

# The decay of American education and the impact on our critical materials supply chain

The off-shoring of America's manufacturing industries that has precipitated the supply chain crisis dominating today's news cycle has had one very ominous and overlooked consequence. **America has lost its lead in people with the experience and skills to re-build and operate critical supply chains across an increasing number of industries.**

Not only has basic research and development in the refining and fabricating of critical metals and materials' products been severely reduced and eroded in North America, but also legacy skills are vanishing due to the simple facts of an aging industrial engineering and science population combined with little interest in the specialized education needed to replace them.

The small remaining critical materials R&D community is concentrated in the academic world where pie-in-the-sky ideas and number of publications, not sales of goods and services, or the good of the country, are the metrics for success. Industrial R&D and legacy manufacturing engineering skills are in short supply with no replenishment system being even contemplated. Government policies are set by academics with no industrial experience. Politicians do not seem to understand how ominous this is, because their information is filtered only through the academic and bureaucratic world.

The vast sums spent on social justice related education at all levels of our society and the emphasis placed on this by government and, increasingly by industry, has replaced the

emphasis on science and engineering that once dominated government and industry's educational focus and has depleted the funding for what remains of that prior focus. **The current attack on math and science in American K12 education is an ominous portent of national failure to even try to compete globally.**

There can be no "revival" of America's dominance in the production and use of critical materials for our age of technology without a massive reset of educational priorities.

America's "leaders" are set on satisfying the lowest common denominator, through a social media approach to solving problems. Whatever is easy and popular at the moment is the government's answer on everything.

Children have to be motivated from the very beginning of their education to understand the value to themselves and to society of education of the most capable of them in the sciences, engineering, and medicine. This process cannot be interrupted by ideologues without severe long-term consequences. The Chinese realized the importance of science and engineering more than 25 years ago, and they reformed their society's educational goals to ruthless selectivity among their children for the skills required. They have been enormously successful.

After World War II America had a similar awakening. Within 25 years of that ending Americans walked on the moon and science and engineering were celebrated. World War II's industrial R&D was controlled by the government. Afterwards private industry took over and gave the world modern solid state electronics, and a cornucopia of miniaturized electronics followed and changed the world and society forever. That American tsunami of new technologies that forever changed the world has now receded.

Its time either to refocus American education or lose forever our rapidly diminishing lead in technologies.