



I write this shortly after the terrible earthquake/tsunami disaster in Japan. That event will affect not only the lives of every Japanese person, but also most everyone else in the world somehow. It will certainly affect the structural engineering profession, as more information is developed and studied in an effort to make our constructed works more tolerant of natural disasters.

One of the more troubling images to come out of that horrific event is the disturbing YouTube video of a young college student ranting about the number of Asians in her school. Yes, there are a lot of foreign students in American universities, particularly in the technical fields like science, medicine and engineering. Since the beginning of the last century, and probably even before that, students from all over the world wanted to come to the United States to get a “first class” education in the most technologically advanced nation on earth. But the problem is NOT that foreigners are flooding our technical universities; the problem is that American students are NOT flooding them.

As I touched on in this column previously (*Engineers and Shoe Strings*, STRUCTURE® magazine June 2008), the problem as I see it is that Americans, particularly the upcoming “Millennial” generation, are no longer impressed with technology. It is everywhere. There are few places in the US where there is the kind of technological gap between the very poor and the middle class that you might see in Africa or China. You will not see images from the US of a man plowing a field with oxen as a jet plane takes off nearby.

Consequently, unlike many parts of the world, in our advanced nation no one is awed by technology any more. Few give a second thought to how things come to be. Every high school student now has a slab of plastic in his pocket that functions as a telephone, a camera, a video camera, a music player, a radio, a TV, a calculator, a computer, a GPS receiver, a game box and a myriad of other fantastic devices. This was hardly imaginable even 10 years ago. The technologies in your phone or laptop are truly mind-boggling. Even the ability of an unthinking college student to record a video and instantly post it on the Web, for people the whole world over to see, is not considered to be amazing. It is becoming just another ordinary occurrence in our modern society, where another new device or capability pops up almost daily.

Is it any wonder that young folks these days have little interest in things technical? They are totally immersed in technology that is simply handed to them, ready to use right out of the box. There is no longer an interest in finding out how a radio works by building one in your basement. In fact, hardly anyone makes anything for themselves as a hobby anymore. I believe that this has had an impact on our business, as younger engineers seem not to have as much of a sense for how to put things together and make them fit. They have had little experience in actually making something.

There is a lot of discussion these days about our education system and how it is failing, especially when it comes to science and math. I would submit that the basic things one needs to know in science and math have not changed much since the time of the Apollo space flights. What has changed is society’s inclination to pay attention to them. There seems to be an irony in the fact that as a society gets more technologically advanced, its citizens become less interested in that technology.

Especially in the last 50 years, there has been an unimaginable explosion of technology, and that explosion will continue at an exponential rate. However, will America continue to be the techno-leader in the future? Possibly not, if the upcoming generations are not interested in science and engineering.

By now you must be thinking that these are the ramblings of a member of the “boomer” generation, and you would be right. However, I would suggest that much of today’s technology was invented by boomers and advanced “Gen X’ers”. But those generations failed to keep alive the general societal interest in the technical fields. The early Millennials are now coming into positions of influence. Will they continue the slide, since they are the first generation to have lived in the digital age from birth? Many books have been written recently on how to deal with this new generation entering the work force. That is another subject altogether.

There are encouraging things happening. There is more discussion these days about how to get the youngest of the Millennial generation, those still in primary school, to pay more attention to science and math. As with everything these days, there is an acronym for this – STEM, for science, technology, engineering and math. Some school districts are starting special STEM programs or constructing STEM buildings to concentrate on these subjects. Still, the change needs to be societal and not just left as yet another burden on our school systems. If a general societal shift could start the swing back toward a greater interest in STEM, that may be the trigger needed to initiate the next generation. According to those that study these things, “named” generations change only after a major societal change causes a shift in the way children are raised that results in a difference in their attitudes.

We as engineers can do our part. Do not miss any chance you get to impress upon kids – and adults – that everything they take for granted in modern life is the result of scientific research, technological refinement and engineering development. ■

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