

American Manufacturing: We Can Do It!

I was overwhelmed and pleased by the feedback from my previous article (**The Most Productive Nation**). The United States is the most productive nation in the world, but we are going to lose our lead **big time** unless we wake up to the fact that our competitive edge is slipping because of political bickering, flawed assumptions, and out-dated thinking by many top decision makers in education, government, and business. We are productive for many, many reasons. Our skilled and knowledgeable workforce continues to show that we can take old plants and make them very competitive. We can take advanced manufacturing practices and leap so far ahead of our competition that it will take them years to catch up... then we'll be just that much further ahead. We can take up a challenge and rally to win in light of seemingly hopeless odds.

We can do it, but we have to consciously choose to do things differently. I have recently seen textile plants and furniture factories in the U.S. that outperform their peers and continue to defy the odds of plant closings and outsourcing. I have seen auto manufacturing plants and suppliers all over the U.S. outperform many of their “big-three” peers. I have seen young people excited about their jobs in manufacturing and industrial maintenance. I have seen plants where a “can-do” attitude prevails, where “whatever it takes” is the motto, where there is “hustle” in the way people work. We *can* do it! There is living proof all over America that we can create productive workplaces with meaningful and rewarding careers when 1) there is a burning desire to do it, 2) leadership provides the necessary resources, and 3) organizational teamwork focused on common goals truly exists. And yet we are being sabotaged by our troubled vocational-technical education system and flawed perceptions about careers for our younger generations and those who are already working.

Our education system: Many of our school boards, school administrators, teachers and counselors, state and federal departments of education, our government and politicians, our society, and our institutions of “higher learning” are missing the point. They seem to have lost sight of what it has taken to make and to continue our “most productive nation” status. Look at our junior high and high school programs today. In fact, look at these programs for the past 20 to 30 years. What has happened to career education, industrial arts, vocational education for the trades? We as a nation have almost completely gotten away from promoting careers in manufacturing. We have avoided discussing careers in industrial maintenance. Our news media broadcasts and publishes time and time again “manufacturing job losses” in ways that sound like plant closings rather than productivity improvement and up-skilling jobs. When manufacturing jobs are transferred (outsourced) to domestic contractors, they are removed from the “manufacturing” roles and added to the “service industry” roles, thus appearing as lost manufacturing jobs. This has happened for years with engineers, accountants, information technology staff, and maintenance. We are largely becoming an unsustainable “service economy” by default, and our educational leaders respond by de-emphasizing jobs in manufacturing and maintenance, just to name a few.

A college education: In general, our society has assumed and testified that a college education is essential to get anywhere in life but has failed to recognize the fact that a post-secondary vocational-technical education program, certificate or degree granting is also a college education. We focus intently on making sure a generation of children and young adults can pass a test showing the effectiveness of their teachers and their schools, and yet many colleges have established “remedial” classes to compensate for the shortcomings in our public school programs.

Societal influences: Plato’s concept of a fair and just society was one in which all people were able to achieve their potential. Look at how our society promotes that a college education is the key to success in life. But about half of our high school students are not college bound, are not prepared for college, and will not benefit from a solid career preparation before they graduate high school. This forgotten half is robbed of their true potential. Career education, industrial arts, vocational education classes that prepared many of the Baby Boomers and our parent’s generation are almost gone. Emphasis on “no child left behind” and college preparation has left little room for the educational preparation for the full spectrum of successful, rewarding, meaningful careers.

Let’s reflect for a moment on the insights of John W. Gardner, who served as secretary of Health, Education and Welfare in the Johnson administration and received the Presidential Medal of Freedom, our nation's highest civilian honor:

“We must learn to honor excellence in every socially accepted human activity, however humble the activity, and to scorn shoddiness, however exalted the activity. An excellent plumber is infinitely more admirable than an incompetent philosopher. The society that scorns excellence in plumbing because plumbing is a humble activity and tolerates shoddiness in philosophy because it is an exalted activity will have neither good plumbing nor good philosophy. Neither its pipes nor its theories will hold water.” (Saturday Evening Post, Dec. 1, 1962)

More than 45 years ago, the pressure for a college education was launched. In 1962, I made the decision to defy my high school (Oops. I just dated myself.) counselors who were pushing me into college preparation courses: I chose both college prep and shop classes, forgoing recommended electives and study halls. I received my college degrees and went into teaching students in vocational-technical subjects as a career. What about today’s “*humble activities*”—our jobs in manufacturing and maintenance? How would you explain what these jobs are, what it takes to be successful, what the rewards are? I guarantee that you and I would most likely answer these questions differently than many of our educators and counselors, politicians and business leaders.

Occupational outlook: Let’s look at the jobs of industrial machinery mechanics and maintenance workers as defined by the 2006-2007 US Department of Labor (DOL) *Occupational Outlook Handbook*, which states the following: “Highly skilled mechanics usually learn their trade through a four-year apprenticeship program (usually sponsored by a local trade union), while lower skilled maintenance workers receive short-term on-the-job training in order to perform routine tasks such as setting up, cleaning, lubricating, and starting machinery. Employers prefer to hire those who have completed high school or technical school and have taken courses in mechanical drawing, mathematics, blueprint reading, computers, and electronics.”

You and I would probably dispute the DOL job description as well as the education and training requirements as we reflect on our own advanced manufacturing practices, equipment reliability problems, and/or the shortage of skilled maintenance people in the local labor pools. Trade unions have been in decline for more than 30 years. Apprenticeship training programs, union or not, in mechanical maintenance have also declined over the past 30 years. So does that mean that most of our industrial machinery mechanics and maintenance workers have been trained (?) as “*lower*

skilled maintenance workers with short-term OJT?” Following someone around and picking up on their knowledge and their methods is unacceptable in today’s competitive environment. However, OJT can be very effective if it is formal, structured, on-the-job learning with a skilled coach or trainer and related studies in concepts and theory. Unfortunately, our 2005-2006 “Status of Maintenance Training in America” survey indicated that most employers listed “informal OJT” as the most-used training method measured by “informal performance assessments by supervisors” for maintenance job roles with “no formal skills and knowledge identified.” Most small employers (fewer than 500 employees) seem to struggle with the available time and financial costs of formal workplace training. The largest group (47%) of employed Americans work in establishments ranging from 20 to 249 employees where, historically, training budgets have been decimated over the past decade or two. Most manufacturing plants and utilities are considered “small” operations.

We must prepare for the future success of America now. We must bring formal, structured education and training into the workplace. We must change the course of our public school systems. We must do this to retain our standards of living and our “Most Productive Nation” status. The future we are creating for our children and grandchildren is at risk because we are not paying attention to our revenue producing capital assets and our nation’s infrastructure. Four of the occupations having the “largest numerical growth between 2004 and 2014” according to the US Department of Labor are maintenance and repair workers, electricians, auto service technicians, and yes, plumbers. Not one of these occupations requires a “college degree” in the traditional sense. Yet the more they are formally prepared, educated, and trained, the more successful they and their employer companies will be... the more secure our nation and our standard of living will be. The time for action is now! Let us know what you are doing.

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Robert M. Williamson
Strategic Work Systems, Inc.
Columbus, NC 28722
RobertMW2@cs.com
www.swspitcrew.com