimately rejects—the recommendations of the Carnegie Report for outcome assessments in experiential legal education. The Carnegie Report argues that practical education should focus on teaching students to mimic the actions of expert lawyers by encouraging students to follow expert protocols, procedures, rules, and checklists that can enable them to deal effectively with lawyering situations. To the contrary, however, an extensive body of cognitive science and neuroscience research on the development of expertise questions the theoretical underpinnings of the Carnegie Report and suggests that educators should focus not on what experts are doing but on what they are thinking as they deal with a lawyering problem. Therefore, this article proposes that outcome assessments in experiential legal education should focus primarily on students learning to reason in practice, and presents an experimental assessment technique designed to evaluate student reasoning in practice. Ultimately, the Carnegie critique developed in this article has significant implications for the drafting of the final ABA standards on outcome assessments which are likely to reach the final stage of the adoption process in late 2012 or early 2013.

INTRODUCTION

On January 15, 2009, US Airways Flight 1549 flew through a flock

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of geese on takeoff from LaGuardia Airport, sucking birds into both of its engines. The engines immediately went dead, turning the plane into a low-flying, extremely heavy glider.[1]

In an emergency situation, US Airways procedures call for the first officer to take the controls, so the captain's decision making is unencumbered by the distraction of actually trying to fly the plane.[2] On Flight 1549, however, Captain Chesley "Sully" Sullenberger assessed the situation and broke with protocol, taking the controls himself. Captain Sullenberger knew that he was the more experienced pilot, he was looking out the side of the plane that faced all the important local landmarks, and furthermore he was not up-to-date with emergency protocols for that particular aircraft. Sully also knew that the first officer, Jeff Skiles, had recently been through training for the aircraft and would therefore more easily find the appropriate checklists and protocols in the bulky emergency handbook.[3]

Unaware that the engines had been damaged beyond repair by the goose strikes, First Officer Skiles quickly initiated the three-page protocol for the loss of both engines.[4] While Skiles was struggling to restart the engines per standard procedure, Sully was considering the options for bringing the plane down safely. He saw that Teterboro Airport, in New Jersey, was too far away to reach at their airspeed and rate of descent. He also calculated that they did not have the ability to turn around and return safely to LaGuardia.[5] Outside the aircraft, it was a calm, clear day. The Hudson River, while dangerously cold, was also home to a great deal of river traffic, which meant that rescuers would be able to reach the plane quickly. Concluding that the safest course of action would be to land in the river, Sully guided the plane to a smooth landing, preserving the lives of everyone aboard. The whole event unfolded in just a few minutes, so quickly that Skiles did not make it past the first page of the three-page checklist for engine failure by the time they hit the water.[6]

Sully obviously demonstrated consummate flying skills by piloting the powerless plane through a gentle descent and then a controlled

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[1] Robert D. McFadden, *Pilot is Hailed after Jetliner's Icy Plunge*, N.Y. Times A1 (January 16, 2009).

[2] *Sully's Tale*, AIR & SPACE MAG. (Feb. 18, 2009), http://www.airspacemag.com/flight-today/Sullys-Tale.html.

[3] *Id.*

[4] National Transportation Safety Board, *Loss of Thrust in Both Engines After Encountering a Flock of Birds and Subsequent Ditching on the Hudson River, US Airways Flight 1549, Airbus A320-214, N106US, Weehawken, New Jersey, January 15, 2009*, 82.

[5] *Sully's Tale*, *supra* note 2.

[6] The protocol was designed for high-altitude engine failure, not low-altitude failure. The solution proposed by the NTSB was to create additional checklists for low-altitude emergencies. National Transportation Safety Board, *supra* note 4, at 52.

landing in the middle of the Hudson River. But focusing on Sully's flying performance can obscure an important element of the incident: the reasoning underlying his performance. To successfully land the plane, Sully ignored the US Airways protocols for command and did not rely on the procedure for restarting the engines. If Sully and Skiles had simply performed the procedures they had been trained to follow, perhaps things would have ended much less successfully. Instead, Sully quickly created a new plan to account for the specifics of the situation. His quick thinking led to the actions that saved the lives of the crew and passengers.

Captain Sullenberger's decision making on Flight 1549 highlights the importance of the cognitive process in expertise. Experts do not simply perform well. They must also reason well.

The lessons about expertise that this story reveals should concern the American Bar Association ("ABA"). The ABA has recently signaled its intention to make a major change in its accreditation standards for law schools by moving away from the current focus on input measures—what students are *taught* in law school[7]—to a focus on learning outcomes—what students *learn* in law school.[8] In 2007, amidst a growing chorus calling for the incorporation of outcome measures into American legal education,[9] the ABA's Council of the

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[7] The current Standard 302(a) mandates a law school to "require that each student receive substantial instruction in:

1. the substantive law generally regarded as necessary to effective and responsible participation in the legal profession;
2. legal analysis and reasoning, legal research, problem solving, and oral communication;
3. writing in a legal context, including at least one rigorous writing experience in the first year and at least one additional rigorous writing experience after the first year;
4. other professional skills generally regarded as necessary for effective and responsible participation in the legal profession; and
5. the history, goals, structure, values, rules and responsibilities of the legal profession and its members."

ABA Sec. on Legal Educ. & Admission to the Bar, *2012-2013 Standards and Rules of Procedure for Approval of Law Schools* (2012) [hereinafter *Standards*].

[8] ABA Sec. on Legal Educ. & Admission to the Bar, *Report of the Outcome Measures Committee* 1 (July 27, 2008) [hereinafter *Outcomes Report*].

[9] *See, e.g.*, GREGORY S. MUNRO, OUTCOMES ASSESSMENT FOR LAW SCHOOLS 50 (2000) ("If a law school is to be effective as an educational institution, it needs to be guided by student outcomes—a statement of the knowledge, abilities, and attributes its students should derive from their legal education."); ROY STUCKEY & OTHERS, BEST PRACTICES FOR LEGAL EDUCATION: A VISION AND A ROADMAP 42 (2007) (urging law schools to describe "what the school's students will be able to do after graduating and how they will do it in addition to what they will know"); WILLIAM M. SULLIVAN, ANNE COLBY, JUDITH WELCH WEGNER, LLOYD BOND & LEE S. SHULMAN, EDUCATING LAWYERS: PREPARATION FOR THE PROFESSION OF LAW 180-2 (2007) (endorsing and commending Munro's exhortations for "greater institutional intentionality"—including the use of outcome measures—in student learning); John O. Sonsteng, Donna Ward, Colleen Bruce and Michael

Section of Legal Education and Admissions to the Bar (the "Council") created a "Special Committee on Output Measures" (the "Outcome Subcommittee") and charged it with determining "whether and how [the Council] can use output measures, other than bar passage and job placement, in the accreditation process."[10] After conducting a thorough review of legal education around the world, professions other than law, and American legal scholarship about outcomes,[11] the Outcome Subcommittee's report recommended a re-examination and reframing of the Standards for Approval of Law Schools (the "Standards") "to reduce their reliance on input measures and instead adopt a greater and more overt reliance on outcome measures."[12]

Responding to the Outcome Subcommittee's report, the ABA Standards Review Committee has proposed new approval criteria (the "Proposed Standards") that heavily incorporate outcome measures. The latest version of the Proposed Standards[13] would require each law school to articulate the outcomes it will seek to give its students.[14] In conjunction with selecting outcomes, law schools would be required to design a curriculum to create those outcomes,[15] assess student learning through a variety of methods, give students meaningful feedback,[16] and regularly and continuously assess their success at achieving their student learning outcome goals.[17]

Although the proposed changes to the accreditation requirements

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Peterson, *A Legal Education Renaissance: A Practical Approach for the Twenty-First Century*, 34 WM. MITCHELL L. REV. 303, 456 (2007) (calling on law schools to incorporate into their curricula "general and specific learning objectives that provide students an opportunity to demonstrate a predetermined competency level.").

[10] ABA Sec. on Legal Educ. & Admission to the Bar, *Interim Report of the Outcome Measures Committee* 1 (May 12, 2008).

[11] *Outcomes Report*, *supra* note 8, at 1.

[12] *Id.*

[13] *See* ABA Sec. on Legal Educ. & Admission to the Bar, *Draft Report for the April 2012 Meeting of the ABA Standards Review Committee* (2012) [hereinafter *Draft Report*]. As of this writing in September 2012, the Draft Report is in the final stages of consideration by the Standards Review Committee. At its July 2012 meeting, the Standards Review Committee conducted its scheduled second consideration of the Proposed Standards without making changes to the relevant sections. The Proposed Standards are scheduled for a third and tentatively final consideration at its November 2012 meeting. After the final review, the Committee will send the Draft Report to the Council. The Council will then review the Draft Report and conduct a public comment process, including holding public hearings. If the Council decides to revise or amend the Standards, the ABA House of Delegates must review the changes. The House of Delegates will then either concur in the revisions or send them back to the Council for additional consideration, but the Council has the final authority with respect to adoption of revisions. *Standards*, *supra* note 7, at vi-vii, Standard 803, Internal Operating Practices 9, 11.

[14] *Draft Report*, *supra* note 13, at Standard 302(a).

[15] *Id.* at Standard 304(a).

[16] *Id.* at Standard 305.

[17] *Id.* at Standard 306(a).

would generally afford law schools flexibility in determining their own learning outcomes, they also include several required outcome goals. One mandatory outcome measure that schools would be required to adopt is "competency as an entry-level practitioner" in "a depth in and breadth of" professional skills.[18] This requirement would represent a significant change for experiential legal education: at present, law schools are required only to provide "substantial instruction" in professional skills, with no competency requirement.[19]

Requiring law schools to focus on instruction for competency in skills is a laudable goal. However, neither the proposed standards nor the proposed interpretations attempt to define the nature of competency in skills. To effectively apply Proposed Standard 302(b), the ABA will first need to articulate a definition of competency in practice: is it simply the ability to perform certain skills, or, as in Sully's case, the ability to effectively reason through problems in practice?

Much of the recent focus by the ABA—and legal scholarship—on defining learning outcomes has been influenced by the Carnegie Foundation for the Advancement of Teaching's 2007 monograph, *Educating Lawyers: Preparation for the Practice of Law*[20] (the "Carnegie Report" or the "Report" or "Carnegie"), which argues that law schools should make a greater effort to prepare students for the professional practice of law.[21] Carnegie draws heavily on the work of Hubert Dreyfus and Stuart Dreyfus[22] to articulate a theory of expert legal practice based on performance. This theory leads to a model for training law students in lawyering skills that stresses the importance of learning the concepts and procedures of the legal profession in a way that is structured for performance. By focusing on performance as the measure of competence, Carnegie emphasizes the importance to curriculum design and outcome assessment of protocols and techniques for performing particular lawyering tasks.

In reaching its conclusions, Carnegie had the benefit of another report on legal education reform, *Best Practices for Legal Education*[23] ("*Best Practices*"). *Best Practices* was published in 2007 by the Clinical

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[18] *Id.* at Standard 302(b). Although the Proposed Standards are silent about which professional skills are required to give sufficient depth and breadth, a proposed Interpretation indicates that "interviewing, counseling, negotiation, fact development and analysis, conflict resolution, organization and management of legal work, collaboration, cultural competency, and self-evaluation are among the professional skills that could fulfill" this Proposed Standard. *Id.* at Interpretation 302-2.

[19] *Standards*, *supra* note 7, at Standard 302.

[20] SULLIVAN ET AL., *supra* note 9.

[21] *See infra* notes 28–40 and accompanying text.

[22] SULLIVAN ET AL., *supra* note 9, at 116-19. *See infra* notes 66–79 and accompanying text.

[23] STUCKEY ET AL., *supra* note 9.

Legal Education Association, a national organization of clinical law professors, with the purpose of providing "a vision of what legal education might become if legal educators step back and consider how they can most effectively prepare students for practice."[24] Like Carnegie, *Best Practices* focuses on performance as a measure of competency and suggests varied techniques for teaching law students the tools of the trade.[25]

However, current research into expert practice indicates that the ability to follow protocols is not a fully accurate reflection of competence.[26] As is apparent from the landing of Flight 1549, experts do not simply rely on standardized protocols. Sully quickly reasoned through the problem and crafted an appropriate solution. His quick reasoning in the problem-solving process highlights the centrality of cognition to his expertise as a pilot.

Current research into expert practice indicates that reasoning is an important element of expertise not only in the work of piloting an airplane, but also in the practice of professional skills such as lawyering. Expertise in practice involves thinking, reasoning, and decision-making processes.[27] Therefore, this research indicates that to teach law students to handle their clients' problems expertly, learning objectives should include the development of effective reasoning strategies to handle different and varied problems, not just the ability to perform in prescribed ways.

Given the influence of Carnegie, a strong possibility exists that the ABA—or a law school following the lead of Carnegie—will unreflectively define "competency of an entry-level practitioner" primarily in terms of the ability to perform certain lawyering tasks rather than the capacity to reason in practice. The ramifications of such a definition for legal education would be quite significant. If Carnegie's approach to learning outcomes prevails, all aspects of experiential legal education—from curriculum development to individual course design to outcome assessment—will be focused on training students for standard performance, not for reasoning in practice.

In this Article, we respond to the ABA's call for increased focus on learning outcomes by critically examining the nature of "competency in practice." Relying on cognitive science research on the qualities of expertise, we, unlike Carnegie, propose that outcomes in experiential legal education should be focused primarily on students learning to reason in practice. In Part I we describe the approach to

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[24] *Id.* at 1.

[25] *See infra* notes 57–61 and accompanying text.

[26] *See, e.g., infra* notes 95–131 and accompanying text.

[27] *See infra* notes 80–131 and accompanying text.

legal education, especially the theories of experiential learning and expertise, underpinning the Carnegie Report. In Part II we present findings on expert practice from current cognitive science research and contrast them with the performance-based focus of Carnegie. In Part III we address the different measures of outcome assessment that follow from Carnegie's approach and from our approach. In Part IV, we describe and consider the applications of our own experiment in assessing reasoning in practice, which asks students to think aloud as they reason through problems. Finally, in Part V, we provide recommendations to the ABA and to law schools in defining learning outcomes such that assessment methods can be tailored to measuring the development of professional expertise. We hope that this article will influence the outcome assessment conversation in a constructive way.

I. THE CARNEGIE REPORT

To describe its vision of professional competence, Carnegie identifies what it calls "the three apprenticeships" of professional education.[28] The first of these focuses on student knowledge and "the way of thinking" of the legal profession.[29] Carnegie calls this the cognitive apprenticeship.[30] The second is the practical apprenticeship, which is concerned with "the forms of expert practice shared by competent practitioners."[31] The third is the ethical and social apprenticeship, which incorporates "the purposes and attitudes that are guided by the values for which the professional community is responsible."[32] Carnegie argues that law schools have focused overwhelmingly on the first apprenticeship, to the neglect of the second and third.

A. The Signature Pedagogy

Carnegie asserts that traditional legal education has been narrowly focused on the cognitive apprenticeship, through the almost universal use of the "case-dialogue" method of education, in which professors lead students through discussions of appellate cases to tease out legal analysis. Carnegie calls the case-dialogue method the "signature pedagogy" of legal education, its distinct method for inducting new members into the profession.[33] Assessing the success of

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28 SULLIVAN ET AL., *supra* note 9, at 28.

29 *Id.* at 28.

30 *Id.* at 60.

31 *Id.* at 28.

32 *Id.*

33 *Id.* at 23. The signature pedagogies of other professions described by Carnegie include "the varieties of design and performance studio in engineering and architecture, bedside teaching and clinical rounds in medicine and nursing, the interpretation of texts and instruction in preaching in seminaries." *Id.*

law schools' signature pedagogy in "preparing students for the complex demands of professional work—to think, to perform, and to conduct themselves like professionals,"[34] Carnegie finds it wanting. While endorsing the case-dialogue method in the first year of law school as a method of initiating students into the study of law, Carnegie criticizes law schools' overemphasis on legal analysis through continued use of the case-dialogue method with diminishing returns in the second and third years.[35]

Carnegie argues that, although the signature pedagogy rapidly socializes students into an academic approach to studying law,[36] and adequately teaches students to engage in legal analysis and to "think like a lawyer,"[37] it has several consequences. Rather than preparing students to become lawyers, the signature pedagogy works to "prolong and reinforce the habits of thinking like a student rather than an apprentice practitioner."[38] Carnegie argues that a narrow focus on legal analysis has a "corrosive effect"[39] on professional development because it marginalizes practical and ethical aspects of lawyering. To remedy the current imbalance in legal education, the Carnegie Report argues that legal education should establish a new signature pedagogy, one that incorporates training in cognitive, practical, and ethical aspects of law through "educational experiences oriented toward preparation for practice."[40]

B. A Model for Learning from Practice

An important aspect of Carnegie's model is its proposal for increased emphasis on the practical apprenticeship in legal education. In the traditional legal apprenticeship, as Carnegie describes it, a significant amount of learning came informally from observation and imitation of an expert.[41] The expert modeled performance in such a way that the learner could eventually imitate the performance, while the expert provided feedback to guide the learner in making the activity his or her own.[42]

Carnegie acknowledges that the traditional apprenticeship, consisting of an extended, close, individual relationship designed to offer practical training, is not realistic in legal education today. Nonethe-

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[34] *Id.* at 27.
[35] *Id.* at 77.
[36] *Id.* at 186.
[37] *Id.*
[38] *Id.* at 188.
[39] *Id.* at 77.
[40] *Id.* at 88.
[41] *Id.* at 26–27, 98.
[42] *Id.* at 26.

less, Carnegie purports to reformulate the apprenticeship model to incorporate the benefits of such a relationship into a modern educational setting.[43] In its reformulation, Carnegie urges that the central elements of expert performance should be passed on in a more formal fashion. They should be studied, distilled, simplified, and taught to novices "in the form of rules, procedures, protocols and organizing metaphors for approaching situations or problems."[44] Carnegie refers to these devices as "scaffolds."[45] A scaffold could be, for example, a particular interviewing procedure, a protocol for problem solving, a technique for negotiating a deal, or a method for drafting a contract. With its focus on techniques and procedures, Carnegie's model is based on studying the performance of experts and teaching students to imitate that performance.

In the Carnegie model, increased competence comes as a student gradually accumulates a "toolkit of well-founded procedures"[46] in different areas of legal practice. Within this performance framework, "the prime learning task of the novice in law is to achieve a basic acquaintance with the common techniques of the lawyer's craft."[47] In this approach, student reasoning takes a backseat to learning expert techniques. In fact, Carnegie argues that reasoning and attention to context by novice learners is unhelpful; instead, it posits that students should be taught to "recognize certain well-defined elements of the situation and apply precise and formal rules to these elements, regardless of what else is happening."[48] To Carnegie, the goal of the practical apprenticeship should be that students accumulate experience by practicing in accordance with the rules.[49] With this learning goal, the focus of educators tasked with teaching novice practitioners should therefore be on particular "scaffolds," the techniques, rules, and procedures of expert practice.

C. Using Scaffolds in Legal Education

The two examples below illustrate the types and uses of scaffolds in a performance-based model of practical legal education:

1. The T-Funnel Interview

As an example of the concept of a scaffold for law students, Car-

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[43] *Id.* at 100.
[44] *Id.* at 99.
[45] *Id.* at 98.
[46] *Id.* at 103.
[47] *Id.* at 117.
[48] *Id.*
[49] *Id.*

negie points to the textbook *Lawyers as Counselors*,[50] which provides a framework for legal interviewing and counseling developed by several law professors. The text offers step-by-step methods, identifying a set of "practical guides and techniques"[51] for novice interviewers and counselors.

One of *Lawyers as Counselors'* techniques that is touted by Carnegie is "T-funnel" interviewing. Such an interview "is a pattern of information-seeking"[52] with two elements: open questions—the upper part of the T—induce clients to think freely about the problem and elicit information from the clients' perspective. Closed questions—the lower part of the T—are used to focus narrowly on gathering information related to specific legal aspects of the client's problem. The premise underlying this technique is that "thorough information-gathering rests on a combination of open and closed questions"[53] in a particular sequence: start with an open question and gradually narrow the questioning.

Expanding on the basic T-funnel concept, *Lawyers as Counselors* gives techniques for using the T-funnel in specific interview situations, such as gathering information about a specific event or a particular topic. *Lawyers as Counselors* also provides techniques for resolving problems frequently encountered by beginners, such as avoiding getting sidetracked, "cycling" through multiple T-funnels to capture as much information as possible, and facilitating recollection in forgetful clients.[54] The scaffold gives a novice a variety of techniques to use in different interviewing situations.

For a teacher, using a scaffold in Carnegie's model takes on a distinct form: the scaffold is introduced to students, who are given multiple opportunities to practice using it, and to receive feedback from the instructor on how they use it. In this way, scaffolds can help guide students' "assimilation of more skillful practice."[55] By practicing the application of the T-funnel technique to interviewing, a student can accumulate enough experience with this scaffold to allow her to master its application. The T-funnel technique will then become part of the "toolkit" that, according to Carnegie, the student must assemble to achieve "skilled performance"—the goal of the practical apprenticeship.[56]

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50 DAVID A. BINDER, PAUL BRUCE BERGMAN, SUSAN C. PRICE & PAUL R. TREMBLAY, LAWYERS AS COUNSELORS: A CLIENT-CENTERED APPROACH (2d ed. 2004).

51 SULLIVAN ET AL., *supra* note 9, at 102.

52 DAVID A. BINDER ET AL., *supra* note 50, at 167.

53 *Id.*

54 *Id.* at 167-78.

55 SULLIVAN ET AL., *supra* note 9, at 101-2.

56 *Id.* at 124.

2. *The PrOACT Methodology for Problem Solving*

A second example of a scaffold for novices comes from *Best Practices*.[57] As an example of an effective methodology for helping novices develop skills for problem solving,[58] *Best Practices* presents the PrOACT method of decision making, with its broad applicability and ease of recall.[59] The acronym PrOACT is created from these five steps: Problem, Objectives, Alternatives, Consequences, Tradeoffs.[60] In this methodology, the lawyer 1) defines the problem to be solved, 2) determines the desired objective(s), 3) identifies alternative courses of action, 4) evaluates the consequences of each alternative, and 5) structures how to make tradeoffs among objectives and alternatives as a prelude to making the decision.[61] The scaffold is a straightforward technique for structuring the task of problem solving.

D. The Impact of Carnegie

It would be difficult to overstate the influence of the Carnegie Report on recent scholarship about legal education. The Report has been cited as an authority on legal education in countless scholarly articles across a broad spectrum of pedagogical issues.[62] Several con-

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[57] *See* STUCKEY ET AL., *supra* note 9, at 64.

[58] *Id.*

[59] *Id.*

[60] *Id.*

[61] *Id.*

[62] *See, e.g.,* Charlotte S. Alexander, *Learning to Be Lawyers: Professional Identity and the Law School Curriculum*, MD. L. REV. 465 (2011) (using Carnegie as a "starting point" for integrating professionalism into curriculum); Kathleen M. Burch and Chara Fisher Jackson, *Creating the Perfect Storm: How Partnering with the ACLU Integrates the Carnegie Report's Three Apprenticeships*, 3 J. MARSHALL L.J. 51 (2009) (describing a course designed explicitly to integrate Carnegie's recommendations); Kate Nace Day & Russell G. Murphy, *"Just Trying to Be Human in This Place": Storytelling and Film in the First Year Law School Classroom*, 39 STETSON L. REV. 247 (2009) (describing use of storytelling in terms of Carnegie's critiques of legal education); Mark L. Jones, *Fundamental Dimensions of Law and Legal Education: Perspectives on Curriculum Reform, Mercer Law School's Woodruff Curriculum and . . ."Perspectives,"* 63 MERCER L. REV. 975 (2012) (relying on Carnegie to support argument for requiring "perspectives" courses); Madeline June Kass, *Educating the Next Generation of Environmental Lawyers*, 25 NAT. RESOURCES & ENV'T 52 (2010) (describing efforts of environmental law teachers to respond to Carnegie); Harriet N. Katz, *Evaluating the Skills Curriculum: Challenges and Opportunities for Law Schools*, 59 MERCER L. REV. 909 (2008) (suggesting ways to change skills curriculum in light of Carnegie's goals for skills education); Patricia Grande Montana, *Lessons from the Carnegie and Best Practices Reports: A Look at St. John's University School of Law's Street Law Program as a Model for Teaching Professional Skills*, 11 T.M. COOLEY J. PRAC. & CLINICAL L. 97 (2008) (citing conformity with Carnegie's suggestions as support for effectiveness of Street Law course); Ira Steven Nathenson, *Best Practices for the Law of the Horse: Teaching Cyberlaw and Illuminating Law through Online Simulations*, 28 SANTA CLARA COMPUTER & HIGH TECH. L.J. 657 (2012) (proposing online simulations as a response to Carnegie's critiques of case-analysis pedagogy); Brent E. Newton, *Preaching What They Don't Practice: Why Law Faculties' Preoccupation with Impractical Scholarship*

ferences have focused on Carnegie.[63] Law schools have cited the Report as inspiration for curricular design.[64] Indeed, the ABA Outcomes Subcommittee acknowledged Carnegie as a source of "significant guidance"[65] in its study of outcome measures in legal education.

In light of the potential impact of the Carnegie Report on selection and definition of outcomes in the wake of the ABA's proposed reformulation and application of its Standards, it is important to scrutinize Carnegie's recommendations rigorously rather than accepting them uncritically. This scrutiny benefits from an understanding of the theoretical origins of the expert performance model adopted by Carnegie.

II. ROLE OF COGNITION IN EXPERT PERFORMANCE

A. Dreyfus Theory of Expertise

The crucial problem underlying Carnegie's focus on performance assessment is that it does not rest on a sound theoretical or empirical foundation. Cognitive science findings challenge the expertise theory that Carnegie employs and suggest a different approach to the issue. This alternative approach highlights the cognitive attributes of expert performance rather than the performance itself. Such a difference in

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and Devaluation of Practical Competencies Obstruct Reform in the Legal Academy, 62 S.C. L. REV. 105 (2010) (citing Carnegie's recommendations in support of radical restructuring of law faculty); Sean M. O'Connor, *Teaching IP From an Entrepreneurial Counseling and Transactional Perspective*, 52 ST. LOUIS U. L.J. 877 (2008) (citing Carnegie's critique of case method in support of experiential teaching of intellectual property law); John O. Sonsteng, Donna Ward, Colleen Bruce and Michael Peterson, *supra* note 9 (citing Carnegie as support for the need for reform of entire legal education system); Emily Zimmerman, *An Interdisciplinary Framework for Understanding and Cultivating Law Student Enthusiasm*, 58 DEPAUL L. REV. 851 (2009) (citing Carnegie for evidence of "lack of enthusiasm" of law students).

[63] *See International Conference on the Future of Legal Education* http://law.gsu.edu/FutureOfLegalEducationConference/ (indicating that the 2008 conference would take the Carnegie Report as its "point of departure" for exploring the future of legal education); *Legal Education Reform after Carnegie: Bringing Law-in-Action into the Law School Classroom* http://www.law.wisc.edu/ils/2010legaleducationconf/homepage.html (describing how the 2010 conference took its "impetus" partially from the publication of Carnegie); Sharon L. Beckman and Paul R. Tremblay, *The Way to Carnegie: Practice, Practice, Practice—Pedagogy, Social Justice and Cost in Legal Education: Foreword*, 32 B.C. J. L. & SOC. JUST. 215 (2012) (describing Fall 2011 conference focused on Carnegie's emphasis on preparing law students for practice).

[64] Erwin Chemerinsky, the Founding Dean of the University of California Irvine School of Law, designed the skills-intensive curriculum of the new law school "with the Carnegie Report's recommendations in mind." Drew Coursin, *Acting Like Lawyers*, 2010 WIS. L. REV. 1461, 1473 (2010). *See also The Third Year in Detail,* http://law.wlu.edu/thirdyear/page.asp?pageid=651 (describing Carnegie as one of the sources of insight that was particularly influential in Washington & Lee University Law School's development of an entirely experiential third-year curriculum beginning in 2008).

[65] *Outcomes Report*, *supra* note 8, at 5-6.

emphasis is critical to the issue of law student assessment, because the methods for assessing performance diverge widely from those used to assess cognition.

Carnegie's theory of expertise is based entirely on the work of two brothers, Hubert and Stuart Dreyfus, trained respectively as a philosopher and an engineer.[66] The Dreyfus brothers posit that expertise is simply a matter of pattern recognition.[67] They argue, for example, that we are able to ride bikes because of prior experiences operating such vehicles, not because we are engaging in some kind of cognitive process.[68] As they observe, "No detached choice or deliberation occurs. It just happens, apparently because the proficient performer has experienced similar situations in the past and memories of them trigger plans similar to those that worked in the past and anticipation of events similar to those that occurred."[69] They call this ability to use patterns without cognitive rules "holistic similarity recognition" and argue, "Normally, experts don't solve problems and don't make decisions; they do what normally works."[70]

With this theoretical outlook, the Dreyfuses assert that acquisition of this kind of expert intuition requires the novice to learn protocols and strategies for identifying the facts and features of a particular situation and performing in response to these facts.[71] They also contend that people pass through at least five stages of qualitatively different perceptions of their tasks (novice, advanced beginner, competence, proficiency, expertise) as they acquire a skill through in-

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[66] SULLIVAN ET AL., *supra* note 9, at 116-19. The only other source cited by the Report on the issue of expertise is a book on nursing education which adopts the Dreyfus theory. PATRICIA BENNER, CHRISTINE A. TANNER & CATHERINE A. CHESLA, EXPERTISE IN NURSING PRACTICE: CARING, CLINICAL JUDGMENT, AND ETHICS (1996). Like the Dreyfus theory, Benner's work has also been subject to serious criticism. *See, e.g.,* Fernand Gobet & Philipe Chassy, *Towards an Alternative to Benner's Theory of Expert Intuition in Nursing: A Discussion Paper*, 45 INT'L J. NURSING STUD. 129 (2008); Ian English, *Intuition as a Function of the Expert Nurse: A Critique of Benner's Novice to Expert Model*, 18 J. ADVANCED NURSING 387 (1993). The Carnegie Report is not alone in its wholesale adoption of the Dreyfus model. In the medical profession, this model has also been accepted by many physicians without any serious examination. Adolfo Peña, *The Dreyfus Model of Clinical Problem-Solving Skills Acquisition: A Critical Perspective*, 15 MED. EDUC. ONLINE 1, 2 (2010), http://journals.sfu.ca/coaction/index.php/meo/article/view/4846/pdf_3.

[67] HUBERT L. DREYFUS & STUART E. DREYFUS, MIND OVER MACHINE: THE POWER OF HUMAN INTUITION AND EXPERTISE IN THE ERA OF THE COMPUTER 28 (1986).

[68] *Id.* at 16. The Dreyfus model was derived from direct observations of experts such as jet pilots and dancers. These types of experts are used to tackling well-structured problems, in contrast to practitioners in other domains, such as law and medicine, who often confront ill-structured problems. Peña, *supra* note 66, at 6. For the differences between these two problem categories, *see infra* notes 108–09 and accompanying text.

[69] DREYFUS & DREYFUS, *supra* note 67, at 28.

[70] *Id.* at 28, 30-31.

[71] *See id.* at 20-21.

struction and experience.[72] After progressing through these five stages of accumulated experience, a learner develops the unconscious capacity to recognize new situations as similar to remembered ones and, through this process, ultimately becomes an expert.[73]

These stages of development, the Dreyfuses claim, reflect an evolution from the abstract toward the concrete, "*from* the analytic behavior of the detached subject, consciously decomposing his environment into recognizable elements, and following abstract rules, *to* involved skilled behavior based on accumulation of concrete experiences and the unconscious recognition of new situations similar to whole remembered ones."[74] In the Dreyfuses' own words, as students become experts, they act "arationally."[75] In other words, expert performance is essentially mindless.[76] Accordingly, under the Dreyfus approach, expertise is not reflected as much in cognitive competencies as in mindless performances responding to perceived situations.

It should now be apparent why the Carnegie apprenticeship model focuses on performance rather than on cognition. Consistent with Dreyfus, Carnegie envisions that students should first learn rules, strategies, methods, and protocols to enable them to recognize patterns and perform in particular situations.[77] Following Dreyfus, the report contends that after numerous experiences, students progress through stages and acquire expertise. As they develop expertise, they stop relying on abstract rules and instead respond unconsciously to new situations by perceiving similarities to whole remembered past experiences.[78]

In sum, Carnegie contends that the focus of experiential education should be primarily on performance. The desired outcome of the educational process is the student's "ability to judge that when a situation shows a certain pattern of elements, it is time to draw a particular conclusion. . .[and to] *act* in a certain way to achieve the selected goal."[79] From this perspective, the student's action, rather than her

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[72] *Id.* at 19-35.

[73] *Id.* at 35.

[74] *Id.*

[75] *Id.* at 36.

[76] *See* Tim Thornton, *Clinical Judgment, Expertise and Skilled Coping*, 16 J. EVALUATION IN CLINICAL PRAC. 284, 290 (2010). *See also* Peña, *supra* note 66, at 2 (noting that under the Dreyfus model, "the brain is a secondary or spurious referent"). It is surprising that the clinical community, with its long tradition of encouraging the teaching of "reflective practice," *see, e.g.*, Richard K. Neumann, *Donald Schön, the Reflective Practitioner, and the Comparative Failures of Legal Education*, 6 CLIN. L. REV. 401 (2000), has been at the forefront of urging the adoption of a report that is based on a theory which envisions mindlessness as the goal of legal education.

[77] SULLIVAN ET AL., *supra* note 9, at 99, 117.

[78] *Id.* at 116.

[79] *Id.* at 117 (emphasis added).

reasoning process, has paramount importance.

B. Cognitive Science Critique of the Dreyfus Theory

Most cognitive scientists recognize the role that pattern recognition plays in expert performance.[80] Nonetheless, they reject the notion that intuitive pattern recognition alone is determinative of expert performance. In fact, the Dreyfus theory conflicts with a number of empirical findings on expert decision making.

First, contrary to the Dreyfus theory, studies show that in many domains requiring complex problem solving, expertise does not produce a decrease in abstract thought and a concurrent increase in concrete thinking. Indeed, in these domains, experts have been found to analyze problems at a deeper, more abstract level than nonexperts.[81] Second, the existence of progressive stages in expert development is not supported by the evidence.[82] The Dreyfus theory suggests that the more experience individuals have in a particular area, the more intuition they acquire, and the more expertise they gain. Studies have shown, however, that those individuals with extensive experience in a field do not necessarily perform better than people with less training.[83] In fact, the number of years of experience in a field is a poor predictor of attained performance.[84] It is not unusual, for example, to observe lawyers with 30 to 40 years of experience in a particular court-

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[80] *See, e.g.,* Vimla L. Patel, David R. Kaufman & José F. Arocha, *Steering through the Murky Waters of a Scientific Conflict: Situated and Symbolic Models of Clinical Cognition*, 7 ARTIFICIAL INTELLIGENCE IN MED. 413, 421 (1995) (in examining cognition in medical treatment, authors acknowledge that physicians' performance in routine situations often necessitates immediate nonanalytic responses and that "there are diagnostic tasks in perceptual domains such as dermatology and radiology in which a significant degree of skilled performance. . .rel[ies] more on pattern recognition than deliberative reasoning.").

[81] Fernand Gobet & Phillipe Chassy, *Expertise and Intuition: A Tale of Three Theories*, 19 MIND & MACHINE 151, 154 (2009) (observing that in physics, experts solve problems at "a deep, abstract level, while novices perform at a superficial, concrete level.").

[82] *Id.*

[83] K. Anders Ericsson, *Deliberate Practice and Acquisition of Expert Performance: A General Overview*, 15 ACAD. EMERGENCY MED. 988, 989 (2008) [hereinafter Ericsson, *Deliberate Practice*]; K. Anders Ericsson, James Whyte & Paul Ward, *Expert Performance in Nursing: Reviewing Research on Expertise in Nursing within the Framework of the Expert-Performance Approach*, 30 ADVANCES IN NURSING SCI. E58, E59 (2007); *see generally* Dennis J. Devine & Steve W.J. Kozlowski, *Domain-Specific Knowledge and Task Characteristics in Decision Making*, 64 ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES 294, 295 (1995).

[84] Indeed, some studies even suggest that professional performance decreases in accuracy and consistency with length of experience. K. Anders Ericsson, *The Influence of Experience and Deliberate Practice on the Development of Superior Expert Performance*, *in* THE CAMBRIDGE HANDBOOK OF EXPERTISE AND EXPERT PERFORMANCE 685, 688 (K. Anders Ericsson et al. 2006); Jean Bédard & Michelene T. H. Chi, *Expertise in Auditing*, 12 AUDITING: J. PRAC. & THEORY 21, 29 (Supp. 1993) (suggesting performance of auditors decreased in accuracy and consistency with length of experience).

house who are far from exhibiting expertise in their field. Finally, neuroscience evidence does not support the notion of holistic similarity recognition. This research demonstrates that complex decision making entails a rich connection of different neural subsystems (explicit and implicit) and an interplay between them.[85]

Apparently, then, some other factors must be involved in expert performance beyond mere pattern recognition acquired through accumulated experiences. Contrary to the Dreyfus theory, most cognitive scientists contend that, in fact, experts do use particular cognitive processes in their decision making.[86] These processes are not always conscious and deliberate. Rather, they reflect the interaction between implicit knowledge—unconscious abstract representations that experts have acquired through experience and their knowledge of the domain—and explicit knowledge—explicit representations which are conscious and can be verbalized.[87]

Especially in domains like law and medicine, in which complex knowledge systems and symbolic representations play an integral role, more is involved in making decisions than mere pattern recognition of previous similar situations.[88] For example, although she may not be aware of all the cognitive processes involved, when a physician evaluates a patient, she is conscious of the patient's characterization of his symptoms, her own diagnosis of the problem, and her requests for tests.[89] By overlooking the complex and rich interaction between implicit and explicit knowledge, the Dreyfus model fails to explain skills that are not just routines but instead involve complex tasks, such as finding solutions to problems.[90]

Unlike driving a car or riding a bike, handling a legal problem in practice requires more than intuition based on pattern recognition. Lawyers must juggle, for example, the substantive legal doctrine, the procedural context, the particular facts of the situation, the client's needs, and the cultural and social context. The Dreyfus theory may

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[85] Peña, *supra* note 66, at 5.

[86] *See, e.g.,* Gobet & Chassy, *supra* note 66, at 132; John R. Anderson, Lynn Reder & Herbert A. Simon, *Situated Learning and Education*, EDUC. RESEARCHER, May 1996, at 5; Patel et al., *supra* note 80, at 413.

[87] *See, e.g.,* Peña, *supra* note 66, at 5-6; Patel et al., *supra* note 80, at 421-22.

[88] *See, e.g.,* Geoff Norman, *The Basic Role of Basic Science*, 17 ADVANCES HEALTH SCI. EDUC. 453, 454 (2012) (observing that "[r]ecent studies of clinical reasoning show that expert diagnosis is characterized by . . . some form of pattern-recognition . . . followed by a more systematic confirmation"); Patel et al., *supra* note 80, at 417 (examining medical profession, researchers observe, "[t]he complex and varied nature of medicine demands that a physician acquire certain abstract biomedical models that have a certain degree of generalizability across classes of problems, and medical tasks (e.g., diagnostic and therapeutic decision making). This necessitates the development of rich symbolic representations.").

[89] Peña, *supra* note 66, at 6.

[90] *Id.*

account for simple procedurally-oriented skills like asking for an adjournment or conducting an inquest to obtain a default judgment, but it does not address the kinds of complex decision making required in most lawyering. Lawyers make decisions at a much more complex conceptual level than just recognizing patterns, and real expertise is associated with this higher level.

These insights from cognitive science suggest that expert lawyers need more than simple rules, protocols, and strategies to facilitate pattern recognition. They need to acquire cognitive processes that help them organize the abundance of information pertinent to a case.[91] Yet these essential cognitive processes are largely ignored by the Dreyfuses and the Carnegie Report. Just as researchers have concluded that the Dreyfus theory "is too simple to account for the complex pattern of phenomena linked to expert intuition" in nursing, so too should the same conclusion apply to the practice of law.[92]

C. Cognitive Processes Used by Experts

Relying on the Dreyfus model of expertise, the Carnegie Report eschews the importance of "formal modes of thinking" and instead emphasizes "skilled human performance" as the focus of lawyering skills education.[93] To move from novice to expert, the Report asserts, students must acquire "the common techniques of the lawyer's craft" for such performance.[94] In contrast to focusing simply on expert techniques and protocols, cognitive scientists have looked to the different reasoning processes that are used by experts when making decisions in practice. It is the students' acquisition of these cognitive processes, they assert, that is at least as significant, if not more significant, in the development of expertise.

1. Expert Mental Schemas

One attribute of expertise identified by cognitive scientists is the use of schemas, frameworks of representations that help experts engage quickly in complex reasoning. These researchers distinguish be-

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[91] *See generally* Anderson et al., *supra* note 86, at 9 (criticizing apprenticeship models of instruction such as those touted by Carnegie, and arguing that "the real goal should be to get students motivated and engaged in the cognitive processes that will transfer. What is important is what cognitive processes a problem evokes and not what real-world trappings it might have. Often real-world problems involve a great deal of busy work and offer little opportunity to learn the target competencies.").

[92] Gobet & Chassy, *supra* note 66, at 132. *See also* Peña, *supra* note 66, at 6 (arguing that "[a]nyone who wants to propose a model to develop clinical problem-solving skills, must recognize that the skills used to solve [ill-defined] problems are of a different nature than the skills used to solve [well-defined] problems.").

[93] SULLIVAN ET AL., *supra* note 9, at 116.

[94] *Id.* at 116–17.

tween working memory and long-term memory. Working memory is equivalent to conscious thought. Our working memory is only capable of holding seven elements of information at a time and can only deal simultaneously with two or three items when processing information. Therefore, anything beyond the simplest cognitive activities overwhelms working memory.[95] In contrast, long-term memory can store large amounts of information and engage in complex cognitive processes. We are not directly conscious of long-term memory, but "human intellectual prowess comes from this stored knowledge, not from an ability to engage in long, complex chains of reasoning in working memory."[96]

Knowledge is stored in long-term memory in the form of schemas. Schemas are "ordered patterns of mental representations that encapsulate all our knowledge regarding specific objects, concepts, or events."[97] They are sophisticated, unconscious problem-solving rules that allow us to organize information efficiently. For instance:

> [w]hen faced with a problem such as $(a+b)/c = d$, solve for a, people may immediately and automatically know that this problem is solved by multiplying out the denominator as the first move. They have an automated schema for this problem that tells them immediately, without conscious processing, how the problem should be solved.[98]

We develop schemas from repeated encounters with similar situations. From those recurring experiences, we are able to categorize which characteristics of a given event are relevant, which should be stored for the future, and which should be rejected as irrelevant.[99] For complex problem solving such as that required in law or medicine, the framework around which these categorizations are developed is the basic doctrine of the profession.[100]

In regard to the acquisition of expertise in a profession, researchers theorize that as a result of greater experience in a particular domain, experts reflexively use their well-developed schemas to filter out irrelevant data and focus on relevant information to derive solutions to problems.[101] Experts automatically use their schemas to delve

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[95] John Sweller, Jeroen J. G. van Merrienboer & Fred G. W. C. Paas, *Cognitive Architecture and Instructional Design*, 10 EDUC. PSYCHOL. 251, 252-53 (1998).

[96] *Id.* at 253-54.

[97] Mark P. Higgins & Mary P. Tully, *Hospital Doctors and Their Schemas about Appropriate Prescribing*, 39 MED. EDUC. 184, 185 (2005) (citations omitted).

[98] Sweller et al., *supra* note 95, at 257.

[99] *Id.*

[100] *See* Gobet & Chassy, *supra* note 66, at 133; Stefan H. Krieger, *Domain Knowledge and the Teaching of Creative Legal Problem Solving*, 11 CLIN. L. REV. 149, 267-69 (2004).

[101] Patel et al., *Reasoning and Instruction in Medical Curricula*, 10 COGNITION & IN-

into the deep structure of a situation (its systematic properties), and they seek to reformulate it in a way that enables them to use domain knowledge and previous experience to determine a course of action.

In the field of law, the anchors for schemas are basic legal doctrine (e.g., contract, tort, property, evidence, and agency law; the rules of procedure; professional responsibility). As novice lawyers delve into practice, the doctrinal framework helps them to organize their experiences, and they begin to construct schemas. As they accumulate experiences, these schemas assist them in handling new and unfamiliar cases more effectively and efficiently.

From a cognitive perspective, expert lawyers conducting a client interview in a personal injury case involving an automobile accident are not always consciously considering, for example, each element of a negligence claim and deductively crafting a theory. Rather, their schemas developed from past experiences, and structured around basic legal doctrines, help them to focus their inquiry semi-automatically on those elements. In this instance, their inquiry will probably concentrate on issues relating to the actions of the two drivers before the accident rather than the prior relationships between the parties, their financial situations, or their family difficulties. While this process may not be deliberate or conscious, it is as much a cognitive process as the conscious use of an algorithm to solve a problem.[102]

Schema theory differs in important respects from the Dreyfuses' model of holistic similarity recognition. While perception plays an important role in both theories, for the Dreyfuses, it is the basis for all expert decision making. In their model, experts recognize patterns based on their perceptions of the surface characteristics of a particular situation and their abilities to relate those characteristics to the specific contexts of prior experiences.[103] Under schema theory, however, the expert practitioner unconsciously delves beneath these perceived characteristics. Her mental representations are organized around con-

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STRUCTION 335, 339 (1993).

[102] The Dreyfuses are incorrect when they assert that the process is mindless. A central basis for the Dreyfuses' contention that cognition generally plays no part in expert performance is that artificial intelligence ("AI") researchers have been unable to develop rules that replicate the conceptual process used by experts in decision making. Hubert L. Dreyfus & Stuart E. Dreyfus, *Making a Mind v. Modeling the Brain: Artificial Intelligence Back at a Branchpoint,* DAEDALUS, Winter 1988, at 15. The fact that AI research has not yet reproduced the expert reasoning process does not mean, however, that such replication is impossible. Nor does it address the insight of schema theory that the use of representational frameworks works unconsciously in expert decision making. *See generally* Thornton, *supra* note 76, at 290; Patel et al., *supra* note 80, at 424.

[103] DREYFUS & DREYFUS, *supra* note 67, at 28 ("When we speak of intuition or know-how, we are referring to the understanding that effortlessly occurs upon seeing similarities with previous experiences.").

cepts from her domain knowledge, which she uses to discover all the relevant facts she encounters in the situation. Although the Dreyfuses' theory rejects the idea that internal representations guide attention, schema theorists assert that unconscious, internal frameworks are key features of expert practice. Such practice has a cognitive as well as a perceptual basis, requiring the filtering out of irrelevant information and the focusing in on relevant facts.[104]

The distinction between schema theory and the Dreyfuses' model of "holistic similarity recognition" is not merely semantic. For the Dreyfuses, effective pedagogy in a field requires the use of protocols and techniques to assist students in recognizing the surface patterns of problems. Schema theory, on the other hand, suggests that the design of effective pedagogies for experiential courses should focus on helping students acquire representational frameworks for decision making in practice.[105] With these schemas, students can delve, both consciously and unconsciously, beneath the surface of problems to deeply analyze them. To acquire such schemas, students must have a solid doctrinal foundation for the problems they are handling, they must be given sufficient opportunities to engage in practice in similar cases, and instructors must provide them with effective feedback so that they can begin to develop their own schemas.[106] This process requires more than repeat performances of different protocols and the learning of common techniques and procedures. Rather, it involves the development of representational frameworks for applying doctrine in practice.

2. *Cognitive Flexibility*

Cognitive scientists also assert that the application of knowledge by an expert in handling ill-structured problems requires the simultaneous consideration of multiple concepts that are individually complex, a process called cognitive flexibility.[107] An ill-structured problem is characterized by some of the following conditions:

> (1) [t]he place to begin to define the problem is usually not clear; (2) there often are many contingencies to take into account; (3) how to weigh and assess the various interdependent variables is uncertain; (4) one has to continuously reframe and reconsider what one is

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104 *See* Gobet & Chassy, *supra* note 66, at 135; Patel et al., *supra* note 101, at 339.

105 Gobet & Chassy, *supra* note 66, at 136-37 (recommending that instructional methods be developed to foster the acquisition of schemas).

106 Stefan H. Krieger & Serge A. Martinez, *A Tale of Election Day 2008: Teaching Storytelling Through Repeated Experiences*, 16 J. LEGAL WRITING INST. 117 (2010).

107 Vimla L. Patel, Nicole A. Yoskowitz, José F. Arocha & Edward H. Shortliffe, *Cognitive and Learning Sciences in Biomedical and Health Instructional Design: A Review with Lessons for Biomedical Informatics Education*, 42 J. BIOMEDICAL INFORMATICS 176, 180 (2009).

> doing in light of new information and shifting calculations; and (5) the goals to be sought are frequently subject to debate and refinement and are not usually susceptible to clear measurement.[108]

Legal problems are often ill-structured because they arise under uncertain conditions with regard to the client's interests, the other party's intentions, the controlling legal doctrine, and the procedural constraints of the legal system. For example, in an initial interview of a client about a landlord/tenant problem, lawyers may encounter problems with different legal doctrines—tort, contract, and property theories; evidentiary issues; diverse procedural obstacles; the relationship between the parties; and tricky ethical quandaries. Expert attorneys must consider all these issues at the same time and often cannot easily compartmentalize them. In such situations, "there is not likely to be a set, technical approach to follow to reach a solution nor necessarily a single determinant answer to resolve the matter."[109]

Given the uncertain nature of ill-structured problems, cognitive flexibility theorists contend experts do not passively relate situations to prior experiences or retrieve well-developed schemas. Rather, when faced with a problem, they construct meaning about the situation using the given information in conjunction with their prior knowledge and schemas.[110] The prior knowledge that is brought to bear is itself reconstructed on a case-by-case basis rather than merely retrieved from memory. This process requires the flexible use of preexisting knowledge, the ability to use multiple schemas, and the skill to view a problem from different conceptual perspectives.[111]

Therefore, in training novices to handle ill-structured problems, oversimplification of concepts is not helpful and may actually impede acquiring expertise.[112] Following the Dreyfuses, one might think that instructors should adopt methods that simplify concepts, compartmentalize knowledge, and teach rules and strategies for performing particular skills.[113] In fact, that is the recommendation of the Carnegie Report.[114] But cognitive flexibility theory shows that reductivism is

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[108] Mark Neal Aaronson, *We Ask You to Consider: Learning About Practical Judgment in Lawyering*, 4 CLIN. L. REV. 247, 257 (1998).

[109] *See id.*

[110] Rand J. Spiro, Paul J. Feltovich, Michael J. Jacobson & Richard L. Coulson, *Cognitive Flexibility, Constructivism, and Hypertext: Random Access Instruction for Advanced Knowledge Acquisition in Ill-Structured Domains*, *in* CONSTRUCTIVISM AND THE TECHNOLOGY OF INSTRUCTION: A CONVERSATION 64 (Thomas M. Duffy & David H. Jonassen, eds. 1992).

[111] *Id.*

[112] *Id.* at 63. *See also* Patel et al., *supra* note 107, at 180.

[113] *See* DREYFUS & DREYFUS, *supra* note 67, at 21-22.

[114] Drawing from the Dreyfuses' theory, the Carnegie Report asserts:

> The prime learning task of the novice in the law is to achieve a basic acquaintance

only helpful in training novices in well-structured domains in which the solution to problems is simple and straightforward.[115]

Oversimplifying issues does not help learners construct meaning in ill-structured domains because it can result in different types of "reductive biases."[116] One such bias is the generally incorrect assumption that parts of a complex process retain their characteristics when integrated into the entire process.[117] In the lawyering process, this bias might result in minimizing the significance of obtaining evidence from third parties or adversaries. Novice attorneys, who are trained in the technique of client-centered interviewing, might be prone to overemphasize client-reported information in the fact investigation process. Another bias resulting from overcompartmentalizing instruction is the assumption that highly-interrelated elements of a process are independent of each other.[118] For example, a law student instructed about the necessity of using a leading form of questioning in cross examination, in isolation from an understanding of the overall theories of the case, might be prone to use that form even when it is detrimental to the proceeding.[119] These errors of oversimplification, cognitive scientists warn, "can compound each other, building larger scale networks of durable and consequential misconception."[120] Quite simply, they give students an artificial sense of the expert practice of law and can have enduring negative effects.[121]

Rather than compartmentalizing concepts, cognitive flexibility

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with the common techniques of the lawyer's craft. The novice should not be asked to exercise judgment or interpret a situation as a whole. Instead, the novice must learn to recognize certain well-defined elements, regardless of what else is happening.

See SULLIVAN ET AL., *supra* note 9, at 117.

115 Patel et al., *supra* note 107, at 180; Spiro et al., *supra* note 110, at 60-61 (comparing the fairly well-structured problems of basic physics with the application of those concepts in "messy" real-world engineering problems).

116 Spiro et al., *supra* note 110, at 62.

117 *See id.*

118 *Id.*

119 While we are raising questions about the use of these techniques, we do not advocate discarding instruction in lawyering methods, such as client-centered interviewing or cross-examination drills. Rather, we are asserting only that overemphasis on the use of these techniques, as suggested by the Carnegie Report, may be detrimental to the acquisition of cognitive flexibility by law students. These techniques do have some use in introducing students to certain discrete skills. For overall instruction in lawyering skills, however, it is more important to adopt methods by which students can acquire the cognitive flexibility that will enable them to handle ill-structured problems effectively.

120 Spiro et al., *supra* note 110, at 62.

121 As a medical educator observes:

believing that students should only memorize rules has a dark side and can cause deleterious consequences. When rules are available for everything, novices can spare the effort of imagining a different way to solve an [ill-structured] problem. Hence, they would tend to proceed to solve problems in a rather mindless way.

Peña, *supra* note 66, at 7.

theory focuses on the connection between different concepts and their interaction and variations across contexts.[122] The theory suggests that learners in ill-structured domains can acquire the durable ability to construct understanding in complex situations only by "revisiting the same material, at different times, in rearranged contexts, for different purposes, and from different conceptual perspectives."[123] In an arena like legal practice, any single explanation of a complex concept or case will miss important facets that would have greater or lesser significance in a different context.[124]

Accordingly, as researchers suggest for medical education, cases in law school experiential courses should cover a range of situations and problems that use different pieces of knowledge or the same knowledge in different ways. Also, emphasis should be put on the relations among case problems and between cases and concepts. The focus on these relations reveals how knowledge can be reconstructed for novel situations, highlighted by examining the same cases from multiple perspectives and with different goals.[125]

3. Adaptive Expertise

Finally, in examining the nature of expertise, cognitive scientists posit that experts possess "adaptive expertise." Adaptive expertise entails the ability to use standard strategies to efficiently solve problems in routine situations, and the ability to develop innovative strategies to solve problems in novel situations.[126] Without efficient use of schemas, a practitioner's attention is overwhelmed with details. Without some innovation, however, one cannot handle the new problems that often arise in ill-structured domains.[127] The most effective experts have the metacognition to distinguish between these two types of situations and to judge when to be efficient and when to be innovative.[128]

Research has indicated that this metacognitive ability reflects a deep, theory-based understanding of the domain.[129] Drawing from that understanding, adaptive experts are able to distinguish semi-automatically between those situations which require only the use of stan-

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122 Patel et al., *supra* note 107, at 180.

123 Spiro et al., *supra* note 110, at 65.

124 *See id.* at 65.

125 Patel et al., *supra* note 107, at 180.

126 *Id.* at 188.

127 Valerie M. Crawford & Susan Brophy, *Adaptive Expertise: Theory, Methods, Findings, and Emerging Issues*, http://ctl.sri.com/publications/downloads/AESymposiumReportOct06.pdf at 12 (2006).

128 *Id.* at 13.

129 Susan M. Barnett & Barbara Koslowski, *Adaptive Expertise: Effects of Experience and the Level of the Theoretical Understanding It Generates*, 8 THINKING & REASONING 237, 252 (2002).

dard schemas and those which demand more deliberate and innovative reasoning. They are also able to recognize situations in which their knowledge is limited, requiring consultation with those who have more expertise in the domain. Similarly, this deep understanding helps experts identify those problems that require collaboration with other practitioners, whether within or outside of their domain.

To help students acquire adaptive expertise, more is required in the instructional process than the Carnegie Report's recommendation that novices "achieve a basic acquaintance with the common techniques of the lawyer's craft."[130] To foster adaptive expertise, researchers recommend that novices be exposed to a variety of problems with differing complexity but sharing a similar theoretical base. With appropriate feedback during this process, learners can begin to distinguish between routine problems and those that require more deliberate consideration, consultation with an expert, or collaboration with others.[131] In the law school context, this recommendation suggests that clinical and other experiential courses should be designed to provide students with different experiences in cases of varying complexity in a particular subject matter area. These experiences may enable novices to achieve an understanding that not all cases are major federal actions, nor are they simply run-of-the-mill proceedings. Some tasks require close consultation with supervisors, while others can be handled independently. And in some situations, nonlawyers and experts in other fields might be helpful in addressing the client's problem.

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[130] SULLIVAN ET AL., *supra* note 9, at 117. The Carnegie Report does recommend that students become "metacognitive" about their learning, but, in the context of the entire study, it is unclear what the authors mean by the use of that term. The Report asserts, "[T]he essential goal of professional schools must be to form practitioners who are aware of what it takes to be competent in their chosen domain and to equip them with the reflective capacity and motivation to pursue genuine expertise. They must become 'metacognitive' about their own learning." *Id.* at 173. Without any further explanation about the nature of the metacognition process, this recommendation is opaque and unhelpful. It suggests simply and generally that students should become reflective about their learning but fails to flesh out a specific description of what this reflective capacity entails.

[131] *See* Crawford & Brophy, *supra* note 127, at 17–18. As these authors observe, "Much learning in the professions occurs by tacit acquisition. It is important to consider how to engineer learning experiences in the context of practice to encourage people to become adaptive through their learning." *Id.* at 17. Accordingly, adaptive expertise is not necessarily taught by pedantic lessons in the virtue of this ability, but rather through experiences that help novices tacitly acquire it.

III. Outcome Assessment in Law School Experiential Courses

A. Carnegie Report Recommendations on Assessing Lawyering Skills

To assess student learning in lawyering skills courses, the Carnegie Report urges the use of methods that evaluate the learner's development of expertise.[132] While we do not disagree with this approach to outcome assessment, our differences with Carnegie arise from its conception of expertise. Since cognitive processes play only a secondary role in expert practice, when viewed through the Carnegie-Dreyfus lens, performance becomes the primary focus of outcome assessment in experiential courses. Alternatively, following the research described in the prior section, we suggest that cognitive competence is an essential element of expertise. In our view, then, assessment must consider not only a learner's performance, but also the cognitive processes revealed during that performance.

Following Dreyfus, Carnegie envisions law schools where students "acquire[ ] mature skill by moving from a distanced manipulation of clearly delineated elements of a situation according to formal rules toward involved behavior based on an accumulation of concrete experience."[133] Focusing on the students' development of "involved behavior," the Report asserts that, "[s]ound assessment [of lawyering skills] must include an evaluation of students actually performing."[134]

When outcomes are framed in terms of a student's ability to utilize particular protocols or techniques, assessment is likely to focus on how well the student adhered to the protocol or applied the technique: For example, did the student start with open questions and gradually narrow her questioning? Did she use the T-funnel technique designed for this particular situation? Did the student effectively follow the PrOACT protocol by identifying problems, setting objectives, developing alternatives, evaluating consequences, and structuring tradeoffs?

One example of this type of performance-focused assessment comes from *Best Practices,* which describes a rubric for assessing stu-

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[132] Sullivan et al., *supra* note 9, at 171-73. The authors of the Report obviously do not claim that law schools can prepare students in three years to become expert practitioners, but they do suggest that, by graduation, students should have begun to acquire some of the attributes of expertise. We concur with this proposition. Most recent cognitive science studies show that it takes people at least ten years of intense involvement with a skill or profession to acquire expertise. Ericsson, *Deliberate Practice, supra* note 83, at S72; K. Anders Ericsson, Ralf T. Krampe & Clemens Tesch-Römer, *The Role of Deliberate Practice in the Acquisition of Expert Performance*, 100 Psychol. Rev. 363, 366 (1993).

[133] Sullivan et al., *supra* note 9, at 172.

[134] *Id. at* 174.

dents' progress toward expertise in lawyer-client communication skills.[135] In this model, client interviewing has been broken down into discrete segments, and evaluators use eight questions to measure student proficiency in lawyer-client communication:

1. *Were the greeting and introduction appropriate?*
2. *Did the lawyer listen to the client?*
3. *Did the lawyer use a helpful approach to questioning?*
4. *Did the lawyer accurately summarize the client's situation?*
5. *Did the client understand what the lawyer was saying?*
6. *Did the client feel comfortable with the lawyer?*
7. *Would the client feel comfortable having the lawyer deal with her situation?*
8. *Would the client come back to this lawyer if she had a new legal problem?*[136]

For each of these eight elements, proficiency can be assessed on a highly specific scale and given a score between 1 and 5. For example, the sixth criterion, client comfort with the lawyer, is scaled as follows:

> *1 point: Lawyer was bored, uninterested, rude, unpleasant, cold or obviously insincere.*
>
> *2 points: Lawyer was mechanical, distracted, nervous, insincere, or used inappropriate remarks.*
>
> *3 points: Lawyer was courteous to the client and encouraged the client to confide in her.*
>
> *4 points: Lawyer was generally attentive to and interested in the client. The client felt confident to confide in her.*
>
> *5 points: Lawyer showed a genuine and sincere interest in the client. There was a sense of connection between the client and the lawyer.*[137]

Using this set of clear and observable criteria, a student interview can be given a score from 8 to 40 to indicate the student's level of proficiency in professional expertise in communication with clients. This assessment scale is based entirely on elements of student performance that do not require any evaluation of the student's reasoning.

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135 STUCKEY ET AL., *supra* note 9, at 246-7.

136 *Id.*

137 *Id.* at 247.

The appeal to teachers of a checklist approach to assessment is not insignificant. This kind of method is relatively straightforward and unambiguous in its application, with clear goals and clear criteria for evaluation.[138] Problematically, however, by focusing on whether the student adequately follows a checklist of performance elements, this type of assessment diminishes the importance of the student's reasoning process as she engages with the lawyering problem.

Pointing to assessment methods in medical education, Carnegie seems to concur with this checklist approach. The Report notes approvingly that in the early years of medical school, students are evaluated on their ability to take medical histories and perform physical examinations on actors playing the role of "standardized patients." Later, they are observed by supervisors in their interactions with actual patients, and still later, they are assessed in their residencies on a wide range of other "technical and interpersonal skills."[139] Carnegie recommends the use of a similar approach of ongoing performance assessment in law school skills programs.[140]

Besides its reference to assessment in medical school, the Report cites no supporting evidence of a correlation between performance assessments and accurate evaluation of developing expertise in lawyering skills. Nor does it cite to any empirical evidence supporting performance-based assessment in medical training. Relying on the Dreyfus model, the authors of the Report simply argue that since expertise is exhibited by particular types of behavior, performance should be the focus of the assessment of lawyering skills.

A review of the empirical research on this subject raises serious doubt about Carnegie's unsupported claims regarding the benefits of performance assessment of students' learning of lawyering skills. While Carnegie is correct that performance assessment has become quite the rage in medical education, little empirical research exists on whether such methods are valid measures of clinical competence.[141] Indeed, one major study in the medical field suggests that in assessing clinical ability, cognitive competence may be at least as important as, if not more important than, performance.[142]

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138 Students are also likely to embrace performance-based assessment. They will be assessed favorably if they simply select and apply the proper tool from their toolkit of lawyering techniques.

139 SULLIVAN ET AL., *supra* note 9, at 175.

140 *Id.*

141 Geoff Norman, *So What Does Guessing the Right Answer Out of Four Have to Do with Competence Anyway?*, 77 BAR EXAMINER, Nov. 2008, at 18.

142 Robyn Tamblyn, *Physician Scores on a National Clinical Skills Examination as Predictors of Complaints to Medical Regulatory Authorities*, 298 J. AM. MED. ASS'N 993 (2007). Interestingly, in the Carnegie Foundation's recently published study of medical education, the authors (a different set than those who studied legal education) acknowledge

In this study, researchers examined the relationship between patient complaints to medical regulatory authorities about the nature of their physician's care and the physician's previous performance on the Canadian medical licensing exam. The research sample included all 3,424 physicians who took the licensing exam between 1993 and 1996 and were licensed to practice in Ontario and/or Quebec. Researchers then compiled data on all complaints filed with provincial regulatory authorities between 1993 and 2005 which were investigated and found to be valid. For each physician, they determined complaint rates, derived by dividing the number of valid complaints by years of practice time, for two different types of complaints, those concerning communication issues and those concerning quality of care. Finally, the researchers compared the two different complaint rates with each physician's performance on the various components of the licensing exam.[143]

One part of the licensing exam assessed medical knowledge using approximately 450 multiple-choice questions about medicine, surgery, obstetrics-gynecology, pediatrics, psychiatry, and preventive medicine.[144] A second component assessed clinical decision-making skills using write-in or menu-selection response formats on 36 to 40 clinical problems concerning critical aspects of diagnosis or management. Grades on these problems were not based on a single correct answer but on the relative quality of the responses regarding critical decisions in situations in which errors could affect the patient outcome.[145] Essentially, this part tested the candidate's cognitive ability to solve problems in practice. The final part was a performance-based standardized patient examination which asked candidates to interact with simulated patients for five to ten minutes. Trained physician-observers assessed candidates in a number of areas, including data collection (e.g. medical history and physical examination) and communication skills (e.g., whether the test-taker used condescending, offensive, or judgmental behaviors or ignored patient responses). In this final section, problem-solving skills were assessed by post-encounter questions on diagnosis, investigation, interpretation of test results, and management. Physician-examiners used an answer key to score

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that, "[m]uch work remains to be done to establish the reliability and validity . . . of performance assessment" of complex clinical skills. MOLLY COOKE, DAVID M. IRBY & BRIDGET C. O'BRIEN, EDUCATING PHYSICIANS: A CALL FOR REFORM OF MEDICAL SCHOOL AND RESIDENCY 107 (2010). The Carnegie Report on educating lawyers contains none of this cautionary language about performance assessment.

143 Robyn Tamblyn, *supra* note 142, at 994-95.

144 *Id.* at 995.

145 *Id.*

these responses.[146]

After examining the data, researchers found that the best predictor of quality-of-care complaints was the licensing exam's clinical decision-making component, which focused on the cognitive ability of candidates to solve problems. The better the test-taker's score on that part of the exam, the lower the complaint rate for that physician. Although high scores on the communications component of the performance exam were not as good a predictor of low quality-of-care complaint rates, researchers also found a statistically significant inverse correlation between that measure and such rates.[147] Additionally, researchers found that scores on both the communication part of the performance exam and on the clinical decision-making exam served inversely, and at nearly the same level, as predictors of communication complaint rates.[148] Finally, researchers found a statistically significant inverse relationship between overall complaint rates and scores on the multiple-choice and clinical decision-making sections, as well as on the communication component of the performance exam.[149]

In sum, scores on the clinical decision-making component of the licensing exam were better inverse predictors of complaint rates than any other component of the exam. Clinical decision-making scores fared just as well as inverse predictors of overall complaints as the communications component of the exam. Those scores were better inverse predictors of quality-of-care complaints than any other component of the exam. Moreover, even in terms of complaints from actual patients about communication problems, the scores on the clinical decision-making exam were comparable to those on the communications exam as an inverse predictor of complaints. And surprisingly, even the score on the multiple-choice medical knowledge component of the exam was a statistically significant inverse predictor of the overall complaint rate.[150]

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[146] *Id.* By measuring problem-solving skills using an answer key, the licensing body was not assessing the cognitive processes used by the test-takers as much as their "correct" performance on a post-examination quiz.

[147] *Id.* at 999. Researchers found no statistically significant relationship between quality-of-care complaint rates and scores on the multiple-choice part of the exam or on the data acquisition and problem-solving components of the performance exam.

[148] *Id.* Researchers found no statistically significant relationship between communication complaint rates and scores on the multiple-choice part of the exam or on the data acquisition and problem-solving components of the performance exam.

[149] *Id.* The best inverse predictors of any complaint were scores on the clinical decision-making and communications exams. No statistically significant relationship was found between overall complaint rates and the data acquisition and problem-solving components of the licensing exam.

[150] Indeed, a major researcher in the area of medical education asserts that multiple-choice tests appear to consistently outperform performance tests in terms of measured validity. Norman, *supra* note 141, at 19-20.

Of course, there are limitations to the conclusions that can be drawn from this study. It is open to question whether or not the number of complaints to regulatory authorities reflects a practitioner's actual expertise. Moreover, the different experiences of the subjects after graduation were not considered in the analysis of the data. But even with these limitations, given the large sample size and the twelve-year period over which researchers tracked licensing exam scores and complaints, the study certainly provides stronger support for its conclusions than the Carnegie Report does for relying uncritically on analogies between legal education and standardized patient performance assessment in medical education.

Admittedly, we cannot be certain that research findings regarding the medical profession are transferable to the legal profession. Nevertheless, this major medical study raises serious questions about the focus of Carnegie and the Dreyfuses on performance as a primary measure of ability in practice. Contrary to the assumption implicit in the Carnegie Report's recommendations, performance assessment may not be the best measure of a student's long-term lawyering ability. Instead, scores on tests of clinical reasoning and cognitive processes appear to be better predictors of acquisition of expertise and ability in practice. At the very least, this research should call into question a headlong rush to adopt Carnegie's recommendations to use performance as the primary assessment tool for measuring lawyering skills.

B. Assessment of Cognitive Competence

If the Canadian study is correct that assessment of clinical reasoning ability is a significant factor in measuring a learner's acquisition of expertise, an issue arises as to the best methods for evaluating the development of such competence. As described in Part II, cognitive science research has demonstrated that expert reasoning has a number of attributes: the use of schemas, cognitive flexibility, and adaptive expertise. While it is easy to assess a test-taker's performance with a standardized patient, it is much more difficult to determine whether the reasoning of a test-taker demonstrates any of these attributes. Simply stated, it is impossible to peer into someone's head, as "thinking cannot be observed by other people."[151]

To address this problem, one of the experimental methods now employed by medical educators to assess cognitive competence is the use of the "think-aloud" interviewing methods employed in cognitive

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[151] K. Anders Ericsson, *Protocol Analysis*, *in* A COMPANION TO COGNITIVE SCIENCE 425 (William Bechtel & George Graham, eds., 1998).

science studies of the reasoning process.[152] The purpose of using this method is to replicate as closely as possible the actual cognitive process of the subjects. Under the think-aloud protocol, researchers ask subjects during the interview to verbalize their thoughts spontaneously as they emerge into their attention.[153] Even though use of this method does not provide a perfect match between subjects' thoughts and reports, researchers have found consistently strong evidence that this method results in a strong correlation between the two.[154]

In medical education studies of this method, interviewers provide medical residents with problem scenarios describing patient histories, known symptoms, and the proposed case management in each instance. The residents are asked to think aloud as they read these scenarios, to summarize the case history, and to evaluate the proposed case management. The interviews are recorded and transcribed. The researchers then review the transcripts to assess the reasoning used by the residents in practice.[155]

IV. Use of Think-Aloud Interviews with Law Students

Using the medical field's "think aloud" technique as inspiration, we have designed an experimental assessment method intended to identify the different kinds of cognitive processes used by students as they solve problems in practice. Specifically, we give students in a clinical program a hypothetical problem that is representative of work they have experienced in the program, and record them as we ask them to talk it through. Our hypothesis is that by prodding students to talk about a problem without a filter, we will understand, as much as we possibly can, what they are thinking "in practice."

A. Methodology for Think-Aloud Assessments

1. Creating Hypothetical Scenarios for Think-Aloud Assessments

The goal of our experiment is to give us insight into the development of specific cognitive processes used by our students in practice. Specifically, as a means of assessing their progress toward expert prac-

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152 Telephone Interview with Vimla Patel, Professor of Biomedical Informatics, School of Health Information Sciences, University of Texas Health Sciences Center, in Houston, TX (Mar. 28, 2010).

153 Researchers have also found that if subjects are asked to recall their reasoning process after a long delay, the completeness and accuracy of recall is impaired. Subjects are prone to infer their thoughts as opposed to correctly recalling them from memory. Ericsson, *supra* note 151, at 429, 430.

154 *Id.* at 430.

155 E-mail from Vimla Patel, Professor of Biomedical Informatics, School of Health Information Sciences, University of Texas Health Sciences Center, to Stefan Krieger, Professor of Law, Hofstra University (Mar. 31, 2010, 8:23 p.m. EDT) (on file with authors).

tice, we are trying to observe their schemas for representation of problems, their cognitive flexibility, and their development of adaptive expertise. With these objectives in mind, we designed our hypothetical scenarios with the following goals:

> *a. Lead students to access the schemas that they have created for addressing particular issues that commonly arise in representation.* We developed the hypotheticals within the context of a clinic-specific problem, to allow our students to draw on doctrinal knowledge and mental models that they should have developed through their clinical work.[156] To identify and evaluate the mental models that they had already constructed, we examined how they approached a reasonably familiar problem. Students in completely unfamiliar environments, we reasoned, were not likely to rely on schemas that had been developed through their clinic work.
>
> *b. Require the students to attend to multiple issues simultaneously*. We created hypotheticals with multiple, complex, and interrelated elements to assess our students' ability to handle several elements at the same time, balance them, and understand how their consideration of these elements changed when students perceived their interaction.
>
> *c. Present novel problems*. To test our students' adaptive expertise, which required observing their ability to recognize and respond to novel situations, we presented them with problems containing elements that did not fit neatly within the routine schemas that we expected them to have developed in the clinic. In addition, to test their ability to recognize the limits of their own expertise and the need to consult with those who had more expertise, we included elements that we considered too advanced for clinic students.

2. *Conducting the Think-Aloud Interviews*

We invited several clinic students to participate in the project, emphasizing that they would not be graded. We then asked a colleague—one with whom the students did not have a relationship—to conduct on-camera interviews with the students. We used an independent interviewer to prevent any undue influence from our own preexisting relationships with the students. We feared that the students might be intimidated by our presence or feel compelled to give responses we expected. We also wanted to avoid the possibility that we might influence the students' responses with our questions or reactions to their comments.

In the actual interviews, the interviewer simply gave a written hypothetical to the students and asked them to think aloud through their

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156 *See* Appendix.

responses as they reviewed the problem. The interviewer followed up as needed with open-ended questions to help the students express their thoughts, to make sure they continued to think aloud, and to encourage them to explore as fully as possible their reasoning processes as they were happening. The entire interview lasted approximately 15 minutes for each student. Subsequently, we viewed and transcribed each recorded interview to identify the cognitive processes used by students in responding to the problem.

3. Using the Interviews to Assess Student Reasoning in Practice

To assess the interviews, we considered the goals of the clinic in which the student was enrolled, then analyzed the transcript to identify how well the students had met the course goals for development of cognitive processes. In the next section, we will demonstrate how the assessment process worked for two students from a single clinic by describing the clinic's goals, presenting annotated transcripts of student interviews, and describing possibilities for practical application of the information developed from these interviews.

B. The Think-Aloud Interviews

1. The Hofstra Community and Economic Development Clinic

The Hofstra Community and Economic Development Clinic (the "CED" or the "Clinic") is a one semester, non-litigation clinic that mainly represents small community-based organizations and microbusinesses owned by aspiring entrepreneurs. While there is wide variety in the work of the Clinic, a core element is helping inchoate not-for-profit and for-profit organizations choose and create the most appropriate corporate form. During the semester, students have the opportunity to counsel several clients about the particular set of issues that arise at the early stages in the development of a small entity.

The CED has pedagogical goals, both general and domain-specific, that drive course design, teaching, and client selection. The CED is designed to cultivate in students the following cognitive processes:

a. *Schemas*: Students should develop mental models that serve as a framework for understanding and dealing with lawyering problems. In the CED, these schemas should include:

i. A schema for helping a client choose the form of a corporate entity, and then creating that entity;

ii. Because all of the Clinic's clients are groups or entities, a schema for asking and answering the question, "Who is the client?," and identifying and addressing other ethical issues relating to non-individual client representation;

iii. A schema for understanding the attorney-client relationship and the role of the attorney in representation, including applying ethical rules to representation; and

iv. A schema for identifying and understanding client goals and priorities.

b. Cognitive Flexibility: Students should be able to identify and keep track of several different factors simultaneously. In the CED, these factors frequently include:

i. Activities of the organization (especially as they relate to qualification as a New York not-for-profit corporation and/or a 501(c)(3) exempt organization);

ii. Involvement in lobbying and political campaigns;

iii. Sources of finance;

iv. Taxes;

v. Corporate governance and control;

vi. Liability; and

vii. Other client-specific goals.

c. Adaptive Expertise: Students should be able to distinguish between "routine" and novel situations, as well as to understand when a situation is beyond their ability to handle and requires consultation with those who have more expertise.

Obviously, this list is ambitious. In practice, students are unlikely to master all of these cognitive processes over the course of a four-month semester. The goal of the CED is to help students start to develop their ability to reason in practice through their work with clients.

2. *Think-Aloud Interviews*

In this section, we share the transcripts from two of our student interviews, coded for the students' reasoning processes.[157] Each interview was conducted at the end of the subject's semester in the CED.

[157] Videos can be viewed at: http://studentlegalreasoning.info.

David **Luscious Landscaping Scenario**[158]	**Commentary**
In terms of immigration status, I'd – We need to look further into that. Well they feel that they don't want to be in the position of asking for or providing immigration about their immigration – information about their immigration status. So I would obviously look—if they were my clients, I would represent their interests and do what's possible to limit the type of information that they may need to give while complying with our regulations as imposed by the law. I would do further research into seeing if that in fact creates a conflict by withholding their immigration status or not. If it's not a problem then I don't assume we need to go further into it but if there are some policy issues, then definitely. So that's where I would start – that's pretty much where I would start.	Cognitive Flexibility: David takes note of the immigration issue as a potential factor in client decision. However, this is the last time he mentions it in this exercise. Adaptive Expertise: David is aware that the immigration issue is beyond his expertise, and that he needs to conduct research to learn more.
I would certainly ask the clients – or prospective clients – what their immediate needs are and where these needs rank, whether they're interested in creating a business or in working to develop the community and stand up for unskilled Latino laborers or Latino laborers in general. . .	Schema: David has a framework for understanding the lawyer's role at this stage. He also shows that he has a model for identifying client goals and helping the clients prioritize among them.
And in doing so, I would – obviously I would use that information to decide whether I'd like to – I would suggest using – creating a not-for-profit corporation or a general corporation. They say they want to form a corporation but I don't necessarily know if they know the difference and the intricacies of corporations and not-for-profits or even creating LLCs while still limiting their liability but not having to pay different taxes. . .So I would, you know, create – I would make a long list of options for these clients, choice-of-entity decisions for them initially.	Schema: The framework that David is using for identifying client goals suggests that just because clients might say they want something doesn't mean that that is what will best meet their needs. He wants to dig a little deeper. Schema: David's model of the lawyer's role includes developing and presenting options to a client. Cognitive Flexibility: There are many options with lots of permutations that are interconnected. David is aware of this, even though at this point he does not expand on his thinking.
But I would also – I would like to, you know, list exactly where their needs stand which, you know. . .What are their primary needs versus what are their secondary.	Schema: David comes back to the importance of the lawyer knowing how important each client goal is relative to the others.

158 See Appendix.

I would. . .First of all, I'd like to know exactly who's involved. If, you know, it says they're representing a group of 5 men so – but they have ideas of representing all of Latino laborers so I would have to inform this person that I'm speaking to and following up with that I would be representing their corporation and not just them and that my representation extends to everybody that's involved with the corporation – all the directors and officers that represent the corporation and that my legal representation would be towards the corporation that they created, not just them. So I would find out what their needs are in terms of the corporation as a whole. And also other information as to who else I can speak to because I wouldn't be representing this one person, I'd be representing the corporation. Umm. . .I would – again, I would do some research into current organizations in the area to see if –	Schema: David has developed a schema that emphasizes the importance of understanding who the individuals are and their relationship to "the client." Adaptive Expertise: David recognizes that this is not an area that he has a framework for understanding, so he comes up with a plan to get more information and seek out guidance from others to help him explore this situation.
I mean, obviously I would check the name availability. They sound like they have a name – "Luscious Landscaping" – that they'd like to use so if that's not available, I'd have to inform them that that's not possible. But also I would, you know, I would see what other corporations are – or organizations are around in the community and are they succeeding in what their style and structure is.	Schema: David is demonstrating a model for the formative stages of any corporate entity in New York.
I would certainly call up the – I know certain regulations have changed in terms of the purposes that the Department of State is looking for in order to create not-for-profit corporations so I would look for some guidance by the Department of State as to if I were trying to create this type of organization, exactly how to word the type of purposes or exempt purposes that the not-for-profit corporation would be looking for in order to, you know, speed up the incorporation process.	Schema: David shows that he has a robust schema for nonprofit formation. Adaptive Expertise: David seems very locked into the nonprofit schema—he appears to be having difficulty identifying this as a case that does not comfortably fit within his existing schemas and that will require some innovation.
And I would also, you know, I would ask around, I would find out – ask my colleagues and ask other people in the clinic who are in the process of incorporating their clients and find out exactly how they've complied with the State's requirements and use all resources that the clinic has that I could find.	Adaptive Expertise: David realizes that this is not an area that he has enough expertise to handle alone, and that he will need some help from his colleagues. However, he is still thinking about procedural issues that are specific to the formation of nonprofit organizations. He seems to be having trouble accepting that this problem may not fit within his non-profit framework.
I would investigate further who else is involved in the project. If it's just this one person who I'm speaking to, I would like some other contact information for who else would be involved or who else would be a director of the corporation. It sounds like an interesting client. I'd like to help them.	Schemas: David has returned to his earlier concern about who is the client, who is the person he will be interacting with, etc. This gives a good picture of how robust this schema is with this student.

No, I would certainly – I'd like to go and do some of my own personal research on the Latino laborers and the Latino community in the area and determine some of the, you know, needs of those laborers. You know, determine myself and be able to bring some information to the table that might either be different from what my client may bring up or, you know, create conversation.	Adaptive Expertise: David realizes that this is a novel problem and that he will probably be able to represent the client better by understanding the community that they want to help.
I know that they are looking to reduce their tax liability, so I would certainly suggest that if they were interested in creating a corporation that they might create an LLC so that they're not doubly taxed like a corporation.	Cognitive Flexibility: He has identified reducing taxes as a factor in helping the clients with their goals. He does not, however, resolve—or even identify—the tension between this and other client goals.
Now if they're a not-for-profit corporation and they're interested in, you know, helping the Latino community versus making a profit, then, you know, I would have to address all the IRS regulations of taking recognition of tax exempt status and such.	Cognitive Flexibility: David addresses the for-profit/not-for-profit dichotomy and the tension inherent in the client's stated goals. He does not seem to make much progress toward understanding the tension or how it impacts his client's goals.
I don't know if I would necessarily go along the lines of, you know, if I would go with a not-for-profit corporation. It does seem like this is a business venture for them and one of the side points is that they, you know, in turn would like to help the Latino community. But if it is in fact a business venture, then I think we're focusing on corporations versus LLCs or C-Corps and different entities – profit-making entities. So, but in reducing tax liability then obviously the LLC would be more favorable than creating a C-Corp. Let's see if I missed any –	Cognitive Flexibility: David is struggling with the tension between the group's charitable aims and its business aims. He never resolves this issue and ignores other elements, such as outside sources of funding. Schema: David's use of "I" indicates that he has a framework for his role in the decision-making process that puts him at the forefront. Adaptive Expertise: David has escaped from his purely nonprofit schema. Now, however, he is locked into an either-or scenario: a nonprofit or a for-profit. He does not seem to think that this situation requires more innovation, such as exploring the idea of two side-by-side organizations, a joint venture, no organization at all, or other possible innovative solutions.

Mary **Rivertown Redevelopment**[159]	
Okay – So I see that it's not a good neighborhood and they want to do economic revitalization so I'm thinking maybe non-profit.	Schema: Mary has developed a representational framework for nonprofit organizations, and she is seeing how well her client fits that schema.
Training – So I'm thinking we're going to have to get consent from the Department of Education.	Schema: This is a routine step in incorporation of New York nonprofit organizations—Mary has a schema for how this process goes.
Okay, so then. . .since the 3 of them want to work together, I would talk to them about the different types of corporations that they want to set up. If they want to, they could do, like, a partnership but then they would have personal liabilities. . .So then, otherwise, they could do a corporation or a limited liability company – it depends how much they have for start-up costs – which it seems like they do have their own funds so they might want to do that.	Cognitive Flexibility: Mary sees that there is some tension here: partnerships would entail personal liability but are cheap; LLCs limit liability but are expensive to set up. After some mental calculus, she realizes that they probably have funds to do the LLC and that it would probably be an appealing option. Adaptive Expertise: Mary does not seem to consider that there might be other options than the very few she lays out here.

[159] See Appendix.

And then I would also think about doing a non-profit – especially because they want donations and government grants. So a 501(c)(3). So then, how to proceed for that. Well, first they'd have to incorporate under New York and make a certificate of incorporation and then send it to the Department of State and say that they want to use – they're going to be building up the town – so they'd have to meet non-profit goals.	Schema: Mary has developed a model for how to form an organization in New York. She also shows that she has created a mental model of the nonprofit that includes organizations looking for grants and donations.
And I think that the grocery – well, the grocery store would make a profit, so. . . make a profit. . .so then, I think they would still be fine – maybe if they added something to help the people? Well, that's just the initial phase, also.	Cognitive Flexibility: She identifies and is trying to deal with the tension between some of their stated goals—in this case, the tension between making a profit and having charitable purposes.
So then, umm, maybe they'd want to do two different corporations then? Maybe one to – for the first part of the stuff they wanted to do like provide employment to local youth and decrease crimes and then maybe they'd want to do a separate corporation that would just run the grocery store because it can make a profit. And then they could work together?	Adaptive Expertise: Mary has concluded that this situation does not fit well within the schemas she has developed. She stops trying to fit the client into the non-profit or the for-profit schemas and instead begins to innovate. Her solution of multiple organizations working in tandem is creative and consistent with client goals.
And so, for the first one, I would tell them to do a non-profit 501(c)(3) and that would decrease crime and increase local incomes and provide training for the local work force. So then they could think of a name and reserve that or – and then send in the certificate of incorporation and apply – fill out a [IRS Form] 1023 to get 501(c)(3) status so they can get donations and investments in government grants.	Schema: "I would tell them" suggests a schema relating to the lawyer's role in representation that gives importance to what the lawyer, rather than the client, wants. It is not clear from this exercise whether Mary is wedded to this particular representation schema.
And then maybe another corporation so that they could set up the grocery store. And so that way they could make a profit with that and help the town in that way also. Umm, I think that's it.	Adaptive Expertise: Mary returns to her innovation of multiple organizations working together to achieve the client's stated goals of helping the community by succeeding.

3. *Using Think-aloud Interviews for Student Feedback and Course Design*

The think-aloud interview, like other types of assessment, "offers two insights: one into the students, and one into the instruction."[160] Neither of these insights is an end in itself; rather they are means to the end of helping students achieve competence in practice. Insights about students can be used to give meaningful feedback. Insights into the effectiveness of instruction can inform course design. In this section, we describe how think-aloud interviews can be used to guide student feedback and assist in course design in ways that help students develop their reasoning abilities and make progress toward compe-

160 Michael Hunter Schwartz, *Teaching Law by Design: How Learning Theory and Instructional Design Can Inform and Reform Law Teaching,* 38 SAN DIEGO L. REV. 347, 404 (2001).

tency in skills.

a. Student Feedback

Think-aloud interviews can help instructors monitor student learning in order to provide useful feedback to students about their development of reasoning processes. By watching the videos with students and relating them to the work that students are doing in the course, the instructor can help students develop their cognitive frameworks. The purpose of these discussions should not be to tell students "you did this right" or "you did that wrong," but rather to help them identify and reflect on their own reasoning processes.

One element of a post-interview discussion with David, for example, might focus on his continued efforts to make the client's needs fit neatly into the schema he had developed for forming and representing nonprofit corporations. Although much of David's work in the Clinic was with nonprofit organizations, the clients in the Luscious Landscaping hypothetical are not likely to benefit from such a structure. However, rather than address whether David's was the "correct" approach, a discussion of his reasoning process would focus on understanding why David was reluctant to abandon his preconceived notions, and ways that he might become more aware of his use of these notions in the future.

A post-interview discussion with Mary would include discussion of her suggestion that her clients might be served best by creating multiple entities. Like David's, Mary's Clinic work largely consisted of representing small nonprofits, and none of her clients required multiple entities to achieve their goals, so the Rivertown Redevelopment & Revitalization scenario was in some respects a novel situation for which she had not developed a schema. Discussion of Mary's reasoning processes, however, would not focus on whether she came up with the "right" answer, but would address aspects of adaptive expertise, such as what she was thinking as she identified the novelty of the situation, how she came up with her proposed solution on the fly, and what consideration she gave to consulting someone with greater expertise. Such a discussion would help Mary and her instructor better understand the cognitive processes involved in her representation of clients.

b. Course Design

Think-aloud interviews can also be used to assess the ability of course design to meet goals for student learning outcomes. We believe that development of cognitive processes is largely a function of course design. Students unconsciously develop their own schemas and cogni-

tive strategies in response to their opportunities to practice with expert feedback.[161]

Contrary to Carnegie's suggestion, there is no standard "toolkit" of protocols and procedures possessed by all experts that can simply be taught to novices. Rather, through their experiences in practice and the effective feedback they receive, novices construct their own schemas for solving problems. The goal of course design should be to create the environment and feedback mechanisms to nurture the construction of these schemas. The assessment of think-aloud interviews can help instructors identify areas in which they have assisted students in developing cognitive frameworks and those in which they have not been effective.

The interviews with Mary and David suggest that the Clinic could be more effective in helping students develop cognitive flexibility. David and Mary each seemed to struggle with considering and balancing multiple factors. To help them develop a framework for cognitive flexibility, the Clinic might be redesigned to provide more opportunities for students to practice in situations that require keeping track of, and evaluating, multiple complex factors simultaneously. This change might be incorporated into in-class exercises and simulations. In addition, as an aid to developing cognitive flexibility, the Clinic might select more clients with problems that require students to understand the interactions of multiple factors and contingencies.

V. Assessment of Competency and the ABA's Proposed Standards

The ABA's Proposed Standards would require law schools to regularly and continuously assess student competency in learning outcomes.[162] We support such a requirement. As we discussed in the previous section, assessment can be a valuable tool for guiding student attainment of competency when it is used to give feedback to students or to shape course design. Assessment is only useful for guiding students to competency, however, if it accurately measures their abilities. There is a marked difference in the nature—and value—of what can be learned about competency in skills between assessment of performance and evaluation of reasoning in practice.

For example, in experiential legal education, a typical subject for assessment is the initial interview with a client, in which the lawyer meets the client for the first time to begin the representation. An assessment based on performance would evaluate elements such as the

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[161] *See* Krieger & Martinez, *supra* note 106, at 127-34.

[162] *Draft Report*, *supra* note 13, at Standard 306.

student's greeting of the client, whether the student made the client feel comfortable, how effectively the student applied the T-funnel technique of asking open-ended questions and then narrowing them down, how the interview was organized, the appropriateness of the "small talk" phase of the meeting, the cultural awareness and sensitivity of the student, the discovery of any important deadlines, the degree to which client and lawyer know what happens next, and setting the time for the next meeting.[163]

In contrast, an assessment of the same interview focused on the student's reasoning would look at very different elements, such as: What were the student's goals in the interview? Why did the student ask a particular question at a particular time? What was the student thinking when the client said, "I just want justice"? How did the student attend to multiple, competing, interdependent factors such as the client's goals, the relevant law, and the interests and resources of the other party in the case? What legal theories was the student considering while talking to the client? How did the student conceive of her role in the attorney-client relationship that was developing?

From the performance-based evaluation, we can learn a great deal about the student's ability to conduct a coherent interview or to behave appropriately with a client. Indeed, skills such as these are not insignificant elements of practice. For example, the lawyer who is not able to respond to cultural differences in a client interview is bound to have problems with clients. The lawyer who cannot interview a client in an organized manner will inevitably miss important information. We have no problem with teaching students to use techniques such as the T-funnel interview. In fact, we both teach the T-funnel to our students.

Nevertheless, an evaluation of a student's ability to conduct a T-funnel interview is of limited value in assessing whether the student is progressing toward expertise, and it should not be used as the sole or primary measure of competency in interviewing. The fact that a student follows perfect T-funnel protocol does not indicate that she has acquired the underlying schemas to understand the legal claims of the client, that she has started to consider the multiple variables at play in the case, or that she has any insights into novel issues that are raised. Performance-based assessments capture only the surface elements of practice, rather than the deeper reasoning processes that are central to expert practice.

From an assessment of student reasoning, we can understand the student's thinking as she works with the lawyering problem. By focus-

163 *See supra* notes 134–40 and accompanying text.

ing on the reasoning process, instructors can see whether the student is developing and applying schemas, demonstrating cognitive flexibility, or exhibiting the ability to identify novel situations. These are more significant elements of competency in practice than simple performance skills. Therefore, to assess competency in practical skills, law schools must implement assessment methods that target students' ability to reason in practice, not just their ability to perform.

We fear, however, that the ABA and schools moving toward a focus on learning outcomes will rely too heavily on performance-based assessment, given its relative ease of administration and the growing number of voices that support this form of assessment. As discussed previously, Carnegie suggests that assessment of competency in lawyering skills should focus on performance elements.[164] Moreover, the small amount of post-Carnegie scholarship that addresses assessment of student competency in practice has tended to frame student learning in terms of performance skill and to advocate the use of performance-based rubrics for assessment.[165] Although the amount of this scholarship is limited, a performance-based approach to assessment of competency in skills seems to be prevailing among legal scholars.

There is no doubt that performance-focused assessment methods such as the *Best Practices* communication skills checklist,[166] or the standardized patient method endorsed by Carnegie,[167] have appeal for educators. Checklist assessments can be easily administered and

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164 SULLIVAN ET AL., *supra* note 9, at 174.

165 *See, e.g.*, Ann Marie Cavazos, *The Journey Toward Excellence in Clinical Legal Education: Developing, Utilizing and Evaluating Methodologies for Determining and Assessing the Effectiveness of Student Learning Outcomes*, 40 SW. L. REV. 1, 37 (2010) (proposing a comprehensive written evaluation of student performance as well as an oral examination that primarily focuses on student performance in terms of communications skills, both scored with a predetermined rubric); Jerry R. Foxhoven, *Beyond Grading: Assessing Student Readiness to Practice Law*, 16 CLIN. L. REV. 335, 344-8 (2010) (describing assessment of student competency for practice based on assessment of student work product and student ability to perform various lawyering skills and practices); Lori A. Roberts, *Assessing Ourselves: Confirming Assumptions and Improving Student Learning by Efficiently and Fearlessly Assessing Student Learning Outcomes,* 3 DREXEL L. REV. 457, 479-83 (2010) (proposing assessment methods for appellate oral advocacy based exclusively on observation of student performance and application of a scoring rubric). *But see* Anthony Niedwiecki, *Teaching for Lifelong Learning: Improving the Metacognitive Skills of Law Students through More Effective Formative Assessment Techniques*, 40 CAP. U. L. REV. 149 (2012) (arguing that assessment should move away from a focus on the end product such as an oral argument or a negotiation toward a focus on the underlying reasoning process involved in the production as a means of improving students' ability to learn from their experiences).

166 STUCKEY ET AL., *supra* note 9, at 246–7. *See supra* notes 135–37 and accompanying text.

167 SULLIVAN ET AL., *supra* note 9, at 175. *See supra* notes 139–40 and accompanying text.

scored in a uniform, straightforward fashion that minimizes subjective judgment. By contrast, assessing student reasoning is likely to be more challenging and time-consuming than a checklist-type assessment.

In the think-aloud interviews, student thinking tends to be non-linear, looping back on itself repeatedly, and it is peppered with fillers and non-sequiturs. Questions are raised and then revisited again only much later, if at all. That, of course, is the nature of cognition. Student reasoning, like all human thinking, is messy. It resists easy decomposition into discrete component parts. Instead, it must be analyzed as a whole to identify various reasoning processes glimpsed piecemeal throughout each interview. This analysis requires a deep understanding of the domain, as well as a firm grasp of expert reasoning in practice in that domain.

The challenges of using assessment methods that focus on student reasoning, however, should not deter the ABA or law schools from using this type of method. Only by focusing on essential elements of expertise, such as reasoning in practice, can assessments reveal students' progress toward becoming experts themselves, and not merely their ability to imitate experts. Because they target important indicators of competency in practice, educators and the ABA alike should embrace assessments focused on student reasoning. They should reject the notion that skilled performance is the sole acceptable hallmark of competency in skills. Instead, they should understand that meaningful assessment of student learning in experiential education must focus on students' ability to reason in practice.

Conclusion

This is a seminal moment for experiential legal education. The chorus calling for reform is swelling, and the ABA stands on the verge of requiring law schools to prepare every student to be competent in skills when they graduate. These circumstances create an opportunity for law schools to give careful consideration to the sort of practical education that they will provide their students.

With the loud voice of the Carnegie Report describing expertise primarily in terms of performance and the ability to follow protocols or imitate expert techniques, it might be easy simply to follow Carnegie's recommendations for teaching and assessing students. Current scientific research, however, disputes Carnegie's view of expertise, instead offering important, empirically validated insights into how best to prepare law students to become expert practitioners.

Cognitive science research into the nature of expertise demonstrates that reasoning, not arational application of "toolkit" techniques to familiar situations, is the hallmark of expert practice.

Focusing on performance misses the mark. The implications for experiential education are significant. Course design must give students opportunities to develop the ability to reason in practice, and not simply to learn different expert techniques.

Moreover, this research demonstrates that providing useful feedback to students requires assessment methods that similarly focus on student reasoning. To properly assess student reasoning, evaluation must try to get into the heads of students in practice. We do not pretend that the think-aloud interview method we have proposed is the last word in assessment of student reasoning, but the information we have been able to extract from our interviews thus far suggests that this type of assessment can be valuable in evaluating students' acquisition of expertise. The results so far invite further research to refine the think-aloud methodology and develop additional methods for assessing reasoning.

Our law students are unlikely to be called upon to land a full plane on a river in mid-winter, but they will be called upon to serve clients in complex, challenging situations without precedent. While we all hope that our students will respond to difficult client problems with the same expertise that Captain Sullenberger showed, such a result is only possible if we accurately understand the nature of expertise and gear our teaching to developing that expertise in our students.

APPENDIX

Community & Economic Development Hypothetical Scenarios

1. Luscious Landscaping

You represent a group of five men who do landscaping work locally. You are helping them to start a business venture together. You just met with three of the five men at your office where one of them, Esteban, started off by telling you "We want to form a Corporation—what do we need to do?"

Although each of them has been successfully doing small-scale work for some time now, they want to work together to allow them to do larger-scale projects, develop a recognizable brand name, and reduce the cost of supplies by buying in bulk. Another reason for entering into this venture together is to try to fight the exploitation that each of them, as Latino men, has seen within the landscaping world. They will make sure that Latino laborers are paid decent wages, provide decent employment opportunities for unskilled laborers, and set a good example of the value of hard work for the increasingly disaffected youth of their Latino community.

They all want to run the business jointly, and they intend to use their own funds as an initial investment. In the future, they want to recruit more members (as long as they can assure that the quality of the work will not suffer) and also to look for outside financing. Because of the low profit margins in this market, they want to keep their initial costs down as much as possible while still reducing tax liability. In addition, they feel that they do not want to be in the position of asking for (or providing) information about immigration status. They have told you that they want to use the name "Luscious Landscaping," and they are looking to get this done immediately.

What will you do now?

2. Rivertown Redevelopment & Revitalization

You represent a group of three successful entrepreneurs who grew up in the community of Rivertown, one of the poorest and most run down areas of the county, with a high unemployment rate and terrible housing options. You are helping them to start a project to revitalize the business and economic climate of Rivertown. You just met with members of the group at your office.

Each of them has been successful with individual and joint business ventures around the area, and now they want to take their talents back to the community of Rivertown. Decades ago, Rivertown was a thriving working-class neighborhood, with a bustling and modern

Main Street that was home to locally-owned small businesses, employing hundreds of local residents and bringing lots of capital into the area. Now there's just an abandoned main street with a couple liquor stores and a barely surviving small hardware shop, surrounded by dilapidated housing and a lot of unemployed residents.

The group wants to create a project that will improve the economic climate in Rivertown and attract more new businesses. The ultimate goal is to provide employment for local residents, increase local incomes, set a positive example for local youth, decrease crime, improve the area's political power, and help restore Rivertown to its glory days. To begin, they envision doing things like providing training for the local workforce, developing a unified façade for the storefronts, installing streetlights, creating a pedestrian zone with sidewalk cafes, and improving security.

As part of the initial phase of this initiative, the group wants to lease one of the empty storefronts to open a grocery store that will sell healthy and affordable food. Currently, Rivertown has no grocery stores, just a few delis and a bunch of fast food chains. They believe that a successful grocery will show other retailers that Rivertown is a good place to do business and will help speed the project along.

They all want to control the project jointly. They intend to use their own funds as an initial investment, but they think they will need donations, outside investors, and/or government grants to make their vision a reality. They have big dreams for the place they came from, but no experience in this area, so they came to you for counsel on how to proceed.

What will you do now?