Education Week

We Learn by Doing: What Educators Get Wrong About Bloom's Taxonomy

Students must have a chance to apply what they're learning

By Ron Berger

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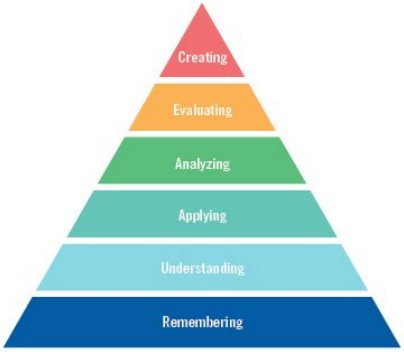
Let's say that you, as an adult, wanted to learn something new. Perhaps woodworking, coding, yoga, or guitar. You would likely search for experts and models to learn from—in person or online. You would study the models to identify what you are aiming for, and you would practice, copying those models, using experts to guide and critique your practice. The learning and the doing would be inseparable: As you try shaping wood, writing code, adjusting your body, or making chords with your fingers, you would get feedback from your own senses, from peers, and from experts, and you would adjust and learn as your understanding builds. The deeper concepts in these fields, such as joinery with wood or the logic of code sequences, would be learned from expert sources in concert with your practice.

It is unlikely you would want to separate learning from doing. You would not want to sit at a desk for months listening to someone lecture about carpentry tools or musical instruments without being allowed to pick up a chisel or guitar. You would not want to memorize 100 yoga postures from a book without being allowed to try them out with your body on a mat. But that is often what school is like for our students.

Bloom's Taxonomy, Revised



Source: Vanderbilt University Center for Teaching

Almost all us as educators have been taught to use a framework called Bloom's Taxonomy. Published by Benjamin Bloom and his team in 1956—and then revised in 2001 by a group of researchers, psychologists, and curricular specialists—this framework for the cognitive domain is most familiar to teachers and school leaders through a graphic that organizes the goals of learning in a pyramid that starts with "remembering" and climbs to "understanding," "applying," "analyzing," "evaluating," and finally "creating."

Bloom's Taxonomy in both versions has contributed a great deal to education. It reminds all of us who develop curriculum and assessments, coach teachers, and teach students that we need to focus on all these skills. Classrooms that don't allow students to become experts in rich content knowledge are missing a vital foundation and contribute to a knowledge-equity gap in America. Conversely, classrooms that focus almost exclusively on content and memorization with little application, analysis, and creation cause a different problem. They contribute to a two-tiered educational system in which some students, often those from more affluent families, are prepared to be thinkers and leaders, while others are prepared narrowly for tests of basic skills through memorization. The taxonomy, then, is a useful illustration that students need a healthy balance.

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Unfortunately, in my experience, Bloom's Taxonomy has also done a lot of damage. For the past 40 years that I have been working with teachers, I have observed the primary effect of Bloom's Taxonomy to be this: It creates a hierarchy in teachers' minds about how we learn. First, we need to remember knowledge, then we can learn to understand, then we can move up to applying that knowledge, and so on, until finally, at the very end, we are allowed to evaluate or create. Based on these discrete steps, teachers, schools, and districts craft curriculum and lessons that separate these skills and assume that students must be proficient in one level to move up to the next one.

This hierarchical vision of discrete, sequential steps in learning was not Bloom's intent. Nevertheless, it is now widespread among teachers and is as deeply troubling as it is fundamentally wrong. Most of the time we do not first memorize, then understand, then apply. We build our understanding in part through application and creation.

The price we pay in education for this misconception is profound. Students are kept at one level of this fictional pyramid because we think they are not ready to move up to "higher levels." For example, many American adults are not proficient with any mathematics beyond elementary school work, as almost everything they learned in high school has disappeared.

We memorized procedures to pass tests, but we never applied that mathematics to real life—never fully understood or used it—and it never really took.

These days, I am privileged to work with schools that understand the relationship between learning and doing. In the schools affiliated with EL Education—a professional network of public district and charter schools for which I serve as the chief academic officer—and many similar schools across the nation, students are engaged in doing meaningful work from the outset of learning. They are working as scientists or historians, researching local environmental or historical sites to produce useful artifacts for the community, such as a local field guide, a water-quality report, or a book on local history. They have frequent lessons to build background knowledge but they do not spend their year memorizing dates or facts just to pass a test. They are learning content, analyzing data, building understanding of both local issues and the broader fields of science and history at the same time as they are applying that learning to create and contribute.

When students are engaged in applying knowledge to building things of beauty and value as part of their learning, it does more than deepen understanding; it also cultivates student motivation and agency and pride in craftsmanship. When a student completes her education and enters the working world, she will be judged for the rest of her life not by test scores but rather by the quality of her character and the quality of her work. If students do not develop standards for high-quality work while in school—learning through striving for excellence in what they create—when do we imagine they will build this ethic?

I currently work with a number of public district high schools in our network, sited in low-income urban communities, from which almost every student graduates on time, and every single graduate is accepted to college every year. People often ask what the secret is—how can this be possible? There is no secret, of course, just lots of really hard work. But there is a difference: The students in those schools are continually creating sophisticated and beautiful work. Their understanding is deeper; their standards are higher; their mission is clearer.

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