Schools must build a culture of creativity

BY GEORGE P. KORFIATIS AND VIRGINIA RUESTERHOLZ

The following sentence appears in the 2007 Report of the New Commission on the Skills of the American Workforce, titled "Tough Choices or Tough Times":

"If someone can figure out the algorithm for a routine job, chances are that it is economical to automate it."

It is a simple statement that carries enormous implications for the future of America's economy and way of life.

As the authors of the report contend, for our nation to maintain global technology leadership and thereby support good jobs and a high standard of living, great technology is not the only requirement. Leadership depends, rather, on a "deep vein of creativity that is constantly renewing itself, and on a myriad of people who can imagine how people can use things that have never been imagined before... that will capture people's imagination and become indispensable to millions."

In other words, it requires a culture of creative daring united with technological know-how of a high order.

To support such a culture, a nation's teaching infrastructure must be geared to produce innovators and inventors. It must educate people who can develop high-level solutions to problems, who will create new technologies that will advance the frontiers of the economy and opportunity.

In line with recent commentators such as Thomas Friedman, Daniel Pink and Norman Augustine, the "Tough Choices" authors view the American K-12 and university infrastructure as our national Achilles' heel. When it comes to equipping our young with relevant skills and with a vision of the global marketplace — their most important asset being the intellectual capital contributed by their founders.

We must reinvent our educational approach so we ensure not only that our students benefit from internationally competitive and rigorous coursework in science and mathematics but that we instill in them the proclivity to look for problems and opportunities, to use their ingenuity to create solutions and to consider the interrelated systems and impacts of any innovation.

Starting now, educators, industry leaders and elected officials must come together to form communities of creative enterprise to cultivate these characteristics in our students from the earliest grades. This imperative calls upon us to do things differently, to apply our own creativity to reshaping our education systems and outcomes.

"The best employers the world over will be looking for the most competent, the most creative and most innovative people on the face of the earth and will be willing to pay them top dollar for their services," say the "Tough Choices" authors. "Those countries that produce the most important new products and services can capture a premium in world markets that will enable them to pay high wages to their citizens."

There is much riding on our ability to meet this challenge.

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high numbers of "routine algorithm" citizens.

In a world where, to quote Vivek
Paul of India's Wipro, technology has
advanced from "globalizing indus-
tries to globalizing individuals,"
this situation cannot be viewed as
acceptable.

As engineers by training, we strongly
endorse this definition of our profession:
"Engineers use imagination, judgment
and reasoning to apply science, tech-
nology, mathematics and practical
experience. The result is the design,
production and operation of useful
objects or processes."

Designing and producing are
inherently creative enterprises, and con-
ceptualizing is the better part of engineer-
ing, especially for the future.

Currently in classrooms throughout the country, cre-
ativity is more likely to find expression in a creative writ-
ing class than in a science or mathematics class, or in