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PRESERVING THE SOCIAL CONTRACT: TRANSLATING ACADEMIC EDUCATION INTO PROFESSIONAL PRACTICE THROUGH CONTEMPORARY COGNITIVE THEORIES

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Why do lawyers and doctors currently enjoy the privilege of professional self-regulation?[1] Lawyers and doctors possess an enormous

[1] Under the Social Contract, the general will has afforded lawyers and doctors the privilege of professional self-regulation in exchange for their commitment to serve the public interest. The public good is served when members of these professions possess at least minimum competency skills and ethical behaviors which in turn preserve public trust. A growing sense of public mistrust begins to erode the autonomy and status of lawyers and doctors to self-regulate. Preserving self-regulation requires the integration of practical experience along with traditional theoretical pedagogy to ensure minimum professional competency skills and ethical behaviors are learned by every member. How can academic institutions and accreditation organizations tell whether learning has occurred? Understanding how traditional theoretical pedagogy translates into professional practice becomes a

capacity to serve the public good. In exchange for their commitment to serve the public good, the general will affords these professions autonomy, esteem, and self-regulation.[2] Self-regulation embodies a noble commitment to establish standards of competency and ethical behaviors, implement a mechanism for peer review, deliver quality services, understand and promote the public interest, ensure adequate education and ongoing training of its members, discipline those members who violate its code, and create knowledge to advance the public interest.[3]

Why do lawyers and doctors enjoy a privilege of self regulation? More importantly, will they continue to enjoy a privilege of self-regulation? The answer is—it depends. Will scandal and public mistrust breed enough public anger to create a backlash of imposing regulations on law and medicine? To be sure, scandal and a growing sense of public mistrust paint the headlines from time to time.[4]

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central issue for assessing whether learning has occurred, and if so, how much learning has occurred as measured during performance of professional activities. This work examines five contemporary cognitive theories and their application to the legal practicum and medical residency including: Ecological Psychology, Situated Cognition and Communities of Practice, Distributed Cognition or the Historical-Cultural Approach, Activity Theory, and Talent Development Theory. The cognitive theories are examined in light of the core competency skills and ethical behaviors identified in the ABA's MacCrate Report for law and the ACGME's Outcome Project for medicine. A learning model proposed herein, *The TEACH Compass*™, is designed to improve our understanding of how pedagogy translates into performance within professional practice settings, serve as a set of tools to facilitate the learner's acquisition of competency skills and ethical behaviors, create a learning model amenable to empirical data collection through scientific research methods, and subsequently supply academic institutions with aggregate data to better inform their educationally-based quality improvement initiatives.

[2] *See* Sylvia R. Cruess & Richard L. Cruess, *The Medical Profession and Self-Regulation: A Current Challenge*, 7 Ethics J. of the Am. Med. Ass'n 4 (April 2005); *see, e.g.*, MO Court Rules—Rules of Prof'l Conduct, Rule 4 Preamble (West 2008) [hereinafter *MO Bar Rule 4*].

[3] Cruess, *supra* note 2.

[4] *See* Anne Bertkau, Jaclyn Halpern, & Sanjay Yadla, *The Privileges and Demands of Professional Self-Regulation*, 7 Ethics J. of the Am. Med. Ass'n 4 (April 2005); Nathan Koppel, *Lawyer's Charge Opens Window On Bill Padding*, Wall

In regards to lawyers, a junior partner in the Chicago law offices of Holland & Knight LLP uncovered a large-scale, billing-fraud scheme by alleging that a senior partner inflated his own time and that of three other lawyers.[5] Upon reviewing just a small sampling of billing records for one corporate client, the junior partner discovered over sixty instances of bill padding, totaling over 450 hours of overcharged time including "fictitious narratives" describing work never performed by other partners.[6] Incremental erosion against the legal industry's self-regulation manifests itself through mediation,[7] arbitration,[8] flat fee (project) billing,[9] scope of engagement letters, detailed billing descriptions,[10] and clients' refusal for "double-billing" when new associates attend client meetings with partners.

In regards to doctors, AstraZeneca and TAP Pharmaceuticals recently entered a $1.1 billion Medicare fraud settlement related to encouraging two urologists at Rush University Medical Center who received free drug samples to bill Medicare the $1,200.00 charge for the prostate cancer product.[11] In the same matter, Rush University entered a $1 million dollar settlement and has agreed to certify its compliance program annually with the Office of Inspector General for a period of three years.[12] Moreover, incremental erosion against the medical industry's self-regulation manifests itself through managed

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ST. J., Aug. 30, 2006 at B1-B2; Ameet Sachdev, *Lawyer Bills Get Closer Scrutiny —Some may pad time records, critics say*, CHI. TRIBUNE, Dec. 31, 2006; Elizabeth Crown, *Medicare Fraud Settlement Causes Oncologists To Lose Income, USA*, Medical News Today (Dec. 2005), http://www.medicalnewstoday.com/medical news.php?newsid=34664.

[5] Koppel, *supra* note 4.

[6] *Id.*

[7] *See, e.g.*, MO. REV. STAT. § 162.959 (2007).

[8] *See, e.g.*, MO. REV. STAT. §§ 435 *et seq.* (2007).

[9] Ameet Sachdev, *Lawyer Bills Get Closer Scrutiny—Some May Pad Time Records, Critics Say*, CHI. TRIBUNE, Dec. 31, 2006.

[10] *Id.*

[11] Crown, *supra* note 4.

[12] Rush News Room, *Rush Settlement with Government May Help Clarify Billing Requirements for Medicare Patients in Research Studies* (Dec. 9, 2005), http://www.rush.edu/webapps/MEDREL/servlet/NewsRelease?id=716.

care oversight, the Health Care Quality Improvement Act,[13] Pay for Performance,[14] capitation and voluntary repayment for Medicare over-billing through CMS's Program Integrity apparatus.[15]

Important lessons can be learned by heeding the dangers that led to the demise of the accounting profession in the wake of Enron, Tyco, and others. In its wake, the public outcry exacted swift and broad new law, namely the Sarbanes-Oxley Act of 2002, and continuous regulatory oversight by the Public Company Accounting Oversight Board.[16] The groundswell of public mistrust and resultant sweep of new laws and external regulations effectively eviscerated the accounting profession's then-growing privilege toward self-regulation. Today, at least a discernable crack exists in the foundation of public trust regarding law and medicine.

How can it be that newly minted lawyers hold their bar cards without at least one hour of required, supervised legal practice? Other fields aspiring toward professional status mandate the hallmark of professional practice: practical training under a mentor to gain the skills and behaviors held by the field's practicing members.[17] Why is it that one cannot cut hair or embalm a corpse without mentored practice,[18] yet one can advise and represent the general public on matters that touch and concern the most precious issues in people's lives?

Most incredulously, the American Bar Association (ABA) declared that "[i]t has long been apparent that American law schools [that are accredited by the ABA] cannot reasonably be expected to shoulder the task of converting even very able students into full-fledged lawyers licensed to handle legal matters."[19] Yet, miraculously enough, the day

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[13] Health Care Quality Improvement Act of 1986, 42 U.S.C. §§ 11101 et seq. (2007).

[14] U.S. Dep't HHS, *Medicare "Pay for Performance (P4P)" Initiatives* (Jan. 31, 2005), http://www.cms.hhs.gov/apps/media/press/release.asp?Counter=1343.

[15] U.S. Dep't HHS, *CMS Program Integrity Initiative*, (Aug. 27, 2004), http://www.cms.hhs.gov/apps/media/press/factsheet.asp?Counter=1179.

[16] Sarbanes-Oxley Act of 2002, 15 U.S.C. §§ 7211 *et seq.* (2007).

[17] *See, e.g.*, MO Division of Prof'l Registration, Regulated Professions, http://pr.mo.gov/regulated-professions.asp.

[18] *Id.*

[19] A.B.A. SECTION OF LEGAL EDUC. AND ADMISSIONS TO THE BAR, LEGAL EDUC. AND PROF'L DEV.—AN EDUC. CONTINUUM, REPORT OF THE TASK FORCE ON LAW

a new lawyer is sworn into practice as a member of his or her state's bar, he or she promises to abide by the rules governing the bar including that "[i]n all professional functions [he or she] should be competent" and maintain conduct in conformity with the requirements of the law, including the Rules of Professional Conduct.[20]

In sharp contrast, the Accreditation Council for Graduate Medical Education (ACGME) is, at the helm, leading the medical profession's self-directed initiative to "[e]ducat[e] Physicians for the 21st Century" through a well-defined program, called the ACGME Outcome Project.[21] The ACGME mandates compliance with program requirements for future accreditation and provides leadership, direction, and resources to assist with implementation of the Outcome Project objectives.[22]

William M. Sullivan, senior scholar at The Carnegie Foundation for the Advancement of Teaching, has concluded that "[w]ithout willingness to uphold the contract with society, professional work ceases to be good, for individual practitioners or for the public."[23] In addition, "[p]rofessionals are enjoined both to be competent, in the technical sense of being effective lawyers . . . or physicians, and also to conduct themselves with due regard for their public obligations."[24]

In 1762, Jean-Jacques Rousseau articulated the vision of our modern form of professional self-regulation in The Social Contract.[25]

> Men can be both ruled and free if they rule themselves. For what is a free man but a man who rules himself? A people can be free if it retains sovereignty over itself, if it enacts the rules

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SCHOOLS AND THE PROFESSION: NARROWING THE GAP, at 4 (American Bar Association 1992) [hereinafter *MacCrate Report*].

[20] *See, e.g.,* MO Bar Rule 4, supra note 2.

[21] ACCREDITATION COUNCIL FOR GRADUATE MEDICAL EDUCATION, ACGME OUTCOME PROJECT (2006), http://www.acgme.org/outcome/e-learn/e_powerpoint.asp [hereinafter *ACGME*].

[22] *See id.*

[23] WILLIAM M. SULLIVAN, WORK AND INTEGRITY 40 (2nd ed. 2005).

[24] *Id.* at 41.

[25] JEAN-JACQUES ROUSSEAU, THE SOCIAL CONTRACT (Maurice Cranston ed., Penguin Classics 1968) (1762).

or laws which it is obliged to obey. Obligation in such circumstances is wholly distinct from bondage; it is a moral duty which draws its compulsion from the moral will within each man.[26]

The task, then, is to form a social pact.

> 'How to find a form of association which will defend the person and goods of each member with the collective force of all, and under which each individual, while uniting himself with the others, obeys no one but himself, and remains as free as before.' This is the fundamental problem to which the social contract holds the solution.[27]
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> The articles of this contract are so precisely determined by the nature of the act, that the slightest modification must render them null and void; they are such that, though perhaps never formally stated, they are everywhere the same, everywhere tacitly admitted and recognized; and if ever the social pact is violated, every man regains his original rights and, recovering his natural freedom, loses that civil freedom for which he exchanged it.[28]
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> If, then, we eliminate from the social pact everything that is not essential to it, we find it comes down to this: 'Each one of us puts into the community his person and all his powers under the supreme direction of the general will; and as a body, we incorporate every member as an indivisible part of the whole.'[29]
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> Immediately, in place of the individual person of each contracting party, this act of association creates an artificial and corporate body composed of as many members as there are voters in the assembly, and by this same act that body acquires its unity, its common ego, its life and its will.[30]

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[26] *Id.* at 29.
[27] *Id.* at 60.
[28] *Id.*
[29] *Id.* at 61.
[30] *Id.*

Just as the general will is declared by the law, so is the public judgement declared by the censorial office; public opinion is that form of law of which the censor is the minister, and which he, on the model of the prince, merely applies to particular cases. Far, then, from the censorial tribunal being the arbiter of the people's opinion, it is only the spokesman; and as soon as it departs from this, its decisions are void and without effect. It is useless to separate the morals of a nation from the objects of its esteem; for both spring from the same principle and both necessarily merge together. Among all the peoples of the world, it is not nature but opinion which governs the choice of their pleasures. Reform the opinions of men, and their morals will be purified of themselves. Men always love what is good or what they think is good, but it is in their judgement that they err; hence it is their judgement that has to be regulated. To judge morals is to judge what is honoured; to judge what is honoured, is to look to opinion as law . . . . The opinions of a people spring from its constitution; although the law does not regulate morals, it is legislation that gives birth to morals; when legislation weakens, morals degenerate; and then the rulings of the censors will not accomplish what the law has failed to achieve . . . . From this it follows that the censorial office may be useful in preserving morals, but never in restoring morals. Set up censors while the laws are still vigorous; for as soon as the vigour is lost, everything is hopeless; nothing legitimate has any force once the laws have force no longer.[31]

Professional self-regulation begins where learning begins. As law and medical students transition into novice practitioners, they must learn to navigate through complex situations at their internship, externship, clinic, clerkship, or residency experience to gain the requisite tacit knowledge to perform. Academic educators and master practitioners[32] alike recognize the significance and the complexity of the problems in

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[31] *Id.* at 174-75.

[32] The term "master practitioner" is created and adopted to refer to the special class of practitioners who mentor students during their practical experiences.

teaching novice practitioners[33] the essentials to embark on a profession of practicing law or medicine.[34] At this time, however, neither novice practitioner nor master practitioners have a comprehensive, structured methodology to approach the worthy goal of skill acquisition.

Moreover, in regards to legal pedagogy, "those who would exclude the wisdom of practice from serious educational endeavor in the name of basing professional training upon a purely formalized conception of knowledge 'may ultimately discover that their wells of true human expertise and wisdom have gone dry.'"[35] At this time, the medical profession appears to be embracing a pedagogical paradigm shift, yet old-schoolers are concerned that the pendulum may be swinging too far in the opposite direction. Therefore, in regards to medical pedagogy, the extent to which students and faculty "come to see expertise as a function of a large knowledge base and masses of inferential rules, they will fail to progress beyond a basic level of competence."[36] The establishment's concern, therefore, is legitimate. Additionally, this kind of thinking risks the integrity of the "sum of social intelligence professionals can bring to an organization."[37]

In The Work of Nations, Robert B. Reich examines today's economy and subdivides workers into three occupational groups. Lawyers, doctors, researchers and even university professors are clustered into the most dynamic element of the workforce called "symbolic analysts."[38] "What they have in common is symbolic analysis: a set or sets of 'tools for doing conceptual puzzles' . . . their particular skill is to 'solve, identify, and broker problems by manipulating symbols.'"[39]

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[33] The term "novice practitioner" is created and adopted to refer to the class of students who are in the process of gaining the requisite minimum core competencies to practice their profession.

[34] See generally, MacCrate Report, supra note 18-19; see generally, Outcome Project, supra note 20-21.

[35] Sullivan, supra note 23, at 255.

[36] Id. at 254.

[37] Id.

[38] See id. at 172-73 (citing Robert B. Reich, The Work of Nations 177 (Alfred A. Knopf Inc. 1st ed.1991)).

[39] See id.

The surprising upshot of Reich's argument is that these developments are rendering obsolete much of professional life as it is now structured. Reich sees the traditional professional career, based upon certified training in a fixed body of knowledge and progressing through a fairly fixed occupational ladder, as passing away with the bureaucratic organization. Along with the corporation economy of the past century, Reich is forecasting the demise of the narrowly specialized, technically oriented, organizational professions.

In the new economy, Reich argues, the important thing is not mastery of a body of knowledge—that can increasingly be obtained through a few computer keystrokes—but 'the capacity to effectively and creatively *use* the knowledge.' Practical, multisided intelligence, that is, will become more valuable than narrow technical capacity. Or rather, the two are being combined in new ways so that the practical and general orientation often has the upper hand over the technical and the specialized.[40]

So, how did law and medicine get themselves into the conundrum in which they now find themselves?

A pivotal part of the story of the rise of the professions in America was their entry to the university. As in most other modern nations, the professions' self-understanding and character was formed importantly by their symbiosis with the modern academy. In broad terms, this meant a moving away from apprenticeship (with its intimate pedagogy of modeling and coaching) toward reliance upon the methods of academic instruction (with its emphasis upon classroom teaching and learning carried out far from the sites of professional practice). Just as the most successful groups of practitioners were consolidating a guildlike structure for organizing recruitment, standards, and admission to practice, they began simultaneously to outsource the crucial component of education. That they did

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[40] *Id.*

so, rather than organize competing training institutions, is testimony to the great prestige that university-based teaching and research had achieved by early in the twentieth century. But it also bequeathed a legacy of crossed purposes and even distrust between practitioners and academics, as well as between the academy and the public.[41]

As it stands, there is a challenge:

The challenge for professional education is how to teach the complex ensemble of analytic thinking, skillful practice, and wise judgment upon which each profession rests. The university setting, and even more the prevalence of the academic model of thought and teaching, facilitates training analytic habits of mind. It does far less, however, to further students' progress in developing practical skills and capacity for professional judgment. It would be naïve to attempt to restore the old forms of apprenticeship, which often concealed exploitation and abuse of apprentices, but the predominance of academic theory tends to overshadow the importance of learning from and through practice. Moreover, the relative isolation of academic research and training from public concerns, though it fosters some intellectual development, has pushed the professions' social contract out of students' sight during the critical years of schooling. It is this lack of integration among the parts and several aims that modern professional education confronts its greatest challenge.[42]

How do we come to know about professional practice? Practically speaking, how do students translate what they learned in school into skills necessary to practice effectively and ethically? One could search, and indeed possibly find, several plausible bases to improve our understanding of how students translate academic education into professional competency skills and ethical behaviors. However, to

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[41] *Id.* at 195.
[42] *Id.* at 195-96.

date, no such comprehensive body of study as "translational education™" exists, especially not to aid in our understanding of how non-disabled adults pursuing professional careers apply what they learn at the university to the work environment. An in-depth exploration of contemporary cognitive theories may serve as a conduit to improve our understanding of how academic education translates into professional legal and medical practice. Contemporary cognitive theories generally posit that *knowing* occurs through experience. Experiential learning, as a general notion, is how a person interacting with his or her environment while engaged in a meaningful occupation comes to know more about that which may have been *learned* in a traditional academic setting.[43] Examining how contemporary cognitive theories apply, specifically to everyday tasks that novice practitioners must perform, may shed some light on how students come to know about practicing law and medicine. Moreover, the creation of a new learning model, rooted in contemporary cognitive theory, could facilitate our understanding of how students learn to practice law and medicine. The Translational Education Academic Competency Heuristic Compass (TEACH Compass™), designed herein, is the new learning model for the dual purpose of improving our understanding of Translational Education™ and directly aiding students in acquiring professional skills and ethical behaviors. The TEACH Compass™ serves as a metaphorical bridge to connect the community of academic educators with the community of practitioners in their joint efforts to teach law and medical students the fundamentals of their respective professional practices. This learning model seeks to facilitate students' acquisition of the professional competencies identified by the American Law Institute (ALI) and American Bar Association's (ABA) MacCrate Report and the Accreditation Council for Graduate Medical Education's (ACGME) Outcomes Project, respectively.

In Part I, five contemporary cognitive theories are explored with specific examples of their application to the legal and medical context

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[43] *Cf.* CHARLES H. CHRISTIANSEN & CAROLYN M. BAUM, OCCUPATIONAL THERAPY: PERFORMANCE, PARTICIPATION, AND WELL-BEING (1st ed. 2005) (explaining PEOP or Performance-Environment-Occupation-Performance is a predominant occuptational therapy theoretical framework to understand how humans improve their performance of everyday life skills).

including: Ecological Psychology, Situated Cognition & Communities of Practice, Distributed Cognition or the Historical-Cultural Approach, Activity Theory, and Ability & Talent Development Theory. In Part II, a new methodology, designed to help law and medical students acquire professional competency skills, is proposed through the creation of a new learning tool, The TEACH Compass™. First, a narrative story about orienteering in the dark[44] depicts the challenges facing the novice and his master as they work together to acquire basic skills. Second, the TEACH Compass™ Map[45] serves as the primary tool to establish a framework through which novice and master can systematically approach skill acquisition. Third, the Aid to Goal-Setting[46] serves as a tool to teach the novice how to write effective goals to acquire core competencies. Fourth, the SHINE note[47] serves as another tool which facilitates learning through reflection and various cognitive exercises then communicates progress toward achieving learning goals to both the master practitioner and the professor who supervises the externship or clinical program (who is renamed the guide master). Fifth, the cognitive theories outlined in this body of work may be referenced as a tool for meta-cognition. For our purposes, that means how one thinks when he or she is thinking about how to approach and perform a new task. Finally, in Part III, concluding remarks address the potential impact of implementation of this learning model within the professions including directives for scientific research.

I. CONTEMPORARY COGNITIVE THEORIES

Five contemporary cognitive theories are examined to show how experiential learning occurs: Ecological Psychology, Situated Cognition & Communities of Practice, Distributed Cognition or the Historical-Cultural Approach, Activity Theory, and Ability & Talent Development Theory. Each theory possesses distinctive features,

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[44] *Infra* text accompanying notes 165-66; *Infra* Finding Your Way—The Lessons of Experience.

[45] *Infra* Appendix A; *Cf.* The American Occupational Therapy Association, Inc., Fieldwork Performance Evaluation For The Occupational Therapy Student (2002).

[46] *Infra* Appendix B.

[47] *Infra* Appendix C.

perspectives, and conceptual terms for understanding how people learn, and conversely, how people can effectively teach in an experiential learning system. The theories, at times, also share themes and a conceptual framework which underpins the cohesive foundation beginning to emerge as we develop our contemporary understanding of how people learn. An overview of the essence of each theory is explored followed by a discussion of its potential application to the legal practicum and medical residency.[48]

A. Applying Ecological Psychology to the Legal Practicum and Medical Residency

"Aristotle posited that the knower and the known are united in a functional interdependency."[49] "Consistent with Aristotelian thought, [newly emerging learning theories] challenge the static, analytic, and segmented thought of absolute dualism"[50] that separates the individual from the environment. The commonly held "'belief that individuals are firmly seated within a context that co-determines their perspectives and understandings of content'"[51] redefines contemporary learning theory as a relational transaction.

> Recognition of the interdependence of individuals and their environments is clearly evident in ecological psychology (Gibson, 1979/1986; Turvey & Shaw, 1995). Ecological psychology is based on the premise that perception is a property

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[48] The term "legal practicum" is created to distinguish this practical legal experience in which a novice participates when using the *TEACH Compass* in contrast to the multitude of other names used for various experiences currently employed (externship, internship, clerkship, clinic, etc.).

[49] Sasha A. Barab & Jonathan A. Plucker, *Smart People or Smart Contexts? Cognition, Ability, and Talent Development in an Age of Situated Approaches to Knowing and Learning*, 37(3) EDUC. PSYCHOLOGIST 165, 168 (2002) [hereinafter *Smart People or Smart Contexts?*] (citing THOMAS J. LOMBARDO, THE RECIPROCITY OF PERCEIVER AND ENVIRONMENT: THE EVOLUTION OF JAMES J. GIBSON'S ECOLOGICAL PSYCHOLOGY 17 (Robert E. Shaw, William M. Mace, & Michael T. Turvey, eds., Lawrence Erlbaum Associates, Inc. 1987)).

[50] *Id.* at 167-68.

[51] *See id.* at 168.

of an *ecosystem*, not an individual, and is co-determined through the individual—environment interaction.   An ecosystem consists of an individual plus a mutually compatible environment (or, equivalently, an environment plus a mutually compatible individual).   Gibson (1979/1986) introduced the relational terms *affordance* and *effectivity* . . . . [A]n affordance is a specific combination of properties of an environment, taken with reference to an individual, that can be acted upon— opportunities for action (Gibson, 1977).   Reciprocally, an effectivity is a specific combination of properties assembled by an individual, taken with reference to the environment, that allow for the dynamic actualization of a possibility for action (Shaw & Turvey, 1981).[52]

Notably, "perception and action, from this perspective, are properties of an agent-environment system, not of an individual, or an environment alone."[53] "It is within this coupling, in the flow [between the environment and the perceiver] that ecological psychologists place the ability to act intelligently."[54] "[W]hat makes one individual's cycle of perception-action more 'intelligent' (or functional) than another is not some objective representational meaning but its contextualized functional value—that is, its usefulness in terms of the particular contexts in which it is applied."[55]

As applied to the legal practicum and medical residency, the most basic tenet of ecological psychology requires learning to occur through the flow of action and perception within the contextual environment where one is expected to perform intelligently. Simply put, one comes

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[52] *Id.* at 168-69.

[53] *Id.* at 169 (citing Michael T. Turvey, *Affordances and Prospective Control: An Outline of the Ontology*, 4 ECOLOGICAL PSYCHOL. 173, 173-87; Michael T. Turvey & R. E. Shaw, *Toward an ecological physics and a physical psychology*, in THE SCIENCE OF THE MIND: 2001 AND BEYOND 144-69 (Robert. L. Solso & Dominic W. Massaro, ed. 1995)).

[54] Sasha A. Barab & Jonathan A. Plucker, *Smart People or Smart Contexts? Cognition, Ability, and Talent Development in an Age of Situated Approached to Knowing and Learning*, 37(3) EDUC. PSYCHOLOGIST 165, 168 (2002).

[55] *Id.*

to know that which is to be known through interaction. The practicum or residency is the ecosystem where novice practitioners take objective representations and employ a functional application of the theories and rules in a specific context.[56] In the legal practicum, the novice takes legal theories, constitutional principles, statutory principles, case law rules, etc., and applies them to a specific client's matter. In the medical residency, the novice takes the basic and clinically supportive sciences appropriate to their discipline including the pathophysiology and epidemiology of disease, clinical findings, laboratory findings, differential diagnosis, therapeutic options, preventative measures, etc., and applies them to a specific patient's case.[57] The rich contextual experience deepens the novice practitioner's understanding of the content of the body of knowledge learned in the academic milieu. The objective representations, taught by academic educators, fundamentally serve as the foundation of knowing, while the practical experience erects a unique structure upon it where the contextual particulars add shape and dimension to that which is known, thereby developing a deeper level of knowing.

As a means of conceptualizing the nature of the transactional relationship, Gibson's terms, *affordance* and *effectivity*, create a framework to assess whether the ecosystem, that is, the practical experience, supports intelligent action and perception.[58] Both master practitioner and guide master are encouraged to examine the properties of affordance and effectivity as they relate to a novice practitioner's ability to perform more or less intelligently in the ecosystem. The master practitioner should examine the specific properties *afforded* to the novice which support his or her success or lack of success in

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[56] While in some ways this functional application is analogous to the traditional law school essay exam and medical hypothetical case such as the Standardized Patient, but in other ways it is markedly different. Simulated learning or hypothetical learning is qualitatively different than real-life experiences. While a growing body of research in psychology, education, and rehabilitation are exploring and challenging the benefits of hypothetical or simulated learning experiences versus real-life learning experiences, further discussion of this research is beyond the scope of this article.

[57] *ACGME, supra* note 21.

[58] *Smart People or Smart Contexts?, Supra* note 50.

performing intelligently in the environment. For example, when a novice is assigned the task of researching a legal or medical question, the question to ask might be whether the master *afforded* the detailed context in which the question arose, or raised the question in a vacuum. In the legal practicum, when a novice is assigned the task of preparing arguments and documents to negotiate a settlement or plea agreement, the questions to ask might be whether the master *afforded* the detailed context of the case, the goals of the master's firm or government office, and the public policy of the state. In the medical residency, when a novice is assigned the task of establishing a plan of care, the questions to ask might be whether the master *afforded* the detailed context of the case, the cultural diversity issues of the patient, the coordination of ancillary services within the healthcare system, reimbursement issues, community resources, and educational needs.[59] The ability of the novice to perform intelligently is, therefore, contingent upon the perception of the necessary properties in the case assigned, and in turn, whether those properties were *afforded* to the novice.

Reciprocally, both master practitioner and guide master should examine the specific combination of properties assembled by the novice, within the context of the case assigned, to guide his or her success in performing intelligently in the environment. For example, when a novice is assigned the task of researching a legal or medical question, the question to ask might be whether the novice has *effectively* combined the specific properties to thoroughly resolve the question, or missed combining the necessary resources. During the legal practicum, when a novice is assigned the task of preparing arguments and documents to negotiate a settlement or plea agreement, the question to ask might be whether the novice *effectively* combined the specific properties of the case, with the goals of the firm or government office in a manner consistent with the public policy of the state. Similarly, during the medical residency, when a novice is assigned the task of conducting the medical interview, performing the physical examination, and prescribing the appropriate diagnostic work-up, the question to ask might be whether the novice *effectively* combined the specific properties of the case, with patient-centered care,

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[59] *ACGME, supra* note 21.

evidence-based medicine, patient preferences, and accurate interpretation of medical tests.[60] The ability of the novice to perform intelligently is, therefore, also contingent upon the action the novice takes to combine the specific properties in the case assigned, and in turn, whether those actions were *effective* for the novice.

In summary, "[i]n contrast to theories that depict truth as an objective substance existing in the world or those that conceive of knowing as a product of human mental activity, ecological theory maintains that knowing is an activity that is co-determined by individual and environment."[61] Working in concert, rigorous academic instruction and experiential learning are joined in the legal practicum or medical residency where the novice comes to know through applying content within a rich context.

B. *Applying Situated Cognition and Communities of Practice to the Legal Practicum and Medical Residency*

> Knowledge is more aptly phrased *knowing about*, and knowing is a perceptual activity that always occurs within a context. . . . From a situativity perspective, *knowing about* is described as a dynamic process distributed across the knower, that which is known, the environment in which knowing occurs, and the activity through which the learner is participating when learning or knowing occurs.[62]

As applied to the legal practicum, academic educators are primarily responsible for imparting knowledge in the study of law. Novice practitioners, at first, come to know about legal principles, theories and policies in the context of examining hallmark cases in which the academic educator distills those specific principles, theories and

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[60] *See id.*

[61] *Smart People or Smart Contexts?*, *supra* note 50, at 169 (citing John S. Brown, Allan Collins & Paul Duguid, *Situated Cognition and the Culture of Learning*, 18 EDUC. RESEARCHER 32, 32-42 (1989); Richard S. Prawat & Robert E. Floden, *Philosophical Perspectives on Constructivist Views of Learning*, 29 EDUC. PSYCHOL. 37, 37-48 (1994)).

[62] *Id.* at 170.

policies primarily through group dialogue. The case method highlights the contextual nature of *knowing about* the law through identifying and understanding the specific factual circumstances, specific adversarial parties to the suit and their parties' positions in the suit, the specific jurisdiction, and specific court where the matter is heard, all against the backdrop of a specific point in our Nation's history. After which, in classic form, either the professor or the authors of the case book will change the context in which the same or similar legal principles, theories, or policies apply, which in effect, puts one case within the broader context of a specific body of law. Through this process, students come to know whether the case represents a majority rule, minority rule, or an exception to the rule, a broadening or narrowing of existing doctrine, a growing trend or a diminishing trend, or as is rarely the case, a departure from existing doctrine all together.

As applied to the medical residency, medical educators are primarily responsible for imparting knowledge in the study of medicine. At first, novice practitioners, initially learn medical intervention, known as the standard of care, and evidence-based medicine in the context of examining the classic case (the standardized patient) where the academic educator distills those specific diagnostic, therapeutic, and preventative recommendations primarily through patient rounds.[63] Making patient rounds, or grand rounds, highlights the contextual nature of *knowing about* medicine through identifying and understanding the specific symptoms, conditions, and risk factors of the patient, principles of patient-centered care and cultural diversity, at a particular point of access within the healthcare delivery system, all against the backdrop of compliance with ethical standards and compassionate medical judgment.[64]

When students act as novice practitioners engaged in practical experience, they come to know more about the contextualized nature of legal or medical practice that, in essence, builds on the existing structural framework of traditional pedagogy. The knowing, however, occurs through a dynamic *perceptual activity* as the novice is situated within the contextual environment. In law, the context may include

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[63] *See ACGME, supra* note 21.
[64] *See id.*

specific facts, specific parties, specific jurisdictional issues and a finite point in our Nation's history. Where as, in medicine, the context may include disease-specific epidemiology, family dynamics, aspects of an integrated, healthcare-delivery system, and third-party payer requirements.[65] This live contextual experience, of course, may become part of our settled case law in the legal context or part of our standard of care in the medical context.

"In terms of its intellectual roots, it is probably fair to say that sociological theories of situated practice and action were more important influences in shaping the beliefs of situated learning theorists than psychological theories."[66] This group of theorists challenged the dominant cognitive theory, called the information processing approach, which contends that "knowledge consists of representations that are literally stored within the mind, presumably in long-term or procedural memory, and that intelligence and problem-solving capabilities may be understood in terms of formal operations on those representations."[67] Information processing theory likened the brain to a computer to explain how humans process information and learn. In contrast, situated learning theory holds that "knowledge and problem-solving abilities are necessarily situated relative to a local context that includes not only people's interrelations with one another, but also artifacts."[68] Furthermore, the way in which an artifact is used along with the varied contexts in which it is used, creates a structural framework for learning that supports the generation of different learning experiences from one individual to another with a common artifact.[69] Situated learning theory focuses on how cognitive processes and problem-solving capacities are a function of the learner's interaction with the external environment.[70] The hallmarks of the situated-action approach, as

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[65] *See id.*

[66] Edward Lorenz, *Models of Cognition, the Contextualisation of Knowledge and Organisational Theory*, 5 J. OF MGMT. AND GOVERNANCE, 307, 314 (2001).

[67] *Id.* at 314.

[68] *Id.*

[69] *See id.* (citing Jean Lave, Michael Murtaugh, & Olivia de la Rocha, *The Dialectic of Arithmetic in Grocery Shopping, in* EVERYDAY COGNITION: DEVELOPMENT IN SOCIAL CONTEXT 67-94 (Barbara Rogoff & Jean Lave, eds., 1984)).

[70] *Id.* at 315.

researched by Suchman, explains that human problem-solving capabilities develop through a person's actual practice in a particular artifactual setting such that knowledge remains highly-contextualized and tacit in nature.[71]

Next, our focus shifts to the notion of a community of practice which grew out of the work on the situated nature of learning by John Seely Brown, Paul Duguid, Jean Lave, Lucy Suchman and their associates at the Palo Alto Institute for Research on Learning in the 1980's.

> Communities of practice consist of people bound together by informal relations who share a common practice . . . . Around this shared practice, they develop a common language and shared understanding of the environmental context in which they work, including the meaning they attach to artifactual arrangements . . . . These shared understandings remain tacit or implicit for the most part, and communities of practice are characterized by a low degree of codification of members' knowledge (internal citation omitted).[72]

As applied to the legal practicum or medical residency, novice practitioners come together and join in a community of practice to impart and receive knowledge in the classroom, during office hours, over lunch, in a study group, over a cup of coffee at the neighborhood bookstore, during journal article discussions, while using information technology tools, and so forth to develop a "common language and shared understanding of the environmental context in which they work."[73]

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[71] *Id.*

[72] *Id.* at 316 (citing John S. Brown & Paul Duguid, *Organisational Learning and Communities of Practice: Toward a Unified View of Working, Learning and Innovation,* 2 ORGANISATION SCIENCE, 40, 41-43 (1991); Etienne Wenger, *Communities of Practice: Learning as a Social System,* 9 SYSTEMS THINKER, 1-5 (1998)).

[73] *Smart People or Smart Contexts?, supra* note 50, at 173 (citing JEAN LAVE, COGNITION IN PRACTICE: MIND, MATHEMATICS, AND CULTURE IN EVERYDAY LIFE (Cambridge Univ. Press 1988)).

Another concept held within the community of practice approach, called legitimate peripheral participation, recognizes that the

> primary motivation for learning involves participating in authentic activities that move one towards becoming more central to a community of practice . . . . Lave suggested that learning is more than simply receiving a body of factual knowledge; rather, learning is a process that involves becoming a different person with respect to possibilities for interacting with people and the environment.[74]

Lave and Wenger further argued that "in many apprenticeship situations the desire to become central to a community of practice makes learning legitimate and of value for the individual."[75]

As stated by Wenger, a leading proponent of the theory, communities of practice are among an organization's "most versatile and dynamic knowledge resource and form the basis of an organization's ability to know and learn."[76] Communities of practice serve these functions through two organizational processes: legitimate peripheral participation and story-telling. First, legitimate peripheral participation[77] "provide[s] [the] mechanism for the transmission of tacit knowledge and the reproduction of routine . . . behaviors."[78] The concept holds that:

> people acquire the knowledge they need to achieve a competent performance by becoming 'insiders' or legitimate members of the relevant community. Initially, as newcomers, they are at the periphery of the community. They observe the behavior of old-timers and they acquire the language and worldview of the community by participating in its discussions. Over time, they become knowing and fully skilled members of the community,

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[74] *Id.*

[75] *Id.* (citing JEAN LAVE & ETIENNE WENGER, SITUATED LEARNING: LEGITIMATE PERIPHERAL PARTICIPATION (Cambridge Univ. Press 1991)).

[76] Lorenz, *supra* note 68, at 316.

[77] *Id.* at 326 n.13.

[78] *Id.* at 316.

capable of participating in the process of passing on the community's knowledge to others. Thus, learning is eminently a process of enculturation. As Brown and Duguid put it, "learners are acquiring not explicit, formal 'expert knowledge,' but the embodied ability to behave as community members.[79]

Second, the concept of communities of practice holds that members engage in story-telling. "The stories narrate the members' past experience[s] with similar problems [which are] designed to draw on the community's accumulated wisdom in an effort to arrive at a shared diagnosis of the problem."[80] The stories "function, rather like the common law [or evidence-based medicine] as a usefully under-constrained means to interpret each new situation in the light of accumulated wisdom and constantly changing circumstances."[81]

In summary, situated learning supports the notion that learning is locally constructed within a unique contextual experience as the individual interacts with artifacts and people in their environment. One shortcoming of this approach is its inability to explain how learning is generalized and applied to novel problems. The Distributed Cognition or the Cultural-Historical Approach builds upon situated learning as it seeks to explain how situated learning is generalized to a broader contextual framework. These approaches are explored next.

C. Applying Distributed Cognition or the Historical-Cultural Approach to the Legal Practicum and Medical Residency

Proponents of the Historical-Cultural Approach distinguish their work from situated learning theory and the communities of practice approach by emphasizing "the cultural and historical determinants of cognitive processes."[82] The "core idea in the socio-historical approach to psychology is that human cognitive processes are mediated by tools

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[79] *Id.* (citing John Brown & Paul Duguid, *Organisational Learning and Communities of Practice: Toward a Unified View of Working, Learning, and Innovation*, 2 ORGANISATION SCIENCE 1, 40, 47 (1991)).
[80] *Id.* at 317.
[81] *Id.*
[82] *Id.* at 318.

and artifacts."[83]   They create a structural framework for generalizing and transferring what has been learned to new situations. "Tools and artifacts are taken to refer not only to physical objects, but also to language and *external symbolic representations* in the form of verbal texts and the like."[84]   Tools, therefore, "not only transform the nature of the cognitive processes needed to perform various tasks or computations, but also serve to connect the individual to knowledge held more widely in society."[85]   As Leont'ev put it in his summary of one part of Vygotsky's work:

> [t]he tool mediates activity and thus connects humans not only with the world of objects, but also with other people. Because of this, human activity *assimilates the experience of human-kind*. This means that human's mental processes (their "higher psychological functions") acquire a structure necessarily tied to sociohistorically-formed means and methods transmitted to them by others in the process of cooperative labor and social interaction.[86]

Next, distributed cognition is conceptually described as "a learner's ultimate understanding of any object, issue, concept, process, or practice, as well as [his or] her ability to act competently with respect to using these, can be attributed to, and is distributed across, the physical, temporal, and spatial occurrences through which [his or] her competencies have emerged."[87]   As conceptualized by Pea, one's ability to act in an intelligent manner "is *accomplished* or *engaged* rather than

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[83] *See also id.* Michael Cole and Yrjö Engeström, *A Cultural-Historical Approach to Distributed Cognition, in* DISTRIBUTED COGNITION: PSYCHOLOGICAL AND EDUCATIONAL CONSIDERATIONS 4-10 (Gavriel Solomon ed., Cambridge Univ. Press 1993); James V. Wertsch, *Introduction, in* THE CONCEPT OF ACTIVITY IN SOVIET PSYCHOLOGY (James V. Wertsch ed., M.E. Sharpe 1979).

[84] Lorenz, *supra* note 68, at 318-19 (emphasis added).

[85] *Id.* at 319.

[86] *Id.* (citing A. Leont'ev, *The Problem of Activity in Psychology, in* THE CONCEPT OF ACTIVITY IN SOVIET PSYCHOLOGY 226, 226-27 (James Wertsch ed., M. E. Sharpe 1981)).

[87] *Smart People or Smart Contexts?, supra* note 50, at 170.

possessed."[88] Further, "Pea describes intelligence as an activity that is present in the tools, modes of representation, human collaborators, and other artifacts an individual uses to act intelligently."[89]

Because "language and verbal text serve as tools for bringing structure within the mind of the task performer" interacting with the task world, a necessary distinction exists "between the descriptions of the performance skill [in a] given artifact and the actions taken on the world."[90] Therefore, mediating artifacts should not be construed as devices that directly transfer organizational routines through direct control of behavior.[91] Rather, mediating devices merely control behavior indirectly, thus preserving the task performer's autonomy to evaluate and judge his or her behavior within the constraints guided by the device.[92]

"The use of common artifacts by individuals working in different physical settings to solve similar . . . problems provides a basis for the emergence of shared understandings and knowledge."[93] Shared knowledge, however, does not mean that behaviors will or should be exactly reproduced in varied contexts.[94]

Another key concept of the Cultural-Historical Approach is the "zone of proximal development."[95] Vygotsky's concept explains how "children benefit from their interaction with adults or more experienced children" in developing their cognitive capabilities.[96] At first, the child's participation in accomplishing a task is quite minimal,

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[88] *Id.* (citing Roy D. Pea, *Practices of Distributed Intelligence and Designs for Education*, in DISTRIBUTED COGNITIONS: PSYCHOLOGICAL AND EDUCATIONAL CONSIDERATIONS (Gavriel Salomon ed., Cambridge University Press 1993)).

[89] *Id.*

[90] Lorenz, *supra* note 68, at 322.

[91] *Id.*

[92] *See id.*; *see also* Edwin Hutchins, *Mediation and Automatization*, in MIND, CULTURE AND ACTIVITY: SEMINAL PAPERS FORM THE LABORATORY OF COMPARATIVE HUMAN DEVELOPMENT 338, 338-53 (Michael Cole, Yrjö Engeström and Olga A. Vasquez eds., Cambridge University Press 1997) (1986).

[93] Lorenz, *supra* note 68, at 323.

[94] *Id.*

[95] *Id.* at 319.

[96] *Id.*

"amounting to little more than recognition that a task is at hand."[97] Through proximal participation "in a task that is understood by the adult," however, the "child can 'accomplish' a task before the child understands what he or she is doing."[98] As cognition catches up with task performance, "the child comes to understand the reasons for the various actions involved in accomplishing the task."[99] The cognitive process of "[internalization] of the regulative speech and external symbolic expressions that mediate task performance for the adult" become part of the child's cognitive framework.[100] The implication is that "the child's understanding of the task and of the associated, complex-regulative speech of the adult is a consequence, rather than a prerequisite, of going through the task."[101]

Consistent with Vygostsky's notion of tool-mediated cognition, Hutchins examined this cognitive process "in terms of the propagation of representational states across a series of representational media or artifacts" through Hutchin's study of navigators on a U.S. Navy vessel.[102] "The mediating artifacts include both physical objects and tools," such as the alidade and the chart, in addition to "the cognitive structure within the minds of the members of the navigation team."[103] Under Hutchin's analysis, the "representational state" of the ship's position takes a different form in different media at the same point in time: that is, "the angular representation in the alidade, the digital representation in the bearing record log, and the memory of that representation in the mind of the navigation bearing recorder."[104] As such, the ship's "representational state" is propagated among multiple media and

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[97] Id.

[98] Id.; see also Laboratory of Comparative Cognitive Development, Culture and Cognitive Development, in HANDBOOK OF CHILD PSYCHOLOGY, 318, 318-56 (Paul H. Mussen ed., William Kessen vol. ed., John Wiley 1983); Lev S. Vygotsky, The Genesis of Higher Mental Functions, in THE CONCEPT OF ACTIVITY IN SOVIET PSYCHOLOGY (James V. Wertsch ed., M. E. Sharpe 1979).

[99] Lorenz, supra note 68, at 319.

[100] Id.

[101] Id. (citing Paul H. Mussen, Culture and Cognitive Development, in 1 HANDBOOK OF CHILD PSYCHOLOGY, 318, 318-56 (William Kessen, ed., John Wiley 1983)).

[102] Id. at 320 (citing EDWIN HUTCHINS, COGNITION IN THE WILD (MIT Press 1995)).

[103] Id.

[104] Id.

artifacts, both internal and external in nature.[105] The redundancy of the "representational state" of the ship facilitates cognitive manipulation of the physical systems, or possibly cognitive simulation of the manipulation of the physical systems.[106] The logical inference is that the cognitive manipulation which occurs as a naval team is qualitatively different than the cognitive manipulation which occurs as each member of the team propagates a representation of the ship's location with his designated artifact or media.[107] While dividing the shared knowledge and crediting individuals might be of little value, how "knowledge is distributed across multiple individuals and resources" is significant to understanding the structure of distributed cognition.[108]

Hutchins also examines how one team member's use of the same artifact or media becomes increasingly sophisticated over time as cognitive development occurs. To the novice navigator, "a written procedure [is] used as an instructional aid in the context of a training session with an experienced navigator" which functions as an external cognitive artifact.[109] An internal cognitive artifact is created as the novice gains experience because the written procedure is memorized and exists as "an explicit representation within the media of his internal memory."[110] The novice's experiential learning through the use of the artifact and the guidance of the experienced navigator creates a "cognitive residue" of the experience.[111] "With even more experience," the procedure becomes so tacit that it is "embedded within the media of the [navigator's sensory]-motor system."[112] The novice has transitioned into an experienced navigator regarding the level of competence in this performance task. Once learning is tacit, theorists recognize a phenomenon where skilled navigators may find it difficult

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[105] *Id.*

[106] *Id.*

[107] *Id.*

[108] *Smart People or Smart Contexts?*, *supra* note 50, at 170.

[109] Lorenz, *supra* note 68, at 320 (citing EDWIN HUTCHINS, COGNITION IN THE WILD (MIT Press 1995)).

[110] *Id.*

[111] *Id.*

[112] *Id.*

to analyze or describe their cognitive steps that lead to successful task performance.[113]

As applied to the legal practicum and medical residency, situated learning theory serves as the key to unlock our understanding of how novice practitioners interact not only with other people, but also with artifacts and tools in a local context.[114] Moreover, situated learning theory supports the notion that a common artifact can support the "generation of different learning experiences from one individual to another," as well as a different learning experience by the same individual over time when applied in a different context such as a second legal practicum or residency rotation.[115] A problem that has prevented the deployment of one uniform or standardized tool for use in the legal practicum or medical residency is the wide degree of variation in the types of practical experiences that novices practice. How could one artifact or tool possibly serve the novice in so many different traditional, non-traditional, general practice, specialty practice and community-based practice settings? The solution is a tool that serves as the guide for defining the core competencies for every novice practitioner who joins a profession. This tool should serve as an external cognitive artifact designed to communicate the various representational states of each novice practitioner in context over time. Logically speaking, the external cognitive artifact should be based upon the minimum standard professional competencies as set forth in the MacCrate Report with respect to law and the Outcome Project with respect to medicine.

Additionally, the observational research methods employed by Hutchins could similarly be employed to study how novices learn law and medicine through interaction with various artifacts and people in their work environment. The cognitive stages of development through which novice practitioners gain core competencies under experiential learning conditions need to be captured at regular intervals so that the experiential learning process can be more closely examined. A wide

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[113] *Id.*

[114] The TEACH Compass™, the aid to goal-setting, and the SHINE note thought-stimulus worksheet are all new artifacts or tools to create a structural framework for learning in context.

[115] Lorenz, *supra* note 68 at 320.

range of meaningful research projects could be created to explore various components of how learning occurs in the legal practicum and medical residency which could have a significant impact on pedagogy and the profession generally. Moreover, if academic institutions choose to adopt a set of uniform artifacts or tools, the profession takes a major step forward toward establishing controls and identifying variables for cognitive research. Meaningful empirical research projects could be designed to increase our understanding of how novices acquire competency skills.

Next, Hutchins analyzed the adaptive response of the Navy vessel's navigation team to an emergency situation. The emergency resulted from the failure of the ship's propulsion system while undertaking entry into San Diego harbor. Loss of propulsion disrupted the visual readings from the magnetic compass making the readings subject to error.[116] The team who possessed no prior experience with this kind of emergency implemented a trial and error process of mutual adjustment, adopted new labor tasks, and arrived at the necessary computations using a novel approach to determine the ship's position.[117] Hutchins observed that "none of the members appeared to reflect on the process as a whole."[118] Rather, team members put constraints on each other's behavior through presenting each other with partial computations to which they mutually adapted.[119] As an exemplary testament to situated action theory, this account demonstrates how an individual attaches meaning to what is said and done within a distributed task through ongoing interpretive acts.[120] Situated action theory adheres to the notion that knowledge and social order are locally constructed, independent of wider institutional arrangements and norms.[121] Hutchins is quick to recognize, however, that the team's adaptive response occurs within the broader context of a culture where

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[116] *Id.* at 321 (citing EDWIN HUTCHINS, COGNITION IN THE WILD (MIT Press 1995)).
[117] *Id.*
[118] *Id.*
[119] *Id.* (citing EDWIN HUTCHINS, COGNITION IN THE WILD Ch. 8 (MIT Press 1995)).
[120] *Id.*
[121] *Id.*

knowledge becomes crystallized in the physical and conceptual tools of the trade and the social organization of work.[122]

As applied to the legal practicum, the legal community regards a case of first impression as the quintessential "legal emergency." By analogy, a similar phenomenon appears to occur, at least some of the time, in a legal emergency as it does in a naval emergency. When attorneys are faced with a particular case where there is no prior experience (no case law precedent, no controlling statute, or no constitutional provision), they are more likely to employ a trial and error process, divide components of the task among several attorneys, and use a novel approach to argue their client's case. The approach the legal team adopts may include, but is not limited to: extending existing law in the controlling jurisdiction, creating a new test borrowing substantive principles from another body of law, arguing for relief in equity, developing new legal theories, examining the law of other jurisdictions, and articulating public policy concerns rooted in philosophy, psychology, sociology, or economics. This difficult and novel task is often distributed among several attorneys and the party's brief is likely to reflect a compilation of interpretive acts of the whole team. A case of first impression supports the notion that "knowledge and social order are locally constructed,"[123] but also exist within the broader context of the American system of jurisprudence where crystallized knowledge is shared.[124] Therefore, the locally constructed knowledge of one legal team, when litigated, becomes part of the shared knowledge of the entire legal community when the case of first impression is recorded in a case law reporter.

As applied to the medical residency, well, the medical community of practitioners faces actual emergencies. When physicians are faced with a particular case where there is no prior experience (no standard of care, no known medical procedure, no existing scientific evidence to establish efficacy such as was the case, with separating conjoined twins, or orchestrating the birth of sextuplets, or many "firsts" with organ transplants), they are more likely to map out the steps of the

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[122] *Id.* (citing EDWIN HUTCHINS, COGNITION IN THE WILD 374 (MIT Press 1995)).

[123] *See supra* note 125 and accompanying text.

[124] *See supra* note 126 and accompanying text.

procedure and perform practice runs, divide complex components of the task among several specialists, and use a novel approach to save lives. The approach the medical team adopts may include, but is not limited to: modifying the method of an existing procedure, creating a new use for an existing medical device or drug, endorsing the power of prayer, creating a new procedure or technique, examining the surgical methods of another specialty, and articulating the therapeutic benefits rooted in prognostic indicators, reduced mortality and morbidity, functional outcomes, and quality of life measures. This difficult and novel task is often distributed among several specialists and the patient's medical record is likely to reflect a compilation of interpretive acts of the whole team. A "medical first" supports the notion that "knowledge and social order are locally constructed,"[125] but also exist within a broader context of the American medical community where crystallized knowledge is shared.[126] Therefore, the locally constructed knowledge of one medical team, when performed, becomes part of the shared knowledge of the entire medical community when the "medical first" is published in a medical journal.

In summary, the emergence, evolution, and diffusion of learner practices in the learning environment are reciprocal in nature, where learning and doing occur in relation to each other within the context of local conditions and practices.[127] Tools and artifacts facilitate interaction with and understanding of the environment. As its most distinct and powerful feature, the historical-cultural approach explains how knowledge that is locally constructed is generalized to new situations and evolves as communal knowledge.

D. Applying Activity Theory to the Legal Practicum and Medical Residency

Certain trends in psychological research have uncovered powerful evidence that:

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[125] *See supra* note 125 and accompanying text.

[126] *See supra* note 126 and accompanying text.

[127] *Smart People or Smart Contexts?, supra* note 50, at 171.

creative engagement in activities, relationships, and social purposes is the key source of human identity and happiness. This is because attention, or the investment in psychic energy, is how human beings develop and structure their personalities. The self, that elusive Holy Grail of contemporary culture, is from this perspective a function of how human beings focus their energies. The self grows by cultivation, but self-cultivation demands, paradoxically, an outward focus. In taking care of our garden, our relationships, or our community, we are literally making ourselves. As Mihaly Csikszentmihalyi illuminated in his book *Flow*, learning to focus attention in action is the source of whatever purpose or harmony human beings achieve in life. It is the key to intrinsic motivation. Engagement with the present moment in all its prosaic, unfinished character turns out to be the magic door to the richness of life.[128]

Engaged people report that, provided their capacities are such as to be challenged but not overwhelmed by the intrinsic demands of the activity, and if the activity is sufficiently structured to furnish clear clues to performance, their self-consciousness disappears, time seems to slow down, and 'they realize that they are willing to do it for its own sake . . . even when difficult or dangerous.[129]

When referring to *activity*, activity theorists are not simply concerned with *doing* as disembodied action, but are referring to *doing* to transform some object, with a focus on the contextualized activity of the entire system—not on isolated activity (Engeström, 1987, 1993; Kuutti, 1996). An activity system consists of a subject (individuals or groups that act, and whose agency is selected as the point of view for the analysis) and an object (that which is acted upon), as well as the components that mediate the relations of subject and object. The mediating components are tools (conceptual and physical),

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[128] Sullivan, *supra* note 22, at 268 (citing MIHALY CSIKSZENTMIHALYI, FLOW: THE PSYCHOLOGY OF OPTIMAL EXPERIENCE (New York: HarperCollins, 1990)).

[129] *Id.*

community, rules, and divisions of labor (Engeström, 1987). This collective system constitutes the minimal meaningful context through which to understand human praxis.[130]

Imagine, in your mind's eye, a triangle with the word "subject," and "object," marking the left and right sides of the triangle, and "mediating components" marking the baseline of the triangle. Now, imagine the word "tools" at the apex and the words "rules" and "division of labor" at the two base points. Now, imagine a seemingly infinite number of cross-connections between each side and each point. This image reconstructs Barab's, et al., understanding of activity theory as it applies to professional practice activity.[131]

As applied to the legal practicum, activity theory embodies the conceptual interrelationships among subjects (novice practitioner, master practitioner, guide master, client, opposing counsel, witnesses, judges, etc.) objects (constitutional, statutory and common law, legal theories, public policy, facts in evidence, notions of justice, etc.), and mediating components (legal memoranda and briefs, motions, procedural and evidentiary rules, trial exhibits, ethical rules, etc. and, in the case of a novice practitioner, add the TEACH Compass™ Map,[132] short-term and long-term goals,[133] and SHINE notes[134]). The interrelationship of subjects, objects, and mediating components exist within a complex organizational system more aptly described as our legal community or American system of jurisprudence. The complex organizational system is depicted as a triangle with a seemingly infinite number of cross-connections among the mediating components demonstrating their intricate interrelationship.[135]

As applied to the medical residency, activity theory embodies the conceptual interrelationships among *subjects* (novice practitioner, master practitioner, guide master, patient, third party payers, family

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[130] *Smart People or Smart Contexts?*, *supra* note 50, at 171.

[131] *Id.* at 172.

[132] *See* Appendix A; *Cf.* The American Occupational Therapy Association, Inc., Fieldwork Performance Evaluation For The Occupational Therapy Student (2002).

[133] *See* Appendix B.

[134] *See* Appendix C.

[135] *Smart People or Smart Contexts?*, *supra* note 50, at 172.

members, etc.), *objects* (standard of care, evidence based medicine, pathophysiology and epidemiology of disease, hospital policy, facts in the medical record, notions of patient autonomy and fiduciary duties, etc.),[136] and *mediating components* (medical specialty reference manuals, physician orders, diagnostic procedures and laboratory findings, x-rays or MRIs, ICD-9 Codes, information technology, ethical rules, etc. and, in the case of a novice practitioner, add the TEACH Compass™ Map,[137] short-term and long-term goals,[138] and SHINE notes).[139] The interrelationship of subjects, objects, and mediating components exist within a complex organizational system more aptly described as our medical community or American healthcare system. The complex organizational system is depicted as a triangle with a seemingly infinite number of cross-connections among the mediating components demonstrating their intricate interrelationship.[140]

In contrast to analysis methods that treat interacting system components in isolation, the methods of analysis used by activity theorists provide a means to account for the complexities of course dynamics. First, the methods acknowledge that subject-object relations and outcomes of understanding all exist as part of a context. This recognition of context shifts the unit of analysis from the individual or the environment to the system. Second, it looks for explanations in the activity (person-acting-in-situation) and not in the mind of the individual nor [sic] the environmental components. By treating activity as a contextualized set of events that are distributed across physical tools and rich contexts, all of which are embedded in a rich sociocultural history, activity theory has

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[136] *See Outcome Project, supra* note 20, at Subsection Practical Implementation.
[137] *See* Appendix A; *Cf.* The American Occupational Therapy Association, Inc., Fieldwork Performance Evaluation For The Occupational Therapy Student (2002).
[138] *See* Appendix B.
[139] *See* Appendix C.
[140] *Smart People or Smart Contexts?, supra* note 50, at 172; *see also* Sasha A. Barab, M. Barnett, L. Yamagata-Lynch, & T. Keating, *Using activity theory to understand the contradictions characterizing a technology-rich introductory astronomy course, in* MIND, CULTURE, AND ACTIVITY (in press).

much to offer in tackling the theoretical and methodological questions that are central to theories that suggest cognition is practice-bound or situated. An important feature of activity theory is the acknowledgement that each current system is nested, physically, socially, and historically within various other activity systems.[141]

As applied to the legal practicum and medical residency, activity is treated as a contextualized set of events occurring within our respective communities of practice. It follows that, in our rich socio-cultural history, the knowing that develops through the activity system is cognitively generalized beyond the specific practice setting in which knowledge is gained through transforming the specific objects. In law, as novice and master take account of majority versus minority rules, existing versus new causes of action and theories of liability, and the invocation of equitable remedies in one case but not another, all as they apply to the current activity (case), the novice gains more generalized knowledge about our legal community and jurisprudence. Where as in medicine, as the novice and master take account of the Standardized Patients[142] versus the clinical outlier cases, existing standards of care versus emerging scientific evidence which informs best practice, and the invocation of experimental treatment in one case but not another, all as they apply to the current activity (case), the novice gains more generalized knowledge about our medical community and the art of practicing medicine. The novice gains a rich contextual understanding of when various subject-object interrelationships may be relevant to a case, even if their utility is limited in the case. Moreover, through delineating the boundaries of which subject-object interrelationships may be relevant to the case from those interrelationships that may not be, the novice develops cognitive generalizations beyond the case and current practice setting. In summary, through activity generalization, practitioners can acquire broad-based experience in a particular practice setting to arm them with, at least, the minimum level of competency.

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[141] *Id.*

[142] *See* Ass'n of Standardized Patient Educ., *Definition of an SP*, http://www.asp educators.org/sp_info.htm; *see also* Stanford Univ. School of Medicine, *Standardized Patient Program*, http://ome.stanford.edu/spp/.

They can incorporate that experience into other entry-level practice settings.

Another useful application of activity theory includes Mary Reilly's use of activity theory in the field of occupational therapy to treat individuals with physical, cognitive, mental, and psycho-social disabilities. As an eminent scholar in the field, Mary Reilly said, "Man, through the use of his hands, as they are energized by mind and will, has the ability to influence the state of his own health."[143] Reilly's quote carries the powerful message that we know to be true from our experience. Reilly, and the field of occupational therapy, generally, holds that participation in purposeful activity is the primary means by which a disabled person regains function and independence. By engaging in meaningful, purposeful activity we restore our health status. Law and medical students lack restorative, healthy experiences. The notion that students who engage in practical experience may experience greater satisfaction, newfound interest and commitment, better classroom attendance, less depression or anxiety, and improved ability to sleep may be a concept worthy of research.

In summary, activity theory departs somewhat from ecological psychology, situated learning, and historical-cultural approaches, all of which focus on the didactic nature of the individual-environment relationship as their foundation. Activity theory recognizes that the individual-environment relationship as only one component of a much more complex, dynamic connection of interrelationships between subjects, objects, and mediating tools, nested within physical, psychological, social, and historical contexts. While the complexity of this theory complicates our ability to distill how learning occurs, activity theory more accurately captures the reality of describing the system in which novices must learn.

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[143] Calista Henderickson and Stephanie Lesser, *Building on Possibilities*, 21 Advance for Occupational Therapy Practitioners 23 (quoting Mary Reilly), *available at* http://occupational-therapy.advanceweb.com/Editorial/Content/Print Friendly (last visited Feb. 4, 2009). As is often the case, this occupational therapist carries Mary Reilly's quote in her heart.

E. Applying Ability and Talent-Development Theory to the Legal Practicum and Medical Residency

The central assumption underlying talent development is that "ability is not a trait existing within an individual, but instead is a description of entire systems through which some individuals appear to be talented."[144]   Still in its infancy, talent-development theory is evolving from the socio-cultural theories which are rooted in understanding the nature of individual—environment relations, as opposed to traditional education and psychology theories of learning. Instead of viewing talent as an individual's inherent trait, this theory characterizes ability or talent as a "set of functional relations distributed across person and context, and through which the person-in-situation appears knowledgeably skillful."[145] As such,

> [t]he responsibility of the educator is to establish contexts for learning that support individuals in becoming more adept at functioning as part of multiple systems.   Although content knowledge is necessary for successful participation, educators must place increased emphasis on the context through which talented transactions are engaged and on increasing the potential of individuals to engage in these transactions. Through participation in learner-owned interactions, students come to participate in, and even create, situations through which they appear talented and excellent.[146]

The distinctive feature of talent development theory is its conceptual framework of *learner-driven interactions* which drive the acquisition of knowledge through talented experiences, as compared to the passive-learning model where the student must accept the course outline handed down by the professor. Here, the learner is actively engaged in setting the course of knowledge acquisition. While it may be true that the learner comes to own the interactions derived from goals either the

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[144] *Id.* at 175.
[145] *Id.* at 176.
[146] *Id.* at 174.

learner creates or merely participates in creating, the learner is more likely to demonstrate talent when he or she creates, and therefore, truly owns the interaction.

In summary, Talent-Development theory still in its infancy is a hybrid, which builds upon some components of the other four contemporary theories. "The central challenge for educators is to develop participatory structures that bring together the individual, environment, and socio-cultural relations"[147] to maximize the individual's ability to appear talented. Talent development theory is unique in its focus on the educator's role as a "regulator" of the environment, tools, and context to maximize the student's performance in a specific task.

As applied to the legal practicum and medical residency, academic educators and institutions play an essential role in creating contexts where students are afforded the opportunity to develop talent. Talent-development theory supports the notion that knowledge acquired through self-developed, rigorous, hands-on, academic instruction is necessary to participate in the professional field. Academic educators support the potential for learner-owned interactions by employing a tool to identify learner-owned talent opportunities. The student who uses a tool effectively creates learner-owned goals, which in turn lead to situations where he or she can appear talented or excellent. Therefore, master practitioners and guide masters should exercise caution when trying to direct the course of goals the student chooses as a means to develop talent. The key to creating the next appropriate learner-owned talent opportunity demands an understanding of how to structure the next contextual experience to expose the next burst of talent which is realized through introspective assessment of recent talented experiences. Simply put, this theory embodies the notion of "The Just-Right Challenge" which maximizes the novice's opportunity to display his or her talents. "Drawing on his expertise, the educator is responsible for initiating the students into those practices and meaningful relations that are reflective of the types of relations occurring in the culture at large."[148]

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[147] *Id.* at 176.

[148] *Id.* at 175 ("Student-owned—not textbook-or teacher-owned—interactions provide meaning and value to the subject matter, and build connections to the student's

II. THE TEACH COMPASS™

"[S]tudies have long piled up evidence that most actual learning of the practice of a profession takes place on the job, which is to say within a context of practice rather than a classroom. This inconvenient finding spurs periodic educational innovations, such as simulation of practice experience within a controlled environment, to bridge the gap between the cognitive command of ideas and practical mastery of technique and judgment."[149]

The ideal type of modern university that emerged in the 1960s embodied "positivistic dogma" which "sharply distinguishes facts from values as it segregates generation of knowledge from its application, the theoretic from the moral-practical."[150] This regime of positivism stands in the way of developing an effective response to contemporary challenges of preparing professionals to practice.[151] "The continuing hold of positivistic dogma over the thinking and practice of higher education is a key problem that must be confronted by anyone who concludes that the needs of our time demand a reshaping of professional knowledge as well as how professional life is organized."[152]

What, then, must happen if the limitations of the reigning [positivist] dogma are to be transcended and professional knowledge is to be organically connected to the historical needs of our time?

> The critical step in this direction lies in rehabilitating non-formal modes of rationality that do not screen out the practical, moral, and historical standpoint of both the subjects and objects of knowledge . . . . This means rediscovery of practical

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life and activity more generally."); *see also* Jean Lave, *The Culture of Acquisition and the Practice of Understanding, in* SITUATED COGNITION: SOCIAL, SEMIOTIC, AND PSYCHOLOGICAL PERSPECTIVES 17, 17-36 (David Kirshner & James A. Whitson, eds., Lawrence Erlbaum Associates, Inc. 1997).

[149] Sullivan, *supra* note 22, at 198.

[150] *Id.* at 236.

[151] *See id.*

[152] *Id.*

rationality, or what cognitive scientists identify as "narrative thinking.[153]

The positivist model is most stridently criticized for "ignoring the fact that all inquiry takes place as part of an engaged social practice."[154] The pragmatist philosophers hold that "knowledge results from inquiry, and inquiry is always a response to a perplexity that interrupts an ongoing practice . . . guided by some end or purpose. This purpose derives in part from the character and identity of the investigator."[155] In turn, the "character of the investigator derives its focus from participation in a community of sharing certain values."[156] Simply put, the "pragmatic approach directs our attention to knowing and inquiry as human activities that we are engaged in ourselves even as we ask these questions."[157] Therefore, professional practice "always involves cognitive movement between the detached stance of theoretical reasoning and the highly contextual understanding typical of engaged expertise."[158]

> Our need is for a broad view of how the various aspects and tensions of the professional enterprise hang together. In other words, we need a theoretical perspective to illuminate and try to explain events such as the undermining of accounting's public trust. But our purpose in doing so is ultimately practical. It is because we want to rescue and renew the positive potential of professionalism.[159]

A. *Finding Your Way—The Lessons of Experience*

Story-telling is a powerful learning tool. In fact, a large portion of legal and medical education rests upon imparting knowledge through

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[153] *Id.* at 242.
[154] *Id.* at 243.
[155] *Id.*
[156] *Id.*
[157] *Id.*
[158] *Id.*
[159] *Id.* at 51.

story-telling, better known as the case method or case studies. Here, a narrative is used to convey the transforming experience one may undergo on the journey toward professional development. Orienteering in the dark is much like the challenge of navigating legal or medical practice at the outset. Therefore, my personal experience of this skills test during an Outdoor Survival Weekend[160] is intended to serve as a guidepost to those who face challenging situations and overcome obstacles on their journey.

The guide master[161] grouped us in pairs, with one novice and one experienced trail-blazer per team. She told us to gather two canteens of water, two energy snacks, two flash lights with new batteries but no back-up batteries allowed, a Swiss Army knife, and one compass. Additionally, the guide master supplied each of us with a "rape horn," instructing us to use it only in the event of a serious emergency. Upon sounding your "rape horn," you must know that SWAT Rangers will be immediately dispatched via helicopter to extract you from the woods, she explained. Just after dusk, each team is dropped in a different location deep in the woods of Ozark Mountain country. The guide master handed my team the following instructions on an index card: "Travel due northeast until you meet a white gravel road. Take the white gravel road due southeast until it forks. At the fork, set your compass due southwest and travel until you reach the stream. Traveling near the bank, head up stream until you reach the base camp. When your team reaches the base camp, you have succeeded."

The time is now 8:00 p.m., it is pitch dark, the moon is almost full, the stars are shining bright against the clear sky, the temperature is about fifty degrees, and the leaves have begun to fall from the trees. While orienteering at night, in pairs of two, the most effective method for staying on course is playing "leap-frog." Leap frog is a method where one member of the team sets the compass, in this case due northeast, then holds the flashlight under the compass, and points the

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[161] The term "guide master" is created and adopted to refer to the special class of academic educators charged with oversight and management of the legal practicum and medical residency.

light in the same direction as the needle on the compass. The light will inevitably shine on a tree since the woods are so dense. One member of the team will leap ahead to reach the target tree, while the other team member remains behind shining the light on the target tree. Only after the first member reaches the target tree by blazing ahead alone, will the light-shedding member leap to catch up.

As you begin this process, you both realize that there are other decisions you must make. Even the experienced member of your team has only been orienteering in the daytime in a team of four, so the challenges presented in this situation are somewhat different than prior experience. You must decide whether the trail-blazer should burn the second flashlight as he or she forges ahead, and when the light-shedder is catching up. You start wondering how long your journey will take, how long your flashlights will burn, and realize that you were not told how long you would be in the deep woods. A bit of fear of the unknown sets in as you realize that you don't know how long it will take to succeed in finding the base camp. Together, you decide to conserve your resources and burn just one flashlight at a time. You know this is the right decision, but as you implement this decision, you realize it has its drawbacks as well. The trail-blazer is forging through the thickness of the brush, fallen leaves and branches, with nothing to light the path, only a beam shining on the target tree. Leaping ahead in the darkness requires courage, a keen alertness, and an agile posture over the unsteady terrain. Staying behind as light-shedder bears its own unique experience—technical accuracy in finding a good target, determining how far ahead that target should be, waiting patiently as your partner reaches the target, and the growing sense of loneliness as your only human contact slips away into the darkness.

While you both know that playing leap frog is the most effective method for accurately staying on course, it is very slow-going and is starting to take its physical and emotional toll on you as the night wears on. Together, you decide to modify the method. You agree to set the compass, shine the light, and walk together toward the target tree. This feels better. The loneliness and fear of the night start to subside as you find friendship while traveling together. The light-shiner realizes that maintaining the beam on the target tree is much more difficult while navigating over the rugged terrain and talking. You find

yourselves heading in the general direction in which you shined the light and checking your compass more frequently because maintaining the target it more elusive while walking. Finally, one of you expresses concern about not hitting the white gravel road yet and questions whether traveling together might be throwing you off course. Together, you agree to resume the playing leap frog.

Together, you reach the white gravel road at 11:30 p.m. and you're ecstatic. You did it together! You quickly check your compass to see which direction is southeast. Fabulous! You head straight down the gravel road. You are walking briskly now, no need to check the compass until you hit the fork in the road. Just the physical space around your body created by the road, pushing the trees back into the woods, allow you to breathe easier. The rhythm of your pace, the speed of your progress, and the joy of your success, are all celebrated together.

Suddenly, you reach the fork in the road, and the path you are directed to take is neither left nor right, but rather due southwest. Yes, it is time to set your compass and head back into the woods. You swell up with emotion as the thickness of woods seems to invade your space. Together, methodically, you start playing leap frog again. It is not long before your first flashlight grows dim, too dim to reach the target tree, so you begin to burn the second flashlight. Again, trail-blazer and light-shedder are working in tandem to achieve the goal. As the light-shedder aims for the next target, the beam shines brilliantly on an enormous spider web. It must be four feet wide. The amazingly intricate web is covered with drops of dew, sparkling in your light. A large fury spider sits dead-center in his web. You usually don't like spiders, but strangely enough, you're happy to see something besides your partner, the moon, and the endless sea of trees. Even though the web is blocking your path toward your next target tree, you decide not to destroy something so beautiful. Together, you realize that it is okay sometimes to be thrown a little off course.

Fatigue is setting in. The time is now 1:18 a.m. Wolves begin howling in the distance. It is almost impossible to pinpoint the direction of the threat because their howl is bouncing off the mountainside. You are glad you have your rape horn. You feel for it against your chest, reassured that it still hangs around your neck, even

though you've felt it bumping against your chest with every step since your journey began. You don't want to be the team that calls in the Rangers, so you vow not to sound the alarm unless the threat becomes imminent.

The night is wearing on, and it is now 2:37 a.m. You never thought the guide master would leave you in the woods so long. The goal of finding the base camp starts to feel unattainable. Your senses are getting dull, the sounds of the night are impinging on your emotions, and the darkness of the night instills a sense of anguish. Together, you both start questioning the reliability of your compass. Surely, we should have reached the stream by now. You begin thinking through lessons learned in your orienteering handbook. First, you remember that the compass never lies. The compass is a reliable instrument, gaining its direction from the unwavering pull of the North Pole. This theory is sound. It will be questioned by those blazing trails, but this theory remains well-settled. Second, you remember the anecdotal story about people getting lost in the woods, traveling in circles, in their attempt to follow the moon, and realize the futility of relying on the moving target of the moon to direct your path. Third, you learned that the eastern hillside, as a general rule, has denser underbrush than the western hillside. As you compare the two for the first time, one hillside does seem denser than the other. This information, along with your reliable compass, provides reassurance that you are traveling in the right direction of your ultimate goal.

As you continue playing leap frog through the dark, you see a sign of an expert who has gone before you. A large "X" is blazed into a tree. This is an unmistakable sign, carved by the guide master, to renew your sense of hope and conviction that you are heading the right direction. Someday, when you have the expertise, you will confidently use your Swiss Army knife to blaze the trail and instill hope in other travelers. The time is now 3:24 a.m. Even though you are physically weary, the "X" brightened your emotions and gives you the energy to press on.

Now, you can finally hear it. The dancing sounds of fresh water rolling over rocks in the distance. With your second flashlight now growing dim, together you decide to turn it off and walk side by side in the darkness letting the sound of the stream serve as your guide. In no

time, it seems, you reach the stream. You are overjoyed! This is worth celebrating! You are laughing, and crying, jumping up and down, and absolutely confident you are going to achieve your goal.

Together, you walk upstream along the bank. You are talking, reflecting on the events of the night, and sharing the glory of knowing that you did it together. Suddenly, you realize how accustomed you've grown to the darkness of the night and the thickness of the woods. The shadows of the moon and sounds of the wolves no longer play on your emotions. You have experienced all of it. And, the fear of the unknown is gone.

As the terrain becomes a steeper uphill climb, you and your partner occasionally find yourself placing your hand on a rock or branch to maintain control. Almost simultaneously, you gasp and cry out to each other as you see the glow of the base camp in the distance. You are scrambling uphill faster now. As you reach the site, the camp is lit by make-shift luminaries from cut open milk jugs filled with candles all aglow. There is your guide master, sitting atop a large bolder, and two other teams to greet you. You exchange stories about your experiences and wait for the other three teams to arrive. The guide master leads the ceremony where everyone receives their award in commemoration of their success. Congratulations, you did it!

As applied to the legal practicum or medical residency, a story, such as *Finding Your Way—The Lessons of Experience*, narrates the symbolic experience demonstrating how members of our professional communities collectively support novice practitioners' acquisition of core competencies. The symbolic nature of the story creates a fluid means for members to internalize the script of their unique situated learning experience. In turn, communal sharing of those rich experiences, possibly through a hosted website, deepens our level of understanding of how novices come to know about law or medicine. A detailed listing of thirteen symbolic experiences embedded within the narrative is shared below to elaborate upon how symbolism is used to give meaning to experience.

Novice practitioners might internalize at least some of the thirteen external symbolic representations through their unique contextualized learning experience as their own unique personal symbolic representation. The external symbolic representations are as follows:

Sounding the Horn in the event of an Emergency; Playing Leap Frog in the Night; Burning just one Flashlight; Modified Leap Frog—Walking Together; Running Together on White Gravel; Dew-covered Spider Webs; Wolves Howling in the Distance; Questioning the Compass's Reliability; Lessons Learned from your Handbooks; Blazing "X's" on Trees; Finding your Fresh Water Stream; Growing Accustomed to the Night; and, Sharing Stories back at Base Camp. A website could host chat rooms, topically organized to address each representational symbol, where novice practitioners (anonymously, if preferred) are encouraged to post their unique symbolic representations to the shared community of practice.

B. The TEACH Compass™ Map

The ABA through its MacCrate Report and the ACGME through its Outcome Project have enumerated a list of competency skills, values, and behaviors that every novice practitioner should develop before handling a case.[162] The *TEACH Compass™ Map*[163] ("Map"), tailored for each profession, is intended to create a framework through which novice and master can organize and structure the learning process to facilitate acquisition of knowledge. The Map serves as the guide for students to learn and internalize the fundamental skills and values identified by the ALI/ABA and ACGME, respectively, across the wide breadth of practice settings in which novices gain experience. Please review Appendix A now. The TEACH Compass™ Map is the tool, or artifact,[164] which provides the structure and direction for students to set performance goals and to transform themselves into competent novice practitioners under the guidance of a master practitioner, and guide masters (academic educators).[165] While the Map

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[162] ABA, MACCRATE REPORT, *supra* note 18, at 123-221; *Outcome Project, supra* note 20.

[163] *Infra* Appendix A.

[164] *See supra* notes 89-95 and accompanying text.

[165] *Infra* Appendix A; *see* ABA, *supra* note 18, at 131. The Task Force concluded that the "law schools and the practicing bar must share the responsibility for giving new members of the profession the training needed to practice competently. This training is best provided through a combination of law school education and

provides comprehensive and specific feedback in a formal manner by the master practitioner mid-way through (Formative Assessment) and upon completion (Summative Assessment) of the practical experience, the Map is intended to serve a much deeper purpose. The Map is the instrument which provides the novice practitioner with direction and focus in setting their goals to gain core competencies. Students tailor their goals by incorporating various core competencies into their specific practice settings, taking account of their relative strengths and areas for improvement. The TEACH Compass™ is, in many respects, to be used like a real compass by a hiker who is orienteering in the wilderness.[166]   The TEACH Compass™' Map is to be checked frequently, for it faithfully guides you in the right direction.

Next, a common understanding of how to evaluate the novice practitioner's performance must be established. The TEACH Compass™' Map is constructed with a five point rating scale. The challenge here is creating a common understanding of what assigning a score of "1" or "2" and so on means, so as to establish inter-rater reliability in the scoring methodology. Some medical program faculty who have implemented the Likert scale[167] to assess residents' skills have found little consensus among themselves about what a "2" or a "5" meant.[168] While "behavioral anchors"[169] may improve inter-rater reliability somewhat, creating such descriptors for each subcomponent of each competency skill seems cumbersome. Moreover, pinning down a competency skill with behavioral attributes may inevitably narrow the fullness of attributes the skill is intended to encompass, thereby affecting the validity of the score. A promising alternative is distilled from the Dreyfus model whereby a "1" = novice; "2" = advanced beginner; "3" = competent; "4" = proficient; and "5" = expert.

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opportunities for learning outside the law school environment." ACGME, *supra* note 21 (mandating medical residency in accordance with Outcome Project objectives).
[166] *See supra* Part II, subsec. Finding Your Way—The Lessons of Experience.
[167] *See* William M.K. Trochim, *Scaling* (2006), http://www.socialresearchmethods. net/kb/scaling.php.
[168] B. JOYCE, DEVELOPING AN ASSESSMENT SYSTEM (2006), http://www.acgme. org/outcome/e-learn/FacManual_module3.pdf.
[169] *Id.* Behavioral anchors are brief behavioral descriptions of the five point numerical ratings.

The "Dreyfus model[170] proposes that learning-embodied skills proceeds through five stages. In the first, the *novice* stage, "there is no perceptual grasp or ability to interpret a situation as whole. Instead, the novice must learn to recognize certain well-defined elements of the situation and apply precise and formal rules to the elements, regardless of what else is happening."[171]

> Following the rules allows gradual accumulation of experience. But to progress, the student . . . has to start noticing features of the context . . . which occur outside the rules.
>
> The second stage, *advanced beginner*, marks the point at which the learner can start to think by analogy to past experience . . . The advanced beginner, [however], is still heavily dependent upon . . . formal procedures and elements defined independently of context.[172]
>
> The third transition is to a level of *basic competence*. This development is triggered when the amount of accumulated situational information starts to overwhelm carrying out the rule-governed procedures. What saves the competent performer

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[170] Juxtaposed against positivist dogma (the assumption that practice can simply be reduced to applied theory) is the Dreyfus model of expertise. *See* Sullivan, *supra* note 23, at 247 (citing Hubert Dreyfus and Stuart Dreyfus, with Tom Athanasiou, Mind over Machine: The Power of Human Intuition and Expertise in the Era of the Computer (New York: Free Press, 1986)). "In all cases, they argue, the progression is the *opposite* of the common belief that learners simply move from concrete examples toward gradually more abstract conceptions. In contrast, the work by the Dreyfuses tries to show that mature skill acquisition moves *from* a distanced manipulation of clearly delineated elements of a situation according to formal rules *toward* involved behavior based upon an accumulation of concrete experience. The evolution here works through the gradually developing ability to see analogies, to recognize new situations as similar to whole remembered patterns. Expertise means a learned ability to grasp what is important in a situation without proceeding through a long process of formal reasoning. Sometimes called expert "intuition" or "judgment," it is the goal of training for practice in the mode of apprenticeship."

[171] *See* Sullivan, *supra* note 23, at 247 (citing Hubert Dreyfus and Stuart Dreyfus, with Tom Athanasiou, Mind over Machine: The Power of Human Intuition and Expertise in the Era of the Computer (New York: Free Press, 1986).

[172] *Id.* at 248.

from situational overload is discovering a goal. (The novice is often too beset with remembering and carrying out context-free rules to think about purpose at all, or in imaging a goal he or she may attempt things a competent performer knows from experience to be impractical.).[173]

The new capacity is the ability to judge that when a situation shows a certain pattern of elements . . . then a certain conclusion should be drawn and a particular way of behaving put into effect. The ability to choose a goal or plan, however, is quite difficult for the competent performer. At first, performers at this stage may need to think in a self-consciously analytical way about the situation, problem-solving by testing and eliminating options . . . However, as competent learners gain experience and self-confidence, they rely *less* on conscious weighing of choices when sizing up a situation and deciding what to do. They gradually learn to draw analogies between a current situation and whole situations remembered from past experience.[174]

The fourth stage is *proficiency*. It marks the point at which the learner is able to make holistic, so-called intuitive judgments, interpreting whole situations on analogy to past ones without having to decompose them into abstract elements for processing. This is a skill the novice utterly lacks. Although the competent performer has to consciously choose a purpose to order perception and judgment, proficiency means that this judgment seems effortless, as a kind of intuitive perception.[175]

Finally, the . . . fifth stage of *expertise* is reached when a person is able to hit the mark dependably without either working through complex problem solving or devising an explicit plan. Since this level of performance cannot be fully reduced to rules and context-free procedures, it often appears to the novice, the layperson, as a kind of magical know-how.

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[173] *Id.*

[174] *Id.*

[175] *Id.* at 248-49.

It is in fact the result of long training and practice in which feedback and coaching are essential.[176]

Experts are acting not on guesses but on perceptual grasp and the ability to make qualitative distinctions gained through experiential learning. Expert judgment is achieved through experiential learning. But this is not a cognitive either-or. Experts also need to reflect and deliberate, especially when confronting difficult or strikingly novel cases and situations. Then they typically engage in deliberative thinking, looking for other explanations or different understandings of the situation . . . Such reflection may employ analytic techniques precisely to try out different analogies or perspectives in a conscious process, so as to suggest new or forgotten possibilities . . . The expert's knowledge is well grounded in the subtleties of experienced distinctions and analogical reasoning achieved through a long apprenticeship to more expert practitioners. In this process of learning, formal models and rules play an essential role, as the Dreyfus model stresses, but the formal models are themselves practically based. Put another way, in the teaching and learning of expertise, practice is often ahead of theory.[177]

While the master practitioner formally scores task performance using the TEACH Compass™ Map at mid-term and final, novices use the Map every week to guide their goal-setting. The novice is also encouraged to score the Map himself or herself at mid-term and upon completion of the practical experience, before meeting with the professor, as a form of self-assessment. The novice should not routinely be expected to share his or her self-assessment with the master practitioner, but he should share his assessment when there are wide discrepancies or other concerns. Some educators, however, may determine that a novice's accurate self-assessment is itself an important skill and as a result ask every novice to submit his or her self-assessment for each practical experience.

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[176] *Id.* at 249.
[177] *Id.* at 249-50.

C. Setting Goals

Learning how to set professional goals for oneself is, in itself, a goal of a novice practitioner. As such, an integral part of the practical experience necessarily involves teaching novices how to set professional goals. Novice practitioners will learn to develop goals individually tailored to their specific practice settings by incorporating various core competencies, taking into consideration their current strengths and areas for improvement. Teaching the performance skill of effective goal-setting is accomplished by breaking down a professional goal into its essential parts, then examining each part in turn. An effective self-set competency-based goal includes: a performance standard (how the learner thinks or what the learner will do); a competency skill; a measurement of success; the tools, media, activities or curriculum; and the motivating force.[178] Novice practitioners, therefore, must learn how to set their own professional goals.[179] Novice practitioners will learn to develop goals by incorporating various core competencies, taking into consideration their current strengths and areas for improvement.

The practical experience involves teaching novices how to set professional goals.[180] Teaching the performance skill of effective goal-

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[178] I practiced occupational therapy for ten years prior to joining the legal profession. The discussion of goal-writing is a compilation of my personal academic and practical experience and, therefore, is not traceable to any specific source material. Consequently, credit is not given to any single source or author. The credit owed is generally to the profession of occupational therapy. The ACGME's use of the term "objective" appears to be equivalent to the term herein called "short-term goals," whereas, the ACGME's use of the term "goals" appears to be equivalent to the term herein called "long-term goals." *See also* B. JOYCE, DEVELOPING AN ASSESSMENT SYSTEM (2006), http://www.acgme.org/outcome/e-learn/FacManual_module2.pdf.

[179] MacCrate Report, *supra* note 19, at 141, subsec. Fundamental Values of the Profession § 4 Professional Self-Development. "As a member of a learned profession, a lawyer should be committed to the values of: 4.1 Seeking Out and Taking Advantage of Opportunities to Increase His or Her Knowledge and Improve His or Her Skills."); ACGME, *supra* note 20, at subsec. Practical Implementation, slide 12.

[180] *See infra* Appendix B.

setting is accomplished by breaking down a professional goal into its essential parts, then examining each part in turn.

Novice practitioners must learn how to set long-term goals (LTGs) and short-term goals (STGs), including appropriate time frames, to gain minimum competency to practice law or medicine. Long-term goals should be goals that novices can meet by the end of their practical experience in one practice setting. Short-term goals should be goals that novices can meet within one or two weeks. Short-term goals serve as incremental steps toward meeting the related long-term goal. It follows that for each long-term goal, there should be a series of short-term goals, which are sequentially written as the weeks pass by, as steps directed toward achieving the long-term goal. The specific task to be performed or the experience to be had should draw from the TEACH Compass Map.[181] As such, the Map is designed to serve as an effective tool to organize and guide goal-setting to attain those core competencies demanded of most novice practitioners.

Goals should be specific and measurable because this organizes and guides performance, and because it celebrates successful performance regularly along the journey toward achievement of competence. Every novice practitioner has the capacity to set professional goals with the appropriate level of support and guidance by academic educators and master practitioners.[182] Furthermore, successful goal-setting proves that learning how to set goals has occurred. If students cannot successfully set goals, they may need additional support, advice, input, and structure from academic educators and master practitioners.[183] After all, learning

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[181] MacCrate Report, *supra* note 19, at 125 ("Different lawyers will emphasize different skills, and practitioners will often be concerned with matters outside the scope of the Statement [of fundamental skills and values], such as attracting and retaining clients. The statement is concerned with what it takes to practice law competently and professionally."); ACGME Outcome Project, http://www.acgme. org/outcome/comp/compMin.asp (last visited Jan. 29, 2009) (listing the six competencies with key components for a medical residency).

[182] *See infra* Appendix B. Novice practitioners are encouraged to use the *Aid to Goal-Setting* along with the support of their master practitioners or guide masters as needed.

[183] From personal experience, even acutely ill schizophrenic patients are able to set goals with adequate assistance from an occupational therapist. For example, a delusional paranoid schizophrenic patient was able to set the following goal with

occurs when novices receive a sufficient amount of support to enable them to achieve their learning goals.[184] The creation and maintenance of an on-line "Goal Bank" containing sample goals addressing various core competencies in a wide variety of practice settings may serve as a valuable learning tool to novice practitioners, master practitioners, and academic educators alike. Because learning to write effective goals is a learning goal, employing the learning method of observing how effective goals are drafted through a Goal Bank database supports basic principles of learning theory. Determining, however, whether peer students can assist fellow students in learning how to set professional goals is beyond the scope of this paper, but an examination of peer learning models may warrant further study.[185]

D. SHINE notes

If democracy's promise of human dignity and community was to be redeemed in the new conditions, Dewey was convinced that the spirit of reflective inquiry he identified with science had to play a major role in everyday life. As a leading pragmatist, Dewey contented that thinking was itself a kind of doing, a mode of action. It followed that, like any skill, thinking could be learned and practiced only in appropriate social contexts.[186]

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some assistance: *the CIA will not contact me via the embedded chip in my arm more than once an hour.* The patient, committed to the goal that he set, was able to control his broadcast hallucinations and focus on more purposeful activities. Therefore, if novices are not successful in setting "good" or appropriate goals, then academic educators and master practitioners are encouraged to provide more assistance.

[184] Some organization may be assigned proprietary rights of oversight and research development with regards to the goal bank and other web-based components of this learning model.

[185] *See* Lorenz, *supra* note 69. Studies by Rogoff and others suggest major differences in how adult-child versus child-child interactions are organized and influence cognitive development. Preliminary studies indicate that adult-child interactions are superior in fostering planning skills, but child-child interactions (peer interactions) are superior in fostering paradigmatic shifts in perspective.

[186] Sullivan, *supra* note 23, at 109.

As such, every week, students should reflect thoughtfully about the direction in which they are heading; recognize and celebrate small achievements when short-term goals are met; modify goals to reflect changes in circumstances, expectations, or possibilities; and set new short-term goals, which eventually lead to achievement of long-term goals. The acronym SHINE, which serves as the structure for organizing weekly progress notes,[187] harkens back to the narrative, entitled *Finding Your Way—The Lessons of Experience*, where operating the compass and shining the light kept the team on the right path. The purpose of the SHINE note is three-fold. First, SHINE notes require novices to assume responsibility in directing their learning, to reflect upon and internalize their experiences, and to recognize when and how learning to practice their profession occurs. Second, SHINE notes facilitate the master practitioner's capacity to teach novice practitioners through defining the framework, context, and process in which skill acquisition occurs. Third, SHINE notes provide meaningful feedback to guide masters (academic educators) about the novices' learning experience who, in return, can offer better support and guidance to them and better insights to the community of educators about how they learn.

The SHINE note is designed to structure and organize the novices' thoughts and written communication into five areas of discussion about their progress toward achieving core competencies.[188] That is, Salient impressions, Happenings, Introspection, Next steps, and Empowerment, are the elements of the weekly SHINE note from which the acronym is derived. Each element of the note is now discussed in turn. Salient impressions are those subjective reactions to an experience that the novice finds to be important, remarkable, or striking in nature.[189] Salient impressions create an imprint or fix a stamp in our mind which

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[187] *See infra* Appendix C.

[188] Special thanks to Professor Jena Matzen for sharing her insights about student-externship journals and her personal belief that providing structure for journal entries enhances learning. Furthermore, structured progress notes facilitates communication with guide masters and master practitioners alike, which in turn increases the novice's opportunity to achieve their goals.

[189] RANDOM HOUSE WEBSTER'S ENGLISH LANGUAGE DESK REFERENCE 285 (Enid Pearsons, Constance A. Baboukis, & Alice Kovac Somoroff eds., 1997).

establishes a cognitive trace to our mental and emotional experiences.[190] Reflecting upon and documenting one's salient impressions serves as one method for internalizing experiential learning. Happenings are those events which take place[191] where the facts and circumstances that surround that event put it into context.[192] Understanding the context in which an event occurs, underpinned by its unique set of facts and circumstances, is fundamental to learning.[193] After novices examine what happened under a certain set of circumstances, they improve their capacity to generalize their knowledge to a similar, but somewhat different set of circumstances, in the future.[194] Additionally, examining what happened under a certain set of circumstances serves as a basis for them to analogize and distinguish this event from historical events. Introspection is a process of gaining self-awareness about how our mind works.[195] Introspection is a method we use to evaluate and learn from others' experiences as well as our own.[196] Simply put, introspection allows novices to evaluate each of their goals one by one, and assess whether learning has occurred. As a result, they conclude whether the goal has been met and a new goal should be set, or the existing goal requires modification to be met, or the existing goal needs to be discontinued for some reason. The essence of introspection is surmised as follows in the words of Henry David Thoreau, "I know of no more encouraging fact than the unquestionable ability of man to elevate his life by conscious endeavor."[197] As such, thoughtful reflection is a means to elevate our understanding of our human experiences. Next steps is designed to serve as an organizational tool for identifying preparatory actions that are directed toward meeting the next week or two's short term goals. Think of it as the administrative detail, or a to-do list. Efficient

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[190] *Id.* at 467.

[191] *Id.* at 239.

[192] *See supra* text accompanying notes 65-75.

[193] *See supra* text accompanying notes 65-75.

[194] *See supra* text accompanying notes 87-131.

[195] STEPHEN R. COVEY, THE 7 HABITS OF HIGHLY EFFECTIVE PEOPLE 66 (Simon & Schuster 1990).

[196] *Id.*

[197] *Id.*

organization and management skills are part of the essential competencies novice practitioners should be familiar with to practice effectively.[198] Novices may identify the system or procedure necessary for them to ensure that time, effort, and resources are allocated to effectively complete their work.[199] Empowerment is an enabling function of learning in which novice practitioners define their authority and capacity to act. Empowerment is a can-do attitude coupled with the celebration of achievement. In summary, the SHINE notes serve a broader purpose than providing direction and organization of goals, and even broader still than communicating those goals to master practitioners and academic educators as a mechanism to enlist their guidance and support. The SHINE note, in itself, is a valuable learning tool for novices who are engaged in gaining practical experience in law or medicine through reflective thinking.

III. CONCLUDING REMARKS & DIRECTIVES FOR SCIENTIFIC RESEARCH

In a democratic society, professional legitimacy is always precarious because it can be secured only so long as a general balance is maintained between the kinds and degree of professional privilege and the public's perception that professional services contribute significantly to the public welfare.[200]

Reconceiving professional expertise under the guidance of an understanding of practical reason reveals the importance of experience and service to the professional enterprise . . . . Because real expertise is never entirely separable from a community of practice, it is never fully purified of social and moral engagement. Thus its contemporary institutional expression may well be partnership among organizations united in an effort to respond to the problems and possibilities of society. This kind of cooperative approach necessarily promotes practitioners and the affected community into a situation of dialogue with theorists in the academy . . . . This reorientation requires that

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[198] MacCrate Report, *supra* note 19, at 140; ACGME, *supra* note 21.

[199] *See* MacCrate Report, *supra* note 19.

[200] Sullivan, *supra* note 23, at 183.

faculty and practitioners overcome mutual distrust so they can share jointly in reshaping their professional discipline away from fixation upon a rigid body of established knowledge into a more supple and interactive network of investigators. If they were to take such a goal seriously, ours could be a time of much-needed reshaping of the organization and rewards of disciplinary knowledge and research. The concerns of research in the academic fields would expand naturally to include more interest in both practice and pedagogy.[201]

The learning model proposed herein, *The TEACH Compass*™, rooted in a new theory called *Translational Education*™[202] is designed to: improve our understanding of how pedagogy translates into performance within professional practice settings; serve as a set of tools to facilitate the learner's acquisition of competency skills and ethical behaviors; create a learning model amenable to empirical data collection through scientific research methods; and, subsequently supply academic institutions with aggregate data to better inform their educationally-based quality improvement initiatives.[203] The TEACH Compass™ Map may improve our understanding of how pedagogy translates into practice because the design of the Map tools lends itself to empirical scientific research. Within the Map, the numerical system (i.e. "3.7. Key Competency: Use Information Technology to Optimize Learning" and 3.7.1. STG: defining the first short-term goal, and 3.7.2. STG: defining the second short-term goal, and so forth), lends itself to aggregate data collection via an electronic database on each core competency and ethical behavior. Each fundamental skill or key competency's long-term goal and related incremental short-term goals

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[201] *Id.* at 255-56.

[202] *Infra* Appendix A. *Translational Education*™ is a new applied life science theory, created herein, which seeks to understand how academic knowledge as defined through education standards impacts competent performance, and in turn, how competent performance informs the development of academic knowledge. Translational Education applies theories from neuroscience, psychology, sociology, philosophy, occupational therapy, and the study of cultural competency, to goal-directed learning behavior, driven by regulated academic standards, in a setting where the learner is supported to acquire and apply knowledge through other persons, objects, environments and contexts so that knowledge can be generalized across settings and supports optimal performance.

[203] *Infra* Appendix D.

can be isolated as discreet data points that can be tracked, measured, and statistically analyzed. Additionally, the language or words used in the short-term goals, long-term goals and SHINE notes can be analyzed with bio-statistical research methods, linking behavioral anchors (or word descriptors) to various elements of each of the five contemporary cognitive theories, and then applying statistical regression analysis, to scientifically inform our understanding of how pedagogy translates into performance of professional competency skills and behaviors. As such, aggregate, numerical, and bio-statistical data may reveal how novices developmentally progress through developmental levels of learning from mastering theory across the spectrum toward proficient professional practice. Aggregate data may also reveal a more precise way of measuring whether learning has occurred and if so, how much learning has occurred, and thereby establish more definitive markers to determine baseline competency. Aggregate data may also provide academic educators with a thumb nail sketch of programmatic strengths and weaknesses to better inform their educationally-based quality improvement initiatives.[204] The Dreyfus model of scoring holds promise for establishing inter-rater reliability among numeric scorers if it is broadened and refined over time. Where as, a website hosting discussion boards on "Finding Your Way—The Lessons of Experience" may create a body of bio-statistical research data regarding professional enculturation and communities of practice as well as develop novice's cognitive competencies for creating analogies, formulating narratives, and introspective thinking.

Aside from the research initiatives, the TEACH Compass™ creates a framework to support learning during the legal practicum and medical residency, and likewise inform knowledge about learning, among novice practitioners, master practitioners and guide masters in a productive, collaborative effort. This kind of collaborative effort will invigorate our potential to restore public trust and preserve the social contract.

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[204] ACGME, *supra* note 21.