The Future of American Colleges May Lie, Literally, in Students' Hands

BYLINE: Scott Carlson

SECTION: THE CHRONICLE REVIEW; Opinion & Ideas

LENGTH: 3498 words

ABSTRACT
Increasingly, students see the value in not just a sophisticated understanding of the world's problems but also the practical know-how to find sustainable solutions.

FULL TEXT

A friend of mine who works at Saint John's University and the College of Saint Benedict, in Minnesota, recently told me a story: Her book group read Anna Lappé's Diet for a Hot Planet, one of many recent books to focus on the vulnerabilities of the industrial food system and the threats posed by climate change. The book's treatment of the topic held few surprises, and the solutions offered were equally well-worn and deceptively simple: Buy fruits, vegetables, and meats locally, and cook them at home.

My friend's big surprise came when the students in the group started talking about the solutions—and found themselves stuck: "Almost all the students said they didn't know how to cook," she told me, "and even the young, single adult employees in the group admitted they lacked both the know-how and motivation."

What makes this story even more poignant is its setting: at sibling colleges founded by monasteries, where self-sufficiency and sustainability were once a central ethic, as outlined in the Rule of St. Benedict. The Benedictine women and men here, along with many of the older alumni, can still remember when they milked cows, plucked chickens, and picked potatoes grown on the monasteries' surrounding land. Bread, furniture, preserved food, ceramics, and other daily necessities were produced by monks, sisters, and students on the campuses. While some remnants of that life still exist, much of it is gone.

I can't help being reminded of that story when in my daily work as a Chronicle writer I hear the chorus of complaints about the state of higher education. You've heard them, too: Higher education is broken; it needs reinvigoration and reinvention to get students out the door and on their own as soon as possible. Lawmakers say colleges need to make students employable and to create jobs. Some critics say colleges should use technology to scale up; others go so far as to bemoan the physical campus as an unnecessary, expensive burden in an online world. In that cultural and economic climate, liberal-arts colleges have been at pains to articulate their usefulness. They have emphasized that they teach students how to think, how to be engaged, world citizens—not merely how to do a job.

I agree that a liberal-arts education provides those intangibles. But maybe it's time that instruction—at least at some colleges—include more hands-on, traditional skills. Both the professional sphere and civic life are going to need people who have a sophisticated understanding of the world and its challenges, but also the practical, even old-fashioned
know-how to come up with sustainable solutions.

The problems that today's college-going generation will face in the future are enormous—and the stagnant economy is just the beginning. Climate change, fossil-fuel constraints, rotting infrastructure, collapsing ecosystems, and resource scarcities all loom large. Meeting those challenges will require both abstract and practical knowledge. For example, some scientists have fretted over the world's limited supplies of rock phosphate, which is used in agriculture. Because we live in a country that has more people in prison than in farming, most people could not tell you that phosphorus is one of the three vital nutrients needed to grow food crops, nor could they name the other two, potassium and nitrogen (the latter of which is produced mostly by burning finite fossil fuels). Even if students never work in agriculture, such knowledge could help them as aspiring businessmen, future policy makers, or mere citizens.

Certain colleges, specifically "work colleges" like Warren Wilson College, Deep Springs College, and the College of the Ozarks, have long-established curricula that blend manual skills with a liberal-arts education. But there may be room for more—especially at a time when some people question the practical value of a college degree. These days a number of colleges, particularly those in rural settings, are financially troubled and need new, marketable niches that separate them from the pack. Instead of viewing the physical campus as a burden, why not see it as an asset, even beyond the aesthetic attractions of the quad? With some imagination, couldn't these colleges use their campuses and rural settings to train students in valuable hands-on skills?

It's already happening at some institutions, particularly those oriented toward sustainability. In the green dorm at the University of Vermont, students can teach other students in "guilds" devoted to sewing, canning, composting, beekeeping, and other skills. L. Pearson King, a junior environmental-studies major, taught his peers how to carve spoons in a woodworking guild last year. "It's kind of trivial, but it's also cathartic and kind of fun," he says of the project, and the students in his group were immensely proud of their work. "To be active in the creation of an item forms a completely different relationship with that item."

At Dickinson College, students like Claire Fox, who just graduated with a double major in international studies and environmental studies, can get a practical education on the college's 180-acre working farm. "It truly enhanced my education," says Fox, who had never had contact with agriculture before leaving suburban New Jersey to go to Dickinson. "I walk away from college as a different person compared with some of my peers who didn't have that experience." And she walks away employed: She landed an internship in sustainable-development work in Costa Rica with the School for Field Studies. SFS told her that her work on the farm was the critical component of her application.

At Unity College, in Maine, students have had a hand in constructing some of the college's buildings, tending its garden, and working on renewable-energy projects out in the field with Michael "Mick" Womersley, an associate professor of human ecology. A former maintenance engineer in the British Royal Air Force, Womersley tells his students that a lot of relatively simple projects, like installing a $42 programmable thermostat in a home, can make a big difference in energy use, yet few people bother. Why?

"A lot of us are bred out of actually doing things," he said when I met him at a Maine sheep farm, where he was setting up wind-measurement equipment with the help of two students. "I find that is a big failing of the sustainability movement—we are so busy talking about things, but there is a ton of stuff to do."

Or consider Green Mountain College, a once-troubled institution in rural Vermont. Green Mountain, which now lands at the top of national rankings of sustainable colleges, has torn up a portion of its athletics fields to start a small farm that trains students in both cutting-edge and old-fashioned techniques in growing food without the help of petroleum. That means using and maintaining human- and animal-powered machines, using solar energy in innovative ways, learning the importance of crop rotations and animal manures, and, of course, getting the basics of growing carrots and tomatoes.

The professors there routinely tie the skills taught on the farm to the sustainability lessons in the classroom. "Many
educational institutions pride themselves on preparing students to lead a life of inquiry," writes Philip Ackerman-Leist, an associate professor of environmental studies who founded the college farm, in Up Tunket Road: The Education of a Modern Homesteader, a book about building his home and farm in Vermont. But "few actually challenge and support students to embrace the ecological questions and immediately begin living the possible solutions-not later but in the midst of the educational experience itself."

Thomas Maughs-Pugh, dean of the faculty and a professor of education at Green Mountain, connects the attention to practical skills to John Dewey, another Vermonter. Dewey was well known for advocating the incorporation of practical skills, like cooking or sewing, into everyday education. He was hoping to produce not chefs or tailors, but people who could grasp the bigger picture.

"If you are going to understand the world you live in, you need to understand how it got that way in a very practical way—you need to solve the problems that humans have been trying to solve for 10,000 years," Maughs-Pugh says. "The goal was to engage people with addressing the fundamental occupations of humanity—dealing with food, shelter, heat—and gain insight into how humans have solved these problems or addressed these problems, and what the limitations are."

People are quite aware that they are out of touch with the things that make their lives go, and as a result, you see a resurgence of interest in practical skills: Home gardening and raising chickens, for example, have become trendy again in the last few years, perhaps helped by the economic collapse and the embrace of local food. Etsy, a Web site focused on artisanal, handmade items, and the so-called "maker movement," which has a techie focus, both have helped to spread a DIY ethic. Bookshelves are stocked with titles like Making It: Radical Home Ec for a Post-Consumer World and Made by Hand: Searching for Meaning in a Throwaway World. Even in politics, voters seem to flock to people who consciously project a veneer of authenticity through practical skills. And so we get Sarah Palin, the elk hunter and frontier woman; Joe the Plumber, the straight-talking Everyman; and George W. Bush, the brush-clearing rancher.

There is a darker side, too. Post-apocalyptic flicks like The Road and Contagion and numerous zombie stories like The Walking Dead have become tremendously popular, allowing people to face the anxiety of civilizational collapse from the safety of Netflix. (The real-life breakdown of cities like New Orleans and Detroit is more unsettling.)

Derek Larson, an associate professor of environmental studies and history at the College of Saint Benedict and Saint John's University, gets his students to imagine the future by reading techno-utopian and postapocalyptic fiction. James Howard Kunstler's World Made by Hand, which describes America after an influenza pandemic and an oil shortage, left them shaken.

"I asked each of them, 'What skills would you have that would be applicable in that world?'" Larson says. "And they all said, 'Nothing.' They were actually kind of despairing at this. They said, I'd die. What would I be able to do? I would have no valuable skills." When the environmental-studies curriculum went through a revision recently, he says, students made one request: Include more practical and hands-on learning.

A grounding in the way things work provides resourcefulness and resilience—for individuals, communities, even nations. "One of the things that made Americans so formidable during World War II was that when the equipment broke down, there were enough farm boys around who were able to get the equipment up and running again," Wes Jackson, an agricultural geneticist and rural activist, noted in an interview many years ago. "The Germans, on the other hand, had excellent engineering and specialization, but the run-of-the-mill German did not know how to fix the equipment. So that was that."

The popularity of Matthew Crawford's Shop Class as Soulcraft is another sign of a hunger for these skills. An unlikely best seller, the book is a philosophical treatise on the connection between thinking and doing, the dignity of manual labor, and its value in modern society. Crawford, who earned a doctorate in political philosophy from the University of Chicago and runs a motorcycle-repair shop, alluded to the anxiety we feel with the illumination of a "check engine"
light when we have no skills to address it. And he posited that self-reliance is crucial to emancipation from mindless consumerism. (Eighty years ago, Aldous Huxley's Brave New World depicted a populace enslaved by consumerism, discouraged from fixing things. "Ending is better than mending," their hypno paedic proverb said.)

Work colleges have long met that anxiety by teaching the rewards of self-reliance. "When people ask me, 'What do you get out of the work program?' I say, 'Skills, maybe. Confidence, absolutely,'" says Ian Robertson, dean of work at Warren Wilson College, where students are required to put in hours as woodworkers, farm hands, janitors, carpenters, cooks, landscapers, and anything else the college needs to operate, in exchange for room and board.

Students at the college, he says, have a "swagger." Administrators there like to tell of a snowstorm in 1993, when the students fired up the tractors to clear the roads and took over the dining hall to keep essential services up and running, while everything around them shut down. "After graduation, I see students that then go to start farms, build furniture, start baby-clothing companies-they just see possibilities," Robertson says. "They have enough skills, imagination, and stick-to-itiveness to know how to do it."

Innovation and advanced manufacturing are often cited as panaceas for our economic doldrums. President Obama hopes for an increase in the training of young scientists and engineers and has high hopes for America's penchant for invention. "We can be the ones to build everything from fuel-efficient cars to advanced biofuels to semiconductors that we sell all around the world," he has said. "That's how America can be No. 1 again."

Richard Sennett hears that kind of talk and wonders how America would pull it off. Sennett, a professor of sociology at New York University and the London School of Economics and Political Science, has written extensively about manual skills and the work world in books like The Craftsman. He lauds the German education system, which has more effectively blended practical skills with on-the-job training.

"And they don't make the distinction between the liberal arts and skills," he says. "If you become a master electrician in Germany, you will probably read the great classics of German literature as part of your education. ... The notion is that the better educated you are, the better you will be as a worker, the more self-respect you'll have, and so on."

Compare that with the American system, which is "geared up for a service economy, where the idea is that people are going to prosper by getting farther and farther away from the world of skilled craftsmanship," he says. The higher-education elite doesn't value it.

"Can you imagine Harvard requiring shop class?" he says, chuckling. "To me the real issue is that neglected zone of what happens in junior colleges, community colleges, and trade schools-how to raise the game there, how to make that a more productive site for craftsmanship."

Robert Forrant, a professor of labor and industrial history at the University of Massachusetts at Lowell and a former factory-floor machinist, also has his doubts-but from watching his students. Most science and engineering students that he teaches do not have "a serious enough regard for the way things get made and the way that things arrive on our kitchen table to eat in the morning," he says.

Instead his students see themselves as designers, divorced from the dirty work of making. "Somehow we have this notion that we are going to be this country that has all the idea people-that all the Steve Jobses of the world will live in the United States," Forrant says. "From my vantage point, looking at history, that's rubbish. ... To somehow think that you can dream something up without really understanding what it takes to make it flies in the face of reality."

He tries to hammer home the lessons of history: Look at the pioneers of the computer industry, who were guys tinkering with machines in their California garages. The craft-brewing industry, which took off after homebrewing was legalized in 1978, saw 12-percent sales growth from 2009 to 2010. The organic-farming movement is in some ways an outgrowth of the back-to-the-land movement of the 1960s and 1970s. Although most people imagine that the future depends on sci-fi technologies, most of the technologies that make our lives possible today are fundamentally very old. The steam
turbine, the internal-combustion engine, the diesel engine, the induction electric motor, and the Haber-Bosch process, which fixes nitrogen as fertilizer, were all invented more than 100 years ago. Ha-Joon Chang, a University of Cambridge economist, contends that the electric washing machine, which came into use in the early 20th century, changed the world far more than the Internet did.

A key to innovation may be not just understanding some of these technologies but playing around with them as well. Stuart Brown, a renowned expert on play and education, has pointed out that companies have found that the most adept and innovative engineers are people who played with their hands when they were young, building and dismantling things.

Forrant says that even if his students just want to go into white-collar work, he emphasizes that they need to have some understanding of practical skills: "When I talk to them, I say, 'Look: When you are a manager someday and you have a problem on the shop floor, do you want to go down there and be a moron, or do you want to go down there and actually know what you are talking about?''"

At Hampshire College's Lemelson Center, design, innovation, and making are intimately tied. The center features a machine shop with lathes, milling machines, bar benders, saws, welding equipment, and other tools. Blacksmithing and bike-frame building are popular courses at Hampshire.

The shop is meant to be a place where students in disciplines as different as engineering, theater, and environmental studies can go to try out their ideas. "You just can't teach all the little nuances that come up when you're designing and building something yourself," says Colin Twitchell, an inventor and entrepreneur who is the center's founding director.

One of the shop's unexpected benefits has been the way it has strengthened the college community, with engineers and artists helping one another with their work. "You get this broad spectrum of people together, they talk, and there is a real exchange of perspectives that you can't get any other way," Twitchell says.

Hampshire's shop has even been a hub for students from other colleges. Several years ago, Sam Merrett, a motormouth environmentalist and bona fide grease monkey from Oberlin College, built his first biodiesel reactor with a friend from Hampshire in that shop.

Today he is the sort of entrepreneurial alumnus that any liberal-arts college would love to call its own. His business-Full Circle Fuels, which started in a defunct gas station on the edge of town in Oberlin, Ohio, and recently expanded with another shop in Hudson, N.Y.-converts diesel cars to run on straight vegetable oil. He has won fellowships and grants to start his shop, Merrett has converted cars and trucks for major businesses, and he worked with the state to develop Ohio's first vegetable-oil fuel pump. He was working on a 2003 Volkswagen when I met him on a summer afternoon to talk about how he got started.

Again, it was a marriage of liberal arts with practical skills. Oberlin's environmental-studies program introduced him to the problems of fossil fuels and the notion of alternative fuels. But Merrett, who says he was always eager to get out of the classroom, initially got his practical skills from the college's ragtag bike co-op, where students like him were handling wrenches for the first time, fixing up junker bikes, and welding bike frames together to make floats for town parades. The bike shop gave him the confidence to build biodiesel reactors and eventually tinker with his family's car, and his business took off from there.

Merrett feels that he is a clear example of why a student needs practical arts with liberal arts. "In terms of how I think about the world, how I think about the impact of my work on the world, and why I care about what I am doing, the education was immensely valuable," even if it doesn't help him day to day in a mechanic shop, he says. At a tech school, he would have missed out on that. "The idea of marrying the two is so appealing to me, because I do think that just a liberal-arts education doesn't leave me in a great position, either. It's limiting, just as a tech-school education is limiting."
It was reunion week when I met Merrett in Oberlin, and he said that some of his former peers who were coming back seemed a bit lost. They had spent their college years learning about, say, sustainable agriculture or urban food deserts, and they left college all fired up to tackle those issues.

"But they don't know the first thing about how to screw together wood to build a raised bed," he said. "In some ways, it leaves you in a place where you feel powerless to get involved."

LOAD-DATE: February 9, 2012

LANGUAGE: ENGLISH

GRAPHIC: Bea Carbone works on a ring in the blacksmithing shop at the Lemelson Center at Hampshire College, in Amherst, Mass.
Caleb Kenna for The Chronicle Review
The Future of American Colleges May Lie, Literally, in Students' Hands 2

PUBLICATION-TYPE: Newspaper

Copyright 2012 The Chronicle of Higher Education
All Rights Reserved