What I Learned from My Fourth-Grader About Teaching Legal Reasoning

"As a result of my son's struggles, I better understand the challenges that my students face in learning legal reasoning."

By Jill Koch Hayford

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As a fourth-grader, my son had the good fortune (misfortune, according to him) of being exposed to two math curricula—"Everyday Math" and "Connecting Math Concepts."[1] The two curricula differ widely in approaches to learning. What surprised me as a legal writing teacher were the parallels between their divergent approaches and the reasoning methods in which I instruct my students every day. As a result of my son's struggles, I better understand the challenges that my students face in learning legal reasoning.

Everyday Math is the curriculum[2] of choice in our school system. My husband and I discovered some time ago, however, that our son struggled with it in the general classroom. We worked with the special education teacher to modify the problems he was asked to do for homework, and we supplemented it with extra practice on some concepts outside of the classroom. These modifications and supplements helped, but my son still seemed never to catch on to the logic of Everyday Math. We wanted to know why.

We began to research the pedagogy underlying the curriculum, and we learned of other curricula with approaches that might make more sense to our son. We focused on Connecting Math Concepts as a possibility, and ultimately we were able to get the school district to use this curriculum to supplement my son's math instruction. It clicked with him. In fact, his success was so dramatic that eventually we were able to persuade the school district to use Connecting Math Concepts as his only math curriculum.

Everyday Math, like many other so-called "new math" curricula, adopts an experiential, discovery-based, constructivist approach to learning; children are introduced to math problems in everyday life, and then are encouraged to "discover" what the rule might be to solve those problems. Only after the children discover the rule are they exposed to the rule. In essence, they construct their own methods of solving problems, based on their experience. Proponents say that this type of learning encourages children to think more deeply about the interrelatedness of math disciplines and to be better problem-solvers. Opponents say that kids don't become proficient at some of the basic math skills, such as computation, that are required of them both in everyday life and in higher-level mathematics.

Connecting Math Concepts, on the other hand, adopts a more traditional, direct, and sequential approach. Children are explicitly taught rules to solve math problems, and they receive repeated practice in applying those rules. Once they have mastered a rule, they move on to the next rule. Proponents say that this type of learning provides children with a solid foundation in the basic skills that are required of them; opponents contend that the repetition leads to boredom and therefore kids who are less intrinsically motivated to learn math, and that children never see the "whole" of mathematics.

[1] Everyday Math and Connecting Math Concepts are published by SRA McGraw-Hill.

[2] I use the term "curriculum" throughout this article, though some educators would call these commercially available materials "instructional resources."

Proponents of each type of curricula, pejoratively dubbed "fuzzy math" versus "drill-and-kill," have engaged in the infamous "math wars"[3] in some states, such as California, where the state mandates a curriculum for all public schools in the state. It has also led to skirmishes on the individual school or child level. Where one comes out on the debate, though, should have less to do with philosophical differences ("new v. old," "fun v. boring") than with what is best for the way in which each student's brain works.

For some time, educators have researched students' learning styles, dividing them into subgroups, including global versus analytical processors. "[G]lobal learners are right-brain preferenced processors, as opposed to analytic learners who are left-brain preferenced processors."[4] In general terms, global learners learn from whole to part, preferring to experience the "big picture" first, while analytical learners learn from part to whole, preferring to learn step-by-step and sequentially.[5] For this reason, at least some research suggests that global learners do better with experiential math curricula, while analytic learners prefer direct, sequential curricula.[6]

Parallels can be drawn to the reasoning skills that we teach in our legal writing classrooms. To be successful lawyers, students must learn not only to synthesize a rule but also to apply that rule to a client's factual situation.

To synthesize a rule, students read several cases that involve real life situations. They then must discover connections among them—the big picture—and build a rule that explains the results in the individual cases. It is an experiential, constructivist approach with parallels to new math curricula such as Everyday Math.

But we expect students to apply those individual rules, as well, to their clients' facts. Students start with the specific rule of law and, using rule-based reasoning, must use that rule to solve a problem. Like more traditional math curricula, rule-based reasoning is more direct and sequential, moving from part to whole.

As noted by many of our colleagues, however, "[a] law school class is likely to consist of both global and analytic learners."[7] Perhaps, then, we are unrealistic in expecting students to master both synthesis and application equally well. While all students can and must develop both skills to be successful lawyers, learning the skill that doesn't come naturally takes time and sustained effort, a struggle that I better understand from my fourth-grader.

From my son's struggles, I also better understand how to help my students to learn these skills. For the natural-born "left-brainers," struggling with synthesis, I break the process into step-by-step, sequential parts, using tools such as a synthesis chart.[8] For the natural-born "right-brainers," struggling with application, I help them to visualize the big picture—to focus on the end result of rule application to their client's facts—and then to build the steps leading to that result.

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[3] For one Web site that details these "wars," see <www.mathematicallycorrect.com>.

[4] Robin A. Boyle & Rita Dunn, *Teaching Law Students Through Individual Learning Styles*, 62 Alb. L. Rev. 213, 236 (1998).

[5] *Id.* at 236–38.

[6] *E.g., id.* at 236.

[7] *Id.* at 238.

[8] *See, e.g.*, Tracy McGaugh, *The Synthesis Chart: Swiss Army Knife of Legal Writing*, 9 Perspectives: Teaching Legal Res. & Writing 80 (2001).