

The Future of Manufacturing is in the Third Grade

Society of Manufacturing Engineers

Celebrating its 30th Anniversary, the SME Education Foundation is focused on improving the quality of manufacturing education by encouraging increased attention to science, technology, engineering and mathematics (STEM) education.

DEARBORN, Mich., July 26, 2010 — The world admires the United States for our education system. Students from China, India, Russia and a host of other countries fill our colleges and universities. However, after degrees and work experience are secured, unless they are offered extraordinary salaries and benefits by technology-based companies, they often return to their respective countries, while the United States continues to report a lack of skilled workers.

In 2003, manufacturing was a striking addition to the national agenda which included evaluating the state of the industry, education and workforce. At the time, this topic received attention from all levels of government, across all news media. That same year, Saul K. Fenster, PhD, president emeritus of the New Jersey Institute of Technology (NJIT), University Heights, Newark, N. J., served as president of the SME Education Foundation. He concluded that while the prominence of these issues was certainly a validation of the Foundation's work, it was also a call to action. He accelerated the expansion of its efforts requiring a great level of commitment from its leadership, volunteers, and donors.

Says Fenster, "Science, technology, engineering and mathematics (STEM) education is not only a prelude to engineering, but also to innovation manufacturing in the 21st Century. STEM education is also crucial to fields in all areas of society including the financial, medical and biology sectors. Engineering is a problem-solving profession, and when young people realize it is creative and fun, they are less apprehensive about its more challenging curriculum, and learning is made significantly easier."

The Gateway Academy, a summer day camp program, introduces young people to science and engineering. This summer, more than 4,200 boys and girls between the ages of 11 and 14, are attending 214 sessions at the Gateway Academy at 187 sites in 34 states. It appeals to students with hands-on, project-based courses where students have fun while applying the fundamentals of science, technology, engineering and mathematics (STEM) education. The program is operated by Project Lead The Way (PLTW), a national nonprofit organization, and funded by the SME Education Foundation.

An example of its popularity this year is the Gateway Academy held at Green Bay West High School in Green Bay, Wis., where students learned to make cars out of paper, catapults out of mouse traps and robots using computer software. Interviews with students, parents and teachers conducted by McLean Bennett, a local reporter from the Green Bay Press Gazette, found students so enthusiastic about the science and engineering day camp, they initiated their own projects and didn't want to

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leave at the end of the day.

Says Fenster, "In our current economic conundrum, the nation is finally beginning to realize how critically important the manufacturing industry is. As manufacturing job losses continue to be reported, we need to make sure young people (and parents who influence their decisions) are not confused about the issues. The excitement and self-motivated learning experience we saw at the Green Bay summer camp is an example of how we can open the eyes of young people to their career potential."

The reality is that careers in manufacturing are becoming increasingly enviable. U.S. policy-makers are recognizing that having a manufacturing base that is strong, efficient and innovative is essential to our country's economic future and our country's world environment. As companies begin to re-think off-shoring, and consider re-directing their manufacturing and production facilities back to the U.S., skilled workers are and will be needed.

The word "innovation" which has become the manufacturing industry's linchpin—will keep this highly-charged industry from falling off its axle. As innovation expands advanced technologies, educators need to be better educated about their digitally enamored students, and how better to reach them with learning processes to which they can relate. Preparing for a career in manufacturing is no longer based on following the education standards created fifty years ago.

According to Arthur Levine, president of the Woodrow Wilson National Fellowship Foundation, and president emeritus of Teachers College, Columbia University, "The clash between old and new is manifest in profound differences between institutions of higher education and the students they enroll. Today's students are digital natives. They are growing up in a world of computers, Internet, cell phones, MP3 players, and social networking."

Their 24/7 lifestyle, unbounded by physical location will affect how they perceive job opportunities and how they will prepare for them. These scenarios are re-inventing the manufacturing industry as we know it. "Today, while most production takes place in a plant, increasingly there are also places like the home (telecommuting), space (satellites that move data) and on rooftops of homes and buildings (solar panels)." Source: Manufacturing Resurgence – A Must for U.S. Prosperity, the National Association of Manufacturers (NAM).

Major support from the SME Education Foundation has included:

- An investment of \$5.3 million in youth programs, helping over 15,000 young people explore career opportunities in science, technology, engineering and mathematics (STEM) education;
- Grant-funding of over \$4.7 million in scholarships to students pursuing manufacturing-related careers, and
- An investment of \$17.3 million in grants to 35 colleges and universities to develop industry-driven curricula.

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The SME Education Foundation is committed to inspiring, supporting and preparing the next generation of manufacturing engineers and technologists in the advancement of manufacturing education. Created by the Society of Manufacturing Engineers in 1979, the SME Education Foundation has provided more than \$31 million since 1980 in grants, scholarships and awards through its partnerships with corporations, organizations, foundations, and individual donors. Visit the SME Education Foundation at www.smeef.org [1]; a new website supporting advanced manufacturing at www.CareerMe.org [2] and an award-winning website for young people, www.manufacturingiscool.com [3].

[SOURCE](#) [4]

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[1] <http://www.smeef.org>

[2] <http://www.CareerMe.org>

[3] <http://www.manufacturingiscool.com>

[4] http://feedproxy.google.com/~r/sme/~3/q01SrOZ_PSU/get-press.pl