THE CHRONICLE OF HIGHER EDUCATION
The Chronicle Review

April 14, 2014

Learning From Others

By Matthew D. Lieberman

Every fall I teach "Introduction to Social Psychology." It is a great joy to know that 300 more young adults will learn something about themselves and those around them. In 2009 I was asked if I would like to have my class recorded with the lectures posted to YouTube and iTunes. After checking my lecture notes to confirm that I wasn't planning to disparage any colleagues, I happily agreed.

To date, about 22,000 people have watched content from this class —the equivalent of me teaching it more than 70 times. Every few months I get an email from someone, often from Eastern Europe or South America, telling me how they never had access to this kind of material and that it has changed their lives. Still, when I think about the most successful learning experiences in my own life, I wonder if mass distribution of lecture content is the right approach.

There are at least two views of human nature with regard to learning. The first, the "classic" view, suggests that classroom learning is motivated by carrots and sticks. The carrot is the desire for a better material life in the future. The stick is the fear that doing poorly leads to harsh evaluations from the teacher, embarrassment in front of peers, and potential punishments from parents. The acquisition of new knowledge requires effortful thinking and the creation of mental hooks that can help us to later recall and use what we've learned.

A second approach to learning is the "social" view. When I was a

graduate student, our comprehensive exam was the most daunting task on the way to getting the Ph.D. Rather than setting about to memorize endless content, my colleagues and I shared the load. We divided the topics and were each responsible for teaching our own topics to the others. Using this peer-teaching strategy, we all passed the exam. It was the single best learning experience of my life.

But is the social model for learning actually superior to the classic model? In at least some cases, yes.

In 1980 the Yale psychologist John Bargh showed college undergraduates boring passages and told some students that there would be a memory test shortly after they read the passage. Other students were instead informed that they would be asked to teach the content to another student shortly after they read the passage; then they, too, were given a test. Even though the "learning for teaching" group was unaware of the forthcoming test, they significantly outperformed the "learning for testing" group. What is particularly striking in this study is that the "learning for teaching" students never actually taught anyone else.

Thanks to functional magnetic resonance imaging, or fMRI, we now have some clues to what the brain does differently when it is reading with a social motivation (i.e., to teach someone) versus a selfish motivation (i.e., to perform well on a test). Emily Falk and I ran an fMRI study during which participants believed they were reading descriptions of potential new television shows. They were told to imagine they were interns and would have to summarize and evaluate the show for their boss, the producer. A network of brain regions involved in social thinking was more active when participants were seeing a show idea that they would later pass on so successfully that the producer (i.e., another participant) would deem it worth passing on to a third party.

It makes sense that a network that's responsible for thinking about

the minds of others would play a role in how well we communicate ideas and our evaluations to other people. What was surprising was what we found when we analyzed the brain regions associated with accurate memory for the facts contained in the television pilot descriptions. Simply put, there was no relationship. Instead, it was activity in the regions involved in social thinking (i.e., the dorsomedial prefrontal cortex and temporoparietal junction) that was associated with accurate recall of the information.

These findings suggest that there really is a second way that the brain learns that is quite distinct from the "classic view." This "social" view invokes a brain network to support learning when social motivation is present.

So far, MOOC creators have adopted the classic view of learning. Motivationally, the carrots are largely the same, and I'm not so sure the absence of the sticks is such a bad thing. And regardless of where someone is watching from, the same effortful work must be done to commit the information to memory. Yet despite the natural fit between MOOCs and the classic view of learning, MOOCs have had limited success at best. In one of the few public assessments of educational attainment generated by MOOCs, San Jose State University found that of those who actually completed a MOOC in developmental math, only 30 percent were able to pass the course by traditional standards.

It is fascinating that all of the discussion about the viability of MOOCs is focused on whether or not the current technology is sufficiently adapted to the classic view of learning. Some would-be MOOC-improvers focus on the lack of official course credit, something that would selfishly motivate students to work harder. Others focus on the length of the lectures, the structure of the exams, or the course materials—all of which will make it harder or easier to commit the lectures to memory. But this is only part of the story. Perhaps MOOCs perform so poorly because they weren't designed with a full understanding of how people learn best.

It might seem that shifting any part of learning from face-to-face interactions to digital screens would inevitably undermine social learning. This is not necessarily the case. A number of technologies are leveraging the social view of learning to great effect. For instance, there are "teachable agent" programs in which the student is asked to teach a computer avatar a science lesson. At each step along the way, the student must think about what the avatar has and hasn't understood. Though still in their infancy, teachable-agent programs have produced both short and longer-term improvements in learning, especially for those performing poorly before the experience.

Perhaps the most exciting new technology development for social learning are web-based platforms like Edmodo, Edu 2.0, and Schoology. Although Edmodo hasn't received the same attention as MOOCs, it has more than 27 million users worldwide. The simplest description of Edmodo is "Facebook for the classroom." Edmodo allows teachers to assign work that can be worked on collaboratively by the entire class or by smaller, defined groups. The teacher can either participate and guide these collaborations or simply observe the process. Because the platform is online, students can move seamlessly from working on problems collaboratively in class to continuing the collaboration from home, and the evidence suggests the students are eager to work together in this way. Like Facebook, Edmodo takes face-to-face relationships into the cloud, and this is probably more successful than interactions that are digital from start to finish. Whether truly virtual relationships will be able to create the same motivational environment is still unknown.

The main benefit of Edmodo is that it zeroes in on the social view of learning. As Rob Hutter, chairman of Edmodo, describes it, "the sociality of the classroom is the power button that we sought to activate through the service and extend seamlessly across school, home, and all points between."

There is a reason that Facebook is one of the most popular destinations on the planet. We want to connect.

We are built to learn together, to share what we know. There is a reason that Facebook is one of the most popular destinations on the planet. We want to be social; we want to connect. The classic view of learning treats being social in the classroom as a distraction from real learning. In fact, being more social might just be learning's best friend. I'm not suggesting that texting and passing notes will improve test scores, but social motivations are present in the classroom whether they are addressed or not. We should harness the social brain's ability to learn. Technological learning tools that embrace the social may be in their infancy, but there's every reason to celebrate their promise.

Matthew D. Lieberman, a professor of psychology, psychiatry, and biobehavioral sciences at the University of California at Los Angeles, is the author of Social: Why Our Brains Are Wired to Connect *(Crown, 2013).*