How Do Dreams Become Reality?

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In the May 2017 issue of Benchmarks, I offered comments on logic and common sense. I also promised this follow-up article to look more closely at ideas related to the future of surveying – teaching, learning, disruptive innovation, adopting digital technology, and building on Palatiello's comments about refurbishing our professional image. I readily admit that my articles are somewhat "idealistic." That is done on purpose to dream about what might be possible and to ask what it takes to improve on what we now have. Of course, if the status quo is acceptable, no action is required. But, I'd like to think that we should and can do better.

A constant theme heard during my entire professional career is: "Education will be the salvation of our profession." I have echoed that statement, promoting the value of a 4-year degree for professional surveyors. I still believe that the effort made to obtain a 4-year degree (education) is justified. Undoubtedly that perspective includes both common sense and logic but, regarding the future of surveying, common sense and logic are not mutually exclusive. Yes, there is direct correlation between education and successful professional practice but the condition of "necessary and sufficient" as required by strict rules of logic are not met. Having a 4-year degree in surveying does not, by itself, qualify one to be a professional surveyor. That being the case, what is the best approach to establishing and enforcing educational requirements for licensure? The question is legitimate – meaning we need to discuss and debate merits of improvements. I will continue to insist that surveyors need to stand toe-to-toe with other professionals in areas of education, experience, and practice. We also need to remember, "one size does not fit all." Diversity and various levels of specialization are normal.

One thing I've observed of surveyors and the surveying profession is that we truly enjoy what we do so long as we can engage in meaningful activities – being productive and getting something done. Some of us enjoy surveying so much that we knowingly forgo a higher paying position for the privilege of continuing to enjoy what we do. That is a violation of the Peter Principle and I've done it myself. But I am also very grateful that I've earned a decent living doing what I enjoy. Even so, there is a part of me that remains dissatisfied with the status quo – also known as living in the past. In my view, the digital revolution offers many opportunities for anyone to be part of some rather exciting technical and professional advances. Taking advantage of those opportunities takes effort and practice. I believe that we should discuss challenges seriously and identify courses of action that can improve our circumstances. Success will not be handed to us on a silver platter but establishing a vision and working together to reach a goal (be it personal or collective) can be very satisfying and rewarding. The question is, how does a collective vision become reality?

For me, answering that question goes back to education and learning. I've enjoyed a measure of success in my teaching career but I've never taken a formal pedagogy course devoted to effective teaching. I've relied heavily on common sense, what I've learned much from various mentors, and extensive reading. I am comfortable with ABET's commitment to life-long learning and I believe that ABET accreditation is an essential element of curriculum design. But, here too, we need to admit that having ABET accreditation does not necessarily guarantee that an accredited program is a good one. I believe that learning is the key to success.

Previously I mentioned fascination with a book, "Make it Stick" (2014) by Peter C. Brown. Last summer while in Virginia I had occasion to visit with a retired biochemistry professor from the Medical College of Virginia. He recommended that book. It is not an easy read but that book is devoted to pedagogy and describes practices I could have used over the years. Luckily, I can identify with some things I did right but I was struck by the evidence that the traditional lecture is probably one of the weakest learning practices. Those who have sat in my lectures know that I love to hear myself talk. I could have and should have done better.

The book also decries the practice of cramming for an exam. Rote memorization and cramming do have some short-time benefits, but long-term learning is best reinforced by methodical periodic recall – quizzes are probably the best example. In reading the book, I was also struck by the concept that the best way to increase knowledge is to interrupt the forgetting process. Go figure. You need to hear it, read it, or do it first (so you have something to forget), but well-timed quizzes do interrupt "forgetting." Just as important, it appears that those outside survey labs were probably much more beneficial than I ever realized.

Since retiring I've spent a lot of time working on the Second Edition of "The 3-D Global Spatial Data Model: Principles & Applications." It has been said that the best way to learn something is to teach it to others. I concur. But, I will also attest that writing a book is an excellent way to find the limits of one's knowledge. Writing, for me, is tedious time-consuming process. Writing, re-writes, revisions, and, in some cases, completely scratching an entire section can be frustrating. But, the publisher now has the entire 2nd Edition manuscript and the book should be available in late July – see www.tru3d.xyz.

I've rambled on a bit and need to tie it all together. I'll be happy to listen to your ideas about dreams and goals related to improving the surveying profession but sharing your ideas with other NMPS members will probably be more productive. In the meantime, this is what I came up with:

1. John Palatiello was absolutely correct at the 2017 NMPS Conference in stating that we need to address the image issue. We need to challenge the status quo and dream more about realizing the benefits of modern "digital" practice. Dreaming is a prerequisite to action and action is a prerequisite to success.
2. Having said that, stewardship of land boundaries at all levels is an awesome responsibility. We must never relinquish that mandate and we need to maintain the highest level of professional integrity to remain worthy of that pubic trust. Unlike artisan glass blowers of years ago, we must never allow ourselves to be replaced by technology. I took a picture of a glass blowing machine and the sign below in the Henry Ford Museum summer of 2016. The picture of the machine is lit badly and would not reproduce well.
3. We cannot expect other spatial data disciplines to wait while we surveyors master the concepts of working with 3-D digital spatial data. The global spatial data model (GSDM) was begat by the digital revolution and grew out of the surveying profession. My aspiration is that surveying will always get the credit for bringing the GSDM to fruition. Publication of the 2nd Edition will open up the race to all.
4. Learning is synthesizing new information into an existing knowledge base. Knowledge is fundamental to understanding the difference between correlation and cause/effect. But, it is not yours until you "own it.'
5. Critical thinking is essential to evaluating consequences – intended and unintended.
6. Life is for living and satisfaction in life comes from doing something worthwhile for humankind.