CREATING TOMORROW'S INNOVATORS TODAY

BY JANICE MOLLOY

In 2010, IBM's Institute for Business Value surveyed 1,500 chief executives from 60 counties and 33 industries to determine the foremost issue confronting them and their organizations. The answer: global complexity. When asked in turn about the most important leadership competency for managing this complexity, the CEOs identified "creativity" as the crucial factor for future success. But they weren't confident in their companies' abilities to innovate for the future; only 49 percent believed that their organizations were equipped to deal with the rising complexity they face.

The good news, according to Tony Wagner, former co-director of the Change Leadership Group at the Harvard Graduate School of Education, is that the key qualities necessary for innovation—curiosity, collaboration, associative or integrative thinking, and a bias toward action and experimentation—are skills that can be learned rather than being strictly innate. Nevertheless, in his latest book, *Creating Innovators: The Making of Young People Who Will Change the World* (Scribner, 2012), he makes the case that most of our schools, at all levels, are failing to provide students with the hands-on, collaborative learning that fosters creative, critical thinking. Instead, they continue to prepare students in traditional ways for a career path that no longer exists.

Breaking the Mold

To illustrate that a different way of teaching and learning is possible, Wagner introduces several educational programs that are striving to break the existing mold, including the High Tech High network of K–12 schools in San Diego, California, Olin College in Needham, MA, the MIT Media Lab, and Stanford's d.school. The essential difference between these programs and other, more conventional ones is that these schools promote:

- Collaboration versus individual achievement
- Multidisciplinary learning versus specialization
- Trial and error versus risk avoidance
- Creating versus consuming
- Intrinsic versus extrinsic motivation

Wagner quotes Richard Miller, president of Olin College, on the college's goal, one that is largely shared by the other leading-edge institutions Wagner studied:

> We've trying to teach students to take initiative—to transmit attitudes, motivations, and behaviors versus mere knowledge. Today, it's not what you know, it's having the right questions. I see three stages in the evolution of learning: The first is the memorization-based, multiple-choice approach, which is still widely prevalent; then there's project-based learning where the problem is already determined; finally, there's design-based learning where you have to define the problem. That way of learning is part of every class here. We are trying to teach students how to frame problems versus repeat the answers.

To achieve this objective, schools require a new kind of educator, one who serves more as a coach and co-learner than as an authority in an academic subject. Wagner highlights two graduate schools of education that have developed new teaching models: the High Tech High Graduate School of Education and the Upper Valley Educators Institute in Lebanon, NH. In both of these programs, novice teachers spend most of their time working with a mentor in a school setting rather than sitting in lectures learning about education theory. In this way, these programs resemble the approach to teacher education used in Finland, a country that has produced outstanding results on international assessments. Interestingly—but maybe not surprisingly, give how entrenched traditional educational philosophies have proven to be—neither the High Tech High Graduate School of Education nor the Upper Valley Educators Institute has received accreditation from its respective regional accreditation agency.

Finding a Path

Given the scant attention paid to fostering creativity, it's no shock that the young innovators whom Wagner features in the book worked hard to create their own opportunities. Kirk Phelps left Phillips Exeter Academy and Stanford University without graduating, yet at 29 has already had successful careers at

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TEAM TIP

Look at the ways in which your organization recruits and rewards people. Do these practices support or undermine innovation?

Apple working on the iPhone and SunRun, a leading home solar power company. Zander Srodes became an advocate for sea turtle conservancy, authoring a book, leading ecological tours, and earning numerous youth achievement awards and grants—all while struggling in the classroom. Syreeta Gates, who founded SWT Life, which provides New York City teens with entrepreneurial coaching and personal development training, dropped out of City Technical College of New York before finding a sense of purpose through volunteer work.

Virtually all of Wagner's interview subjects benefited from the guidance of a mentor and participation in unconventional learning experiences. In many cases, the mentor's efforts weren't recognized or well compensated by mainstream institutions but instead were done as labor of love. Such is the case of Amanda Alonzo, who works as a science teacher and science fair faculty advisor. She spends as many as four hours a day after school mentoring 40 students a year on their science fair projects. For her efforts, she receives only a $1,800 stipend on top of her teacher's salary.

Encouraging Creative Work

So where do we go from here? Wagner is aware that schools alone can't shoulder the burden for developing innovators—parents and employers have a role to play as well. Based on his interviews with innovators and their families, he identified ways in which parents can encourage the "spirit of play, passion, and purpose that are the wellsprings for creative work." Some of these include allowing plenty of time for play and discovery; encouraging reading; providing toys that encourage imagination and invention; limiting screen time; and allowing kids to make and learn from mistakes.

Wagner also interviewed business leaders, including Tom Kelley from IDEO and Annmarie Neal from Cisco Systems, about how management practices need to change for young innovators to thrive in corporations. Many of the characteristics they described as being vital—such as the free flow of information up and down the organization and trust—are reminiscent of the characteristics of a learning organization as described by Peter Senge in *The Fifth Discipline* more than two decades ago.

The US Army is also aware of the need for a new organizational model. According to the report, "The Army Learning Concept for 2015," "[T]he Army cannot risk failure through complacency, lack of imagination, or resistance to change." The report recommends three steps for establishing a more effective learning model, including converting classroom experiences to collaborative problem-solving events; tailoring learning to the individual learner's experience and competence level; and using a blended learning approach that incorporate simulations, gaming technology, and other technology-based instruction.

Staying the Course

Recognizing that change can take time, Wagner concludes the book with a letter to today's young innovators, who may have to persevere in less-than-optimal circumstances. To encourage them to stay the course, he quotes dancer and choreographer Martha Graham:

> There is a vitality, a life force, an energy, a quickening that is translated through you into action, and because there is only one you in all time, this expression is unique. And if you will block it, it will never exist through any other medium and it will be lost. The world will not have it. It is not your business to determine how good it is nor how valuable nor how it compares with other expressions. It is your business to keep it yours clearly and directly, to keep the channel open.

The rest of us have an obligation, too, to give members of the next generation the tools they need to flourish. If we don't, they will pay the price for our failure of imagination and foresight. ◘

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