To: Council of the ABA Section of Legal Education and Admissions to the Bar

From: Richard K. Neumann, Jr., Professor of Law,
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Date: January 31, 2014

Re: Chapter 3 notice and comment
Proposed Standards 302, 303, and 314

This memo analyzes

- the six-credit and 15-credit skills proposals regarding proposed Standard 303
- proposed Standard 314 on learning assessment
- proposed Standard 302 on learning outcomes

The memo does so by comparing law with other professions.

The status quo in legal education isn’t the norm against which these proposals should be judged. The norm is what all professions generally do to educate those who enter them. What does it take to educate a professional? Do these proposals accomplish that?
On some essential issues, the ABA hasn’t over-regulated. It has in fact under-regulated. The ABA has the most lenient curricular requirements in the professions. Medicine’s standards, in contrast, set out in abundant detail what must be taught, and architecture’s standards do the same with what must be learned.

During its recent comprehensive review of its accreditation standards, the National Architectural Accrediting Board felt obligated to respond to “[c]alls to increase the rigor of the accreditation process without increasing expenses.” On many core issues, the NAAB has far tougher requirements than the ABA. But the NAAB didn’t hear calls to reduce costs by loosening regulation. It heard the reverse: calls to make regulation tougher without increasing costs.

For almost a century, medical accreditation standards have required each medical school to own or affiliate with a teaching hospital — an enormous expense that dwarfs any imaginable law school investment in clinics. Teaching hospitals are more expensive to run than ordinary hospitals. But insurance pays nothing extra for procedures in teaching hospitals. The teaching that goes on there is an unreimbursed educational expense.

Even though medical school accreditation standards are far more demanding than any in effect or contemplated within the ABA, no article complaining that medical education is over-regulated by accreditation can be found through searches of the online archives of Academic Medicine (the medical equivalent of the Journal of Legal Education), the New England Journal of Medicine, and JAMA (formerly the Journal of the American Medical Association). Nor is there evidence of similar complaints on the websites of organizations concerned with medical education.

Law school curricula are much more uniform from school to school than are curricula in medicine or architecture. But that’s because law schools conform to each other, not because they’re obeying accreditation regulations. In medicine and architecture, the course of study is both more heavily regulated and more diverse than in legal education. In law, curricula are lightly regulated, but there’s little curricula diversity from school to school. Nonconformism isn’t comfortable.

When hearing complaints about the cost of curricular accreditation standards, the context is that many law school faculty members now teach three courses a year, and it’s not unusual for one of those courses to be a small-enrollment seminar. When I was a law student, faculty taught four or five courses a year. In legal education, faculty resources have been spent in ways unique in the professions, and this has gotten worse over time.

Because the ABA requires so little educationally, the typical law graduate’s transcript lists a high percentage of electives — much more than 50% of the total academic credits. This is a far higher percentage than would be permitted in medicine or architecture. Medical students

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usually don’t take significant numbers of electives until the last year of their four-year program. Architecture, “like other professional degrees” — except law — “is characterized by a high number of required courses that dominate all but a small part of the students’ entire educational experience.”

The Six-Credit Skills Proposal and the 15-Credit Skills Proposal

Comparing the professions —

It takes at least nine years, including undergraduate study, to become a physician, a surgeon, or a clinical psychologist. It takes at least eight years to become an architect, a dentist, or a veterinarian. It takes only seven years, undergraduate school plus law school, to become a lawyer.

Professional schools are four years in medicine, clinical psychology, dentistry, veterinary medicine, and pharmacy. Law school is only three years.

A layperson looking at this might assume that lawyers don’t need to know as much or have as many skills as dentists or pharmacists and might further assume that law is the easiest profession to get into. A client looking at it might have more confidence in her doctor, dentist, or pharmacist than in her lawyer, and she might think that becoming a lawyer is too easy.

It isn’t just a difference in the amount of education and other preparation needed to enter a profession. It’s also what happens during that education.

In medical school, the accredditor requires skills learning equivalent to at least 38% of the course of study for an MD degree. The architecture school accreditor requires skills learning amounting to at least 32% of degree study. In pharmacy, the accredditor requires 30%. In clinical psychology and veterinary medicine, it’s 25%. In law, the current ABA requirements can be satisfied with only 8% of the study required for a JD.

In other professions, the following happen because accredditors or licensing authorities require it:

- Every medical student spends at least a year and a half treating patients under supervision in a teaching hospital and other clinical settings, which medicine calls bedside learning.

- Nearly a third of every architecture student’s professional education is spent designing buildings and other structures in the school’s design studio, the

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equivalent of a law school clinic.

- To become a clinical psychologist in most states, a student completes a one-year full-time clinical externship before obtaining a degree.
- Every veterinary student spends a year or more in clinical settings treating animals.
- A pharmacy student earns, at a minimum, almost a third of the student’s course credits doing pharmacy work under supervision.

Table 1 shows these and other differences between preparation for law and preparation for other professions — all of which put law in a very bad light. This memo’s Appendix explains the math for other professions. For law, the math is explained in the next two paragraphs.

In the ABA Standards, the term “professional skills” means all the skills used in the practice of law except persuasive and analytic writing. Contract drafting is counted with negotiation and cross-examination as a “professional skill,” but appellate brief writing isn’t. The appellate brief falls into a separate category, “writing in a legal context.” This arbitrarily separate categorization was caused by the ways law school curricula developed. It’s manageable in Standards enforcement, but when comparing law with other professions, the two categories must be combined. They add up to what lawyers do.

The ABA currently requires at least one credit in “professional skills” plus two legal writing “experiences,” one of them in the first year. A school can satisfy the ABA’s first-year writing requirement with four credits, although Yale does it with three. A school can satisfy the upper-level writing requirement with two credits. Thus a school must currently require seven credits of skills learning, six of them in writing courses. The ABA requires a minimum of 83 total semester credits or quarter-term equivalents. Seven divided by 83 is 8%.

Terminology and teaching methods vary across professions. In Table 1 and elsewhere in this memo, the terms skills instruction, skills experience, clinical work, design studio, and post-degree internship all refer to skills learning supervised or conducted by a person designated to teach, during or after a professional degree program, by a school, an accreditor, or a licensing authority.

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3 ABA Standard 302(a)(4) and Interpretation 302-2.

4 Standard 302(a)(3).

5 American Bar Association, 2012–2013 Standards for Approval of Law Schools, Standard 302(a)(3)&(4); ABA Consultant’s Memo #3 (March 2010).

6 ABA Interpretation 304-4.
### Table 1
Practice Preparation Requirements in Different Professions

<table>
<thead>
<tr>
<th>Profession</th>
<th>Professional degree and years of study required</th>
<th>Pre-degree skills instruction required by the profession’s accreditor</th>
<th>Supervised skills experience required by the profession’s licensing authority after graduation and before obtaining a license</th>
<th>Total full-time-equivalent pre-licensure skills learning time (sum of columns C and D)</th>
<th>Licensing exam — and the extent to which it tests skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>lawyer</td>
<td>JD 7 years</td>
<td>the accreditor’s requirements can be satisfied with 7 credits (8% of 83 required credits)</td>
<td>none</td>
<td>~ FTE of 7 weeks (the time to cover 7 credits if the student were taking no other courses)</td>
<td>state bar exam, usually including a ½-day or ½-day written Multistate Performance Test</td>
</tr>
<tr>
<td>physician or surgeon</td>
<td>MD 9 years (plus add'l years in residencies)</td>
<td>learning outcomes requiring approx. 1½ years in clinical work (38% of 4 years)</td>
<td>1 yr of residency (also called internship)</td>
<td>2½ years (+ post-licensure years in residencies)</td>
<td>USMLE, including 3 days of standardized patients and simulation diagnostic skills testing</td>
</tr>
<tr>
<td>clinical psychologist</td>
<td>PhD or PsyD 9 to 10 years</td>
<td>1 yr pre-degree clinical internship (25% of 4 years)</td>
<td>1 or 2 years of post-doctoral residency</td>
<td>2 or 3 years</td>
<td>EPPT</td>
</tr>
<tr>
<td>architect</td>
<td>B.Arch. or M.Arch (years vary)</td>
<td>learning outcomes requiring approx. 31% of course credits in the design studio</td>
<td>IDP: 5600 hrs</td>
<td>4.15 years</td>
<td>ARE, which is almost entirely skills</td>
</tr>
<tr>
<td>dentist</td>
<td>DDS or DMD 8 years + (state requirements too diverse to quantify)</td>
<td>in lieu of curricular reqmts, the accreditor requires extensive clinical learning outcomes</td>
<td>some states</td>
<td>NPDE and a regional clinical examination</td>
<td></td>
</tr>
<tr>
<td>veterinarian</td>
<td>DVM 8 years</td>
<td>1 yr in clinical work (25% of 4 years)</td>
<td>none</td>
<td>1 year (plus post-licensure years in residencies)</td>
<td>NAVLE 93% skills</td>
</tr>
<tr>
<td>pharmacist [(Rph)</td>
<td>Pharm.D. 6 to 8 years</td>
<td>30% of course credits</td>
<td>typically 1500 hrs (differs by state)</td>
<td>approx. 2 years</td>
<td>NAPLEX and MPJE</td>
</tr>
</tbody>
</table>
In Table 1, the Column A years are the sum of professional school (column B) plus the post-graduation, pre-licensure supervised skills experience required by the licensing authority (column D) plus undergraduate study (four years, but sometimes in pharmacy three years).

In Column D are requirements imposed by the licensing authority for supervised skills experience that must occur after graduation and before obtaining a license to practice.

Column E is the sum of the skills learning required in professional school by the accreditor (column C) and the post-graduation, pre-licensure supervised skills experience required by the licensing authority (column D).

Because much skills instruction in other professions is conducted full-time — the student or unlicensed graduate is learning only skills for a period of time and isn't simultaneously taking non-skills courses — the only way to compare law with other professions is to compute full-time equivalents for skills instruction taken in law school simultaneously with other courses.

Here’s the math behind the seven-week number for law in column E: The ABA requires 83 total credits, which averages to 13.8 per semester. The ABA requires 14 class hours per credit, using 50-minute hours. Law schools typically do this through 14-week semesters. Seven credits is half of a 14-credit course load and thus half of a 14-week semester. The full-time equivalent — the amount of time needed if the student were taking these seven credits and doing no other course work — is seven weeks. Because much of the skills learning in other professions is done full-time, the only way to compare law is to calculate the full time equivalent of part-time study. In higher education, this is an accepted method of computing the full-time-equivalency of courses taken simultaneously with other courses. For example, colleges with one-course-at-a-time block curricula, such as Colorado College and Cornell College in Iowa, do similar math when comparing their course credits with course credits at colleges that have conventional curricula.

Although many law schools require students to do more than these seven credits, that’s true of requirements in other professions as well. Quantifiable data on average skills preparation per profession is unobtainable. Even if it were, and even if Table 1 were adjusted for all professions on that basis, law wouldn’t necessarily look better in this comparison with the other professions. Because other accreditors require much more than law, reflecting a stronger sense of responsibility in every other profession to assure that graduates are competently skilled, it shouldn't be surprising if skills averages per student exceed skills requirements in other professions by an equal or wider margin than in law. Law might have reason to be grateful that a compilation like Table 1 can’t report more than professional requirements.

In this memo’s Appendix are details for other professions concerning the information in Table 1.

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7 ABA Standard 304, Interpretation 304-4 (which includes formulae for harmonizing other scheduling systems).
The two proposals —

The Council has sent two proposals on this subject out for notice and comment. One would raise the “professional skills” requirement to six credits. Added to six writing credits, the total would be 12 credits, which is 14% of a JD degree.

The other proposal would increase the “professional skills” requirement to 15 credits. Added to six writing credits, the total would be 21 credits — 25% of a JD degree.

The 15-credit proposal would put law in a tie for last place among the professions (25%). The six-credit proposal would leave law in sole possession of last place (14%). The status quo (8%) leaves law so far behind every other profession that last place seems euphemistic.

Recommendation —

The Council should require that every law school graduate have at least 15 credits of professional skills learning.

For more than half a century, the practicing bar has been demanding that legal education do what other professions do. In 1950, for example, Arthur Vanderbilt, Chief Justice of the New Jersey Supreme Court, said in the ABA Journal that legal education “cannot continue to lag behind the engineering and scientific schools with their laboratory work or the medical colleges with their clinics.”

State bars are making exactly the same complaint today. California is taking action on it. The president of the Rhode Island bar wrote recently in that state’s bar journal

... imagine if we trained doctors solely in classrooms and only for three years, with no patient contact, and had them, almost exclusively, read nothing but medical case studies. Then, without ever having been required to see a patient, give an injection, or work in a hospital or doctor’s office, they are awarded their M.D. If they pass an exam, they receive their license to practice medicine, and are unleashed on the public. The license would allow them to practice medicine in any field without any further training. Heart surgery? No problem — you are a doctor, you have your license ... Well, isn't that how law schools train lawyers? ... They are no more prepared to represent a client than a doctor with a similar lack of training would be prepared to treat a sick patient.

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8 36 A.B.A.J. 299.

Proposed Standard 314
on Learning Assessment

The original draft —

Table 2 compares the current proposed Standard 314 on assessment with the original draft:

Validity and reliability: The original draft required that assessment methods be valid and reliable. Those are terms of art among people who design measurement methods, including tests like the LSAT. A measurement method is considered valid if it accurately measures what it’s being used to measure. The method is reliable if it produces consistent results when administered by different people at different times measuring different samples.

The LSAT and all other admissions tests are expected to be valid and reliable. In fact, the ABA itself requires, in Standard 503, that the LSAT and any other law school admissions test be valid and reliable. Here’s the Standard and Interpretation:

Standard 503. ADMISSION TEST

A law school shall require each applicant for admission as a first-year J.D. student to take a valid and reliable admission test . . . .

Interpretation 503-1

A law school that uses an admission test other than the Law School Admission Test sponsored by the Law School Admission Council shall establish that such other test is a valid and reliable test . . . .

Although the 2009 draft would have required validity and reliability in assessment inside law school, that requirement has been omitted from the 2014 proposed Standard 314.

If validity and reliability aren’t required, assessment can be inaccurate as often as it’s accurate. And if methods of assessment aren’t evaluated for validity and reliability, no one will know the difference between accurate results and inaccurate ones.


Formative assessment evaluates a student’s learning while the student is learning. It’s communicated to the student promptly so the student can improve the process of learning. It helps to form learning.
Table 2
Comparison of the Current Proposal with Standard Review’s 2009 Draft

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard 303(a)</strong></td>
<td><strong>Standard 314</strong></td>
</tr>
<tr>
<td><strong>Assessment of Learning Outcomes</strong></td>
<td><strong>Assessment of Student Learning</strong></td>
</tr>
<tr>
<td>(a) In assessing student learning outcomes, a law school shall</td>
<td>A law school shall utilize both formative and summative assessment methods in its curriculum to measure and improve student learning and provide meaningful feedback to students.</td>
</tr>
<tr>
<td>(1) identify, define, and disseminate the methods used for assessment;</td>
<td>Interpretation 314-1</td>
</tr>
<tr>
<td>(2) employ a variety of <strong>valid and reliable</strong> assessment methods, consistent with sound pedagogy, systematically and sequentially <strong>throughout the course of the students’ studies</strong>;</td>
<td>Formative assessment methods are measurements at different points during a particular course or at different points over the span of a student’s education that provide meaningful feedback to improve student learning. Summative assessment methods are measurements at the culmination of a particular course or at the culmination of any part of a student’s legal education that measure the degree of student learning.</td>
</tr>
<tr>
<td>(3) provide feedback to students periodically and <strong>throughout their studies</strong> about their progress in achieving the institution’s identified student learning outcomes; and</td>
<td>Interpretation 314-2</td>
</tr>
<tr>
<td>(4) use broad-based involvement of the law school’s faculty in developing and carrying out assessment activities.</td>
<td>A law school need not apply multiple assessment methods in any particular course. Assessment methods are likely to be different from school to school. Law schools are not required by Standard 314 to use any particular methods.</td>
</tr>
</tbody>
</table>

Summative assessment judges how much a student has learned. It judges results.

All end-of-semester final exams are summative. If a midterm exam is just graded, it’s summative and nothing more. To be formative as well, the midterm would have to be followed by detailed information from the teacher on why certain answers to exam questions are effective and others not, how and why students are making various mistakes, and how those mistakes can be avoided in the future.

Distributing a model answer isn’t formative assessment. Any essay exam question can be answered effectively in many different ways. A model answer is meaningful information mostly to students who attempted to answer in that one way and fell short of what the model answer accomplished. Students who attempted other methods that could be
effective aren’t being told much about how to improve themselves. Formative assessment must be detailed and evaluate the student’s individual work and process of study and be communicated individually to the student.

An accreditation standard doesn’t need to say all of this. But if law school faculty are to understand what their accreditor expects of them, the accreditor will have to say more than proposed Interpretation 314-1 does, and the accreditor will have to say it more clearly.

Clinicians, legal writing teachers, and other skills teachers have been doing formative assessment for decades. It’s the core of those teaching methods. Formative assessment is unusual in casebook courses. How many casebook teachers meet with every student after a midterm to help each of them become a better learner?

How often students are to be assessed: The 2009 draft would have required assessment “systematically and sequentially throughout the course of the student’s studies.” It also would have required feedback communicated to students individually “throughout their studies about their progress in achieving” specific learning goals.

The school would have been required to set educational goals, evaluate each individual student periodically on how well or badly the student is achieving them, and give the student enough individual feedback to help the student do a better job of achieving those goals. That’s how efficient education works. For a century, the idealized image has been Horace Mann or Mark Hopkins on one end of a log and the student on the other.

The 2014 proposed Standard 314 would require none of that. It would only require a school to use both assessment types “in its curriculum” and to “provide meaningful feedback to students” in its curriculum. And proposed Interpretation 314-2 exempts schools from any obligation to use both methods in all courses. It would be enough to use one method per course.

Every accredited law school already does everything the 2014 proposal would require.

Every law school course already uses at least one assessment method: the summative assessment represented by a final grade. A casebook teacher can satisfy the proposal by giving a final exam, grading it, and reporting the grades to the registrar without saying anything to students about the exam afterward.

And every law school already uses both assessment types “in its curriculum.” Its legal writing teachers use formative assessment. So do its clinicians and other skills teachers.

Proposed Standard 314 won’t require anybody to do anything they aren’t already doing.

The accreditor of medical schools, on the other hand, requires “fair and timely formative
and summative assessment . . . in each course and clerkship."

**Recommendation —**

The Council should reject proposed Standard 314 and its Interpretations. And the Council should send this matter back to the Standards Review Committee with instructions to draft a meaningful assessment Standard.

A Standard that requires no one to change is worse than no Standard at all. It would create a misleading appearance of improved education even though everybody can continue doing what they’re doing now.

**Proposed Standard 302 on Learning Outcomes**

This proposal’s inadequacies are immediately apparent when it’s compared to what architecture does.

Architecture’s accreditor, the National Architectural Accrediting Board, requires that every architecture school or program insure that every graduating student satisfy 32 Student Performance Criteria, and a 33d will be added in 2014. A student who doesn’t satisfy all of them is not considered educated.

The SPC are organized into realms — three realms in the 2009 Conditions for Accreditation, expanded to four in the draft 2014 revision to the Conditions. Below is the wording, from the 2014 draft revision, with which each realm is introduced. I’ve added the italics.

**Realm A — Critical Thinking and Representation:** Graduates from NAAB-accredited programs must be able to build abstract relationships and understand the impact of ideas based on the research and analysis of multiple theoretical, social, political, economic, cultural and environmental contexts. . . .

An architecture school is expected to graduate only students who satisfy all eleven Realm A SPC’s, which are listed in Table 3.

**Realm B — Integrated Building Practices, Technical Skills and Knowledge:** Graduates from NAAB-accredited programs must be able to comprehend the technical aspects of design, systems and materials, and be able to apply that comprehension to architectural solutions. . . .

All graduating students are expected to satisfy all twelve Realm B SPC’s, which are listed in

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10 Liaison Committee on Medical Education, *Functions and Structure of a Medical School*, ED-30.
Table 3.

**Realm C — Professional Practice:** Graduates from NAAB-accredited programs must understand business principles for the practice of architecture, including management, advocacy, and acting legally, ethically and critically for the good of the client, society and the public. . . .

The nine Realm C SPC’s are listed in Table 3.

**Realm D — Integrated Architectural Solutions:** Graduates from NAAB-accredited programs must be able to synthesize a wide range of variables into an integrated design solution. . . .

Realm D has one SPC, which is listed in Table 3.

An architecture school or program doesn't get to decide which Student Performance Criteria it will cover fully in its curriculum. It must cover them all fully — for every student. The accreditor won't be content if most graduating students can satisfy most of the SPC’s. The school is required to make sure that every graduating student satisfies every SPC. Anything less is not an education in architecture.

Every architecture school or program is required to create a matrix showing — for each SPC — the required courses (not the electives) in which students must acquire the knowledge and skills to satisfy the SPC. 11

When an architecture school or program is inspected by the NAAB, the team room is filled with student work, including building designs, and the team spends the bulk of its time on site examining those designs to see whether students have satisfied every one of the Student Performance Criteria. The NAAB requires that the exhibited designs “include examples of both the minimum passing grade and high achievement . . . of sufficient quantity to demonstrate that all graduates are meeting the performance criteria.” 12 For each piece of student work, the grade or instructor’s comments must be included. 13

On the first page of its report, the visiting team states its observations about the student work it examined. After the NAAB determines the outcome of a site inspection, the visiting team’s report becomes a public document and can be read on the NAAB website. 14 There anyone can learn that the Harvard Graduate School of Design, for example, failed to satisfy . . .

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11 For an example, see NAAB, 2009 Conditions for Accreditation, App. 4, at 37.
12 NAAB, Procedures for Accreditation, § 5.3(c)(ii) (Amended 2012) (italics added).
13 Id. at § 5.3(c)(iii)(2).
three Student Performance Criteria;\footnote{NAAB Visiting Team Report for the Harvard Graduate School of Design, at 1 (2012): B.2 (Accessibility); B.5 (Life Safety); and B.6 (Comprehensive Design).} the University of Texas School of Architecture failed four SPC’s;\footnote{NAAB Visiting Team Report for the University of Texas School of Architecture, at 1 (2012): B.6 (Comprehensive Design); C.3 (Client Role in Architecture); C.5 (Practice Management); and C.7 (Legal Responsibilities).} and at Washington University in St. Louis, two design schools failed five SPC’s.\footnote{NAAB Visiting Team Report for the Washington University School of Design and Visual Arts and Graduate School of Architecture and Urban Design, at 1–2 (2012): A.10 (Cultural Diversity); B.2 (Accessibility); B.7 (Financial Considerations); C.8 (Ethics and Professional Judgment); and C.9 (Community and Social Responsibility).}

It isn’t just architecture that requires more learning outcomes than law does. All the professions require more. And if proposed Standard 302 is adopted in its present form, all the professions will still require more.

**Recommendation —**

*The Council should adopt proposed Standard 302 only as a temporary stopgap to put schools on notice of forthcoming requirements.*

*In the meantime, the Council should return the matter of learning outcomes to the Standards Review Committee with instructions to draft, within months, a more complete and more stringent version of the Standard.*

Nearly all lawyers negotiate and counsel clients, but proposed Standard 302 wouldn’t require that every student learn how to negotiate and counsel. Nearly all lawyers draft documents creating rights and obligations — contracts, stipulations of settlement, court orders, judgments, ordinances, etc. — but proposed Standard 302 wouldn’t require that every student learn those skills either.

Proposed Standard 302 wouldn’t require that every student learn how to plan litigation; question witnesses in and out of court; get exhibits admitted into evidence; argue to juries; or draft pleadings or motions.

A graduate who hasn’t learned these skills isn’t an educated lawyer.
Table 3
Proposed Learning Outcomes in Law
Compared to
Existing Learning Outcomes in Architecture

<table>
<thead>
<tr>
<th>Law</th>
<th>Architecture</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABA Standards for Approval of Law Schools</td>
<td>National Architectural Accrediting Board 2009 Conditions for Accreditation</td>
</tr>
<tr>
<td><strong>Proposed Standard 302. Learning Outcomes</strong></td>
<td><strong>Student Performance Criteria</strong></td>
</tr>
<tr>
<td>A law school shall establish learning outcomes that shall, at a minimum, include competency in the following:</td>
<td>The accredited degree program must demonstrate that each graduate possesses the knowledge and skills defined by the criteria set out below. . . .</td>
</tr>
<tr>
<td>subsection (a)</td>
<td><strong>Realm A — Critical Thinking and Representation</strong></td>
</tr>
<tr>
<td>knowledge and understanding of substantive and procedural law</td>
<td><strong>A.1. Communication Skills:</strong> Ability to read, write, speak and listen effectively.</td>
</tr>
<tr>
<td>subsection (b)</td>
<td><strong>A.2. Design Thinking Skills:</strong> Ability to raise clear and precise questions, use abstract ideas to interpret information, consider diverse points of view, reach well-reasoned conclusions, and test alternative outcomes against relevant criteria and standards.</td>
</tr>
<tr>
<td>legal analysis and reasoning</td>
<td><strong>A.3. Visual Communication Skills:</strong> Ability to use appropriate representational media, such as traditional graphic and digital technology skills, to convey essential formal elements at each stage of the programming and design process.</td>
</tr>
<tr>
<td>legal research</td>
<td><strong>A.4. Technical Documentation:</strong> Ability to make technically clear drawings, write outline specifications, and prepare models illustrating and identifying the assembly of materials, systems, and components appropriate for a building design.</td>
</tr>
<tr>
<td>problem solving</td>
<td><strong>A.5. Investigative Skills:</strong> Ability to gather, assess, record, apply, and comparatively evaluate relevant information within architectural coursework and design processes.</td>
</tr>
<tr>
<td>written communication in the legal context</td>
<td><strong>A.6. Fundamental Design Skills:</strong> Ability to effectively use basic architectural and environmental principles in design.</td>
</tr>
<tr>
<td>oral communication in the legal context</td>
<td><strong>A.7. Use of Precedents:</strong> Ability to examine and comprehend the fundamental principles present in relevant precedents and to make choices regarding the incorporation of such principles into architecture and urban design projects.</td>
</tr>
<tr>
<td>subsection (c)</td>
<td><strong>Interpretation 302-1</strong></td>
</tr>
<tr>
<td>exercise of proper professional and ethical responsibilities to clients and the legal system</td>
<td>... other professional skills include, but are not limited to ...</td>
</tr>
<tr>
<td>subsection (d)</td>
<td>interviewing</td>
</tr>
<tr>
<td>other professional skills needed for competent and ethical participation as a member of the legal profession</td>
<td>counseling</td>
</tr>
</tbody>
</table>
A.8. Ordering Systems Skills: Understanding of the fundamentals of both natural and formal ordering systems and the capacity of each to inform two- and three-dimensional design.

A.9. Historical Traditions and Global Culture: Understanding of parallel and divergent canons and traditions of architecture, landscape and urban design including examples of indigenous, vernacular, local, regional, national settings from the Eastern, Western, Northern, and Southern hemispheres in terms of their climatic, ecological, technological, socioeconomic, public health, and cultural factors.

A.10. Cultural Diversity: Understanding of the diverse needs, values, behavioral norms, physical abilities, and social and spatial patterns that characterize different cultures and individuals and the implication of this diversity on the societal roles and responsibilities of architects.


Realm B — Integrated Building Practices, Technical Skills and Knowledge

B.1. Pre-Design: Ability to prepare a comprehensive program for an architectural project, such as preparing an assessment of client and user needs, an inventory of space and equipment requirements, an analysis of site conditions (including existing buildings), a review of the relevant laws and standards and assessment of their implications for the project, and a definition of site selection and design assessment criteria.

B.2. Accessibility: Ability to design sites, facilities, and systems to provide independent and integrated use by individuals with physical (including mobility), sensory, and cognitive disabilities.

B.3. Sustainability: Ability to design projects that optimize, conserve, or reuse natural and built resources, provide healthful environments for occupants/users, and reduce the environmental impacts of building construction and operations on future generations through means such as carbon-neutral design, bioclimatic design, and energy efficiency.

B.4. Site Design: Ability to respond to site characteristics such as soil, topography, vegetation, and watershed in the development of a project design.

B.5. Life Safety: Ability to apply the basic principles of life-safety systems with an emphasis on egress.
B.6. **Comprehensive Design:** Ability to produce a comprehensive architectural project that demonstrates each student’s capacity to make design decisions across scales ...

B.7. **Financial Considerations:** Understanding of the fundamentals of building costs, such as acquisition costs, project financing and funding, financial feasibility, operational costs, and construction estimating with an emphasis on life-cycle cost accounting.

B.8. **Environmental Systems:** Understanding the principles of environmental systems| design such as embodied energy, active and passive heating and cooling, indoor air quality, solar orientation, daylighting and artificial illumination, and acoustics; including the use of appropriate performance assessment tools.

B.9. **Structural Systems:** Understanding of the basic principles of structural behavior in withstanding gravity and lateral forces and the evolution, range, and appropriate application of contemporary structural systems.

B.10. **Building Envelope Systems:** Understanding of the basic principles involved in the appropriate application of building envelope systems and associated assemblies relative to fundamental performance, aesthetics, moisture transfer, durability, and energy and material resources.

B.11. **Building Service Systems:** Understanding of the basic principles and appropriate application and performance of building service systems such as plumbing, electrical, vertical transportation, security, and fire protection systems.

B.12. **Building Materials and Assemblies:** Understanding of the basic principles utilized in the appropriate selection of construction materials, products, components, and assemblies, based on their inherent characteristics and performance, including their environmental impact and reuse.

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**Realm C — Leadership and Practice**

C.1. **Collaboration:** Ability to work in collaboration with others and in multidisciplinary teams to successfully complete design projects.

C.2. **Human Behavior:** Understanding of the relationship between human behavior, the natural environment and the design of the built environment.

C.3. **Client Role in Architecture:** Understanding of the responsibility of the architect to elicit, understand, and reconcile the needs of the client, owner, user groups,
and the public and community domains.

C.4. Project Management: Understanding of the methods for competing for commissions, selecting consultants and assembling teams, and recommending project delivery methods.

C.5. Practice Management: Understanding of the basic principles of architectural practice management such as financial management and business planning, time management, risk management, mediation and arbitration, and recognizing trends that affect practice.

C.6. Leadership: Understanding of the techniques and skills architects use to work collaboratively in the building design and construction process and on environmental, social, and aesthetic issues in their communities.

C.7. Legal Responsibilities: Understanding of the architect's responsibility to the public and the client as determined by registration law, building codes and regulations, professional service contracts, zoning and subdivision ordinances, environmental regulation, and historic preservation and accessibility laws.

C.8. Ethics and Professional Judgment: Understanding of the ethical issues involved in the formation of professional judgment regarding social, political and cultural issues in architectural design and practice.

C.9. Community and Social Responsibility: Understanding of the architect's responsibility to work in the public interest, to respect historic resources, and to improve the quality of life for local and global neighbors.

[The NAAB's draft 2014 revised Conditions adds a Realm D.]

Realm D — Integrated Architectural Solutions

D.1. Integrative Design: Ability to produce an architectural solution that demonstrates the ability to make design decisions about a single project while demonstrating broad integration and consideration of environmental stewardship, technical documentation, accessibility, site conditions, life safety, environmental systems, structural systems, and building envelope systems and assemblies.
Appendix

Notes on Table 1

These notes provide details for Table 1.

Law

Column A — Total years of preparation before a license to practice: Six years is possible but rare. Although ABA Standard 502(a) permits admission of an applicant after three years of college, law schools nearly always require a bachelor’s degree.

Column C — Pre-degree skills instruction required by the accreditor: See the text before Table 1.

Column E — Total FTE pre-licensure learning time — sum of columns C and D (column E): See the text after Table 1.

Column F — Licensing exam and extent to which it tests skills: The Multistate Performance Test is used by 37 states. In 90 minutes, the test-taker evaluates a written file and writes a response to it. Some states require one of these tasks, and other states require two.

Medicine

Column A — Total years of preparation before a license to practice: Residency programs, known as post-graduate medical education, are accredited by the Accreditation Council for Graduate Medical Education. The first year of residency is required for licensure. Depending on the specialty, three to five years of residency are required to become board-qualified or board-certified.

Column C — Pre-degree skills instruction required by the accreditor: Medical school accreditation requires learning objectives that are virtually impossible to accomplish in less than a year and a half of clinical work. The third year of medical school is entirely clinical, commonly called “the year on the

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18 Liaison Committee on Medical Education, Functions and Structure of a Medical School: Standards for Accreditation of Medical Education Programs Leading to the M.D. Degree, Standards ED-13 through ED-17A (2013).
wards” and “bedside learning.” The accreditor is the Liaison Committee on Medical Education, which jointly supported by the American Medical Association and the Association of American Medical Colleges.

**Column F — Licensing exam and extent to which it tests skills:** The U.S. Medical Licensing Examination includes Step 1, Step 2 CK (Clinical Knowledge), Step 2 CS (Clinical Skills), and Step 3.

Step 1 tests basic science knowledge and is taken after the second year of medical school.

Step 2 CK (Clinical Knowledge) tests diagnostic abilities. Steps 1 and 2 CK are analogous to the Multistate Bar Examination and state bar exam essay questions. Step 2 CS (Clinical Skills) requires diagnostic examination of 12 standardized patients portrayed by actors. It tests how much was learned during the 1½ years of medical school clinical work. Step 2 CK and Step 2 CS exams are taken during the fourth year of medical school.

Step 3 (two days) is taken after the one-year post-graduate internship. It tests advanced diagnostic and treatment abilities through two testing formats. One is multiple-choice questions with “detailed clinical situations, usually from the patient’s perspective [and] may be supplemented by one or more pictorials or audio or video”; the other is computer-simulated case management starting with “clinical setting, simulated case time, and introductory patient information,” in response to which the test-taker performs diagnostic and treatment tasks. The test-taker is put in several clinical settings — medical office, in-patient ward, and emergency room — and required to do “extensive data gathering and initial therapeutic intervention,” evaluate prognoses, monitor therapy, and, in situations of “life-and/or organ-threatening emergencies” do “rapid assessment of complex presentations and prompt therapeutic decision making.”

Step 2 CS and Step 3 total three days of testing. Step 2 CS appears to have motivated medical schools to improve their clinical clerkship assessments.

**Clinical Psychology**

**Column B — Professional degree and years of study:** Includes a one-year pre-degree internship. Course work is generally three years.

**Column C — Pre-degree skills instruction required by the accreditor:** Required by state licensure rather than by the accreditor: “most licensure laws require 2 years of supervised experience; one year

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19 USMLE 2013 Step 3 Content Description and General Information at 3.

20 Id. at 4–5.

may be a predoctoral internship; and one year must be postdoctoral." The accreditor is the American Psychological Association Commission on Accreditation. State licensing boards are organized as the Association of State and Provincial Psychology Boards.²²

**Column D** — *Pre-licensure, post-degree supervised skills experience required by the licensing authority:* See the notes on Columns C and E.

**Column E** — *Total FTE pre-licensure learning time (sum of columns C and D):* “As of 2005, 39 states require 1 year of postdoctoral supervised work experience prior to licensure; 8 states and the District of Columbia require 2 years of postdoctoral supervised work prior to licensure.”²⁴

**Column F** — *Licensing exam and extent to which it tests skills:* The Examination for Professional Practice of Psychology is administered by the Association of State and Provincial Psychology Boards.

**Architecture**

**Column B** — *Professional degree and years of study:* Architecture degrees are granted at the bachelor’s, master’s, and doctoral levels, but the accreditation requirements are identical because architectural programs rather than degrees are accredited.²⁵ Licensure requires an architecture degree plus completing the Intern Development Program and passing the licensing exam. Some states will waive the architectural degree requirement if the applicant has six to ten years of experience, the amount depending on the applicant’s education aside from an architectural degree.²⁶

**Column C** — *Pre-degree skills instruction required by the accreditor:* The accreditor, the National Architectural Accrediting Board, requires that architecture students become skilled in 33 competencies called Student Performance Criteria.²⁷ For licensure purposes, the National Council of Architectural Registration Boards estimates that 50 of 160 credits is the minimum amount of design studio course work to satisfy the NAAB’s Student Performance Criteria.²⁸

**Column D** — *Pre-licensure, post-degree supervised skills experience required by the licensing authority:* Most states require completion of the Intern Development Program, which requires 700 training units


²⁴ *Psychology Licensure and Certification* at 87.

²⁵ See National Architectural Accrediting Board, 2009 *Conditions for Accreditation*.


²⁷ NAAB, 2009 *Conditions*, II.1.1.

(TUS) in 17 categories. Each TU equals eight hours under direct supervision of a licensed architect, who certifies satisfaction of the requirements.\textsuperscript{29}

**Column E — Total FTE pre-licensure learning time (sum of columns C and D):** In a four-year architecture program, the 31% design studio work calculated by NCARB translates to 1.25 years. Assuming a work year of 1,936 hours (40-hour weeks, two weeks of vacation, eight legal holidays, and no medical absences), the IDP-required 5,600 hours translates into 2.9 work-years. The two requirements total 4.15 years.

**Column F — Licensing exam and extent to which it tests skills:** The Architect Registration Examination is made up of seven separate exams administered by the NCARB. “All divisions of the ARE include problems called vignettes,” and the test-taker is “required to create a solution for each of the 11 vignettes.”\textsuperscript{30}

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**Dentistry**

**Column B — Professional degree and years of study:** The degrees are identical.

**Column C — Pre-degree skills instruction required by the accreditor:** As in medicine and architecture, the accreditor requires extensive learning outcomes.\textsuperscript{31} But unlike medicine and architecture, no surveys or licensing authority has quantified the results.

**Column F — Licensing exam and extent to which it tests skills:** The National Board Dental Examinations: Part I, Part II, and Dental Hygiene, administered by the Joint Commission on National Dental Examinations.

“Part II [of the NBDE] is a comprehensive examination covering clinical dental subjects, including patient management.”\textsuperscript{32} In most states, a separate clinical exam is required for licensure. There’s no national clinical exam. Instead, clinical exams are developed and administered regionally. “A regional agency, also called a regional board, is formed when a group of state boards jointly develop and administer a clinical examination. Five such regional agencies currently conduct examinations used by all but four licensing jurisdictions. ... New York does not require a clinical examination, but requires applicants to complete an accredited postgraduate dental education program of at least one year in length. California, Connecticut, Minnesota and Washington offer licensure applicants the option of completing an accredited postgraduate education program, at least one year in length, in lieu of a


\textsuperscript{31} Commission on Dental Accreditation, *Accreditation Standards for Dental Education Programs*, Standards 2-9 through 2-24 (2010).

Veterinary Medicine

**Column C** — *Pre-degree skills instruction required by the accreditor:* The accreditor is the American Veterinary Medical Association, Council on Accreditation. For the skills requirements, see the source in the footnote.  

**Column F** — *Licensing exam and extent to which it tests skills:* The North American Veterinary Licensing Examination is administered by the National Board of Veterinary Medical Examiners: 280 of the 300 multiple-choice items (93%) require gathering and interpreting data, diagnosing based on data, prescribing and implementing a treatment plan, and assessing outcomes.

Pharmacy

**Column A** — *Total years of preparation before a license to practice:* Some applicants are admitted to Pharm.D. programs with three years of college.

**Column C** — *Pre-degree skills instruction required by the accreditor:* The accreditor is the Accreditation Council for Pharmacy Education. For the skills requirements, see the source in the footnote.

**Column D** — *Pre-licensure, post-degree supervised skills experience required by the licensing authority:* Thirty-seven states require 1500 hours; six require more; four require less; and three have differently quantified requirements. States typically allow some or all of these hours to be performed during Pharm.D. study.

**Column E** — *Total FTE pre-licensure learning time (sum of columns C and D):* The 30% of pre-degree study required by accreditation is 1.2 years. Assuming a work year of 1,936 hours (40-hour weeks, two weeks of vacation, eight legal holidays, and no medical absences), the typical state-licensing required 1,500 hours is approximately 0.77 work-years. The 2-year number in Table 1 is the sum of 1.2 and 0.77.

**Column F** — *Licensing exam and extent to which it tests skills:* The North American Pharmacist Licensure Examination and the Multistate Pharmacy Jurisprudence Examination are both administered by the National Association of Boards of Pharmacy.

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33 Id.
