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Let's Get Serious About Cultivating Creativity

By Steven J. Tepper and George D. Kuh

Welcome to the creative era. To fuel the 21st-century economic engine and sustain democratic values, we must unleash and nurture the creative impulse that exists within every one of us, or so say experts like Richard Florida, Ken Robinson, Daniel Pink, Keith Sawyer, and Tom Friedman. Indeed, just as the advantages the United States enjoyed in the past were based in large part on scientific and engineering advances, today it is cognitive flexibility, inventiveness, design thinking, and nonroutine approaches to messy problems that are essential to adapt to rapidly changing and unpredictable global forces; to create new markets; to take risks and start new enterprises; and to produce compelling forms of media, entertainment, and design.

There is no shortage of best-seller hyperbole in such claims. But there is also no doubt that today's economic, social, political, and ecological challenges require something other than traditional, routine responses.

Regrettably, as other countries, like China, look to America as a model for how to educate citizens to be creative, we are undermining creativity in K-12 education through relentless standardized testing and the marginalization of subjects like art and music. Higher education is buffeted by similar pressures, as evidenced by reports like one recently published by the National Governors Association Center for Best Practices. It calls for colleges and universities to emphasize narrow, skill-based preparation for fields where jobs are plentiful. While well intentioned, such statements are off the mark in terms of what workers and citizens need to survive and thrive in a turbulent global economy.

Simply put, America cannot maintain a competitive position in the world order unless we better understand how to nurture creative talent and put in place policies and practices to do so. Nor can we just leave it to chance that we are adequately training rising generations to assume their roles as creative workers and responsible citizens.

First, we must move beyond the naïvely egalitarian, almost mystical view of creativity advanced by many creativity enthusiasts. This view suggests that to unleash creative capacity, we have only to set up conditions in which creativity will naturally blossom—informal workspaces, nonhierarchical organizations, flexible jobs, opportunities for cross-fertilization, and diverse and hip urban spaces. Such conditions are thought to encourage lateral thinking, brainstorming, and risk taking, all of which set the stage for innovation and entrepreneurship. No wonder creativity is an irresistible solution to our nation's most pressing challenges! It appears to flow like tap water,

requiring no significant investment in research or training. To transform our economy, we just have to get out of the way and let creativity grow free, like kudzu.

Existing research suggests otherwise. Creativity is not a mysterious quality, nor can one simply try on one of Edward de Bono's six thinking hats to start the creative juices flowing. Rather, creativity is cultivated through rigorous training and by deliberately practicing certain core abilities and skills over an extended period of time. These include:

1. the ability to approach problems in nonroutine ways using analogy and metaphor;
2. conditional or abductive reasoning (posing "what if" propositions and reframing problems);
3. keen observation and the ability to see new and unexpected patterns;
4. the ability to risk failure by taking initiative in the face of ambiguity and uncertainty;
5. the ability to heed critical feedback to revise and improve an idea;
6. a capacity to bring people, power, and resources together to implement novel ideas; and
7. the expressive agility required to draw on multiple means (visual, oral, written, media-related) to communicate novel ideas to others.

Where can we find this kind of rigorous training and deliberate practice in creativity? One place to look is arts-degree programs, which squarely address and nurture the cornerstone abilities and skills of creativity—analagizing; imaginative leaps; observation; ambiguity; dealing with criticism and feedback; producing complex, collaborative projects; and the ultimate challenge of communicating new ideas to discerning publics. Indeed, it is hard to compose and perform new music, stage a drama, design a new community center or video game, mount a solo exhibition, or interpret and perform a dance by Merce Cunningham without tapping into many of the creative abilities listed above.

Granted, other fields, like science and engineering, can nurture creativity. That is one reason collaborations among artists, scientists, and engineers spark the powerful breakthroughs described by the Harvard professor David Edwards (author of *Artscience*, Harvard University Press, 2008); Xerox's former chief scientist, John Seely Brown; and the physiologist Robert Root-Bernstein. It is also the case that not all arts schools fully embrace the creative process. In fact, some are so focused on teaching mastery and artistic conventions that they are far from hotbeds of creativity. Even so, the arts might have a special claim to nurturing creativity.

A recent national study conducted by the Curb Center at Vanderbilt University, with Teagle Foundation support, found that arts majors integrate and use core creative abilities more often and more consistently than do students in almost all other fields of study. For example, 53 percent of arts majors say that ambiguity is a routine part of their coursework, as assignments can be taken in multiple directions. Only 9 percent of biology majors say that, 13 percent of economics and business majors, 10 percent of engineering majors, and 7 percent of physical-science majors. Four-fifths of artists say that expressing creativity is typically required in their courses, compared with only 3 percent of biology majors, 16 percent of economics and business majors, 13 percent of engineers, and 10 percent of physical-science majors. And arts majors show comparative advantages over other majors on additional creativity skills—reporting that they are much more likely to have to make connections across different courses and reading; more likely to deploy their

curiosity and imagination; more likely to say their coursework provides multiple ways of looking at a problem; and more likely to say that courses require risk taking.

But what happens to these artists' minds over the longer term? We're only beginning to find out, and we need a lot more data to understand what creativity does over careers and lifetimes, and how it is best fostered.

Thirty-two years ago, science and industry leaders, working with the National Science Board and the National Science Foundation, decided that the future of America depended on our ability to collect regular information about the training and careers of science graduates in order to better recruit and prepare students for productive careers in the sciences. Today a consortium of foundations is working with the National Endowment for the Arts to collect similar information about arts graduates. The vehicle for this work is the Strategic National Arts Alumni Project (Snaap), an annual online survey and data-management system designed to improve arts-school education. It is the most ambitious effort yet to track the training, careers, and lives of arts graduates.

This work is most timely given that artists are harbingers of the new, contingent economy, piecing together multiple jobs, working across sectors, starting new enterprises, and embedding themselves in dense creative networks. Moreover, given the apparent lack of reported creativity in undergraduate programs in science, engineering, and economics, we can ill afford to neglect serious research around arts training, precisely where creativity is more explicitly emphasized. Over the past three years, Snaap has collected information from more than 18,000 arts graduates across 192 institutions. While it will be years before we have a comprehensive picture of the training and career pipeline for arts graduates, we are already gaining useful insights into this important group of potential creative workers.

First, the good news. Arts graduates are finding jobs, many as artists or in arts-related occupations. Among the respondents to our 2010 survey, only 6 percent were unemployed and looking for work, a third less than the 9.6-percent national unemployment rate. And contrary to popular wisdom, most arts graduates were not waiting tables or serving coffee. In fact, only 3 percent of arts graduates were employed in food services. A surprising 60 percent of recent graduates (one to three years out) work in arts-related fields, which is comparable to or better than the situation in many science fields. For example, the National Survey of Recent College Graduates (2006) found that among recent bachelor's-degree recipients who were employed, only 30 percent of math majors worked in a field related to their training, as did 50 percent of biology majors, 68 percent of computer-science majors, and 61 percent of physics majors. In other words, arts graduates who go on to work in arts-related occupations are about as many, proportionally, as science graduates who subsequently work in science-related fields.

Moreover, arts graduates say their education helped them become more creative. Even arts graduates in other occupations say they learned important creative skills in school that they use in their jobs. For example, among arts graduates who ended up as managers, software developers, or social-service workers, upward of 80 percent say that creativity is an important skill in their jobs; of those, more than four-fifths say their arts training provided a lot or quite a bit of training in creativity. And more than half of all arts graduates teach the arts at some point in their careers.

But Snaap data also reveal disconcerting patterns. Creative careers demand people who are entrepreneurial, resourceful, enterprising, and savvy about markets and opportunities. Sixty percent of arts graduates have been self-employed at some point; 57 percent hold at least two jobs concurrently; and 14 percent started their own companies. But many arts schools and colleges do a poor job preparing graduates for such enterprising careers, as alumni report low levels of satisfaction with the business and entrepreneurial skills they learned in school.

Graduates also report that their institutions are not particularly helpful later in their careers, when school networks, facilities, and continuing education might be particularly important to career development. And graduates still face significant financial challenges. Many—34 percent—choose not to work as artists because of student-debt levels. Others are lured away from the arts for higher pay and steady income. In fact, 52 percent of those who stopped working as professional artists did so because of better pay in other fields. Most arts graduates who are working as artists report very low levels of satisfaction with their income. Only 14 percent of actors are satisfied, 8 percent of fine artists, 12 percent of musicians, and 12 percent of graphic designers.

Findings from Snaap are helping educational institutions, the government, and industry determine whether we are leveraging arts education to maximize the talent flowing through the creative-work-force pipeline. Snaap can tell us where graduates are working; how many are employed in creative industries; where and how they are using the skills they learned in art school; and how schools, foundations, and the government can support those creative workers. While arts schools' enrollments continue to grow—more than 120,000 visual- and performing-arts students earned degrees in 2010—until now we haven't begun to know how well arts graduates are matched for the challenges and opportunities of the creative economy.

Collecting data on arts schools and arts graduates sometimes strikes the arts community the wrong way, as the spirit of art and creativity chafes at the modern tendencies to count, calculate, assess, and rationalize. But if creativity is to be a national priority and the centerpiece of a competitive work force, we cannot trivialize its importance by ignoring the institutions that specialize in preparing creative workers.

We all have a stake in the success of America's arts institutions and the preparation of their graduates for creative careers. These former arts students not only fill our world with remarkable and compelling stories, images, performances, and designs, but also apply their creativity to solve problems in a variety of domains. By focusing policy and research on these graduates, their training, and their careers, we can better shape our economic future and strengthen our democracy.

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