BY HOWARD JOHNSON, PhD

Why teach science?

Jake, a high-school student, wrote to me on behalf of his science class. Our exchange follows.

Jake: What interested you in your profession?

Howard: My father is a nuclear physicist. He instilled in me a natural curiosity about how things work. In third grade, I began reading some of his old books, starting with the *Handbook of Mathematical Tables and Formulas*. At first, I couldn't understand the notation, but I understood that the book held great secrets. Later, in school, while my classmates were still adding and subtracting, I was working with square roots and complex numbers. When my dad gave me a battery and an ammeter, I became hooked on electrical engineering.

Jake: If you could talk to my classmates, what would you tell them about their education and goals?

Howard: Pick a hobby that teaches you something. Successful people absorb 99% of their knowledge outside the classroom. This idea does not mean you should skip school. It means you should learn 100 times what school has to teach. A useful hobby engages your mind and introduces you to like-minded, success-oriented people. Successful people *love to learn*.

People lacking useful skills or knowledge are forced to trade their time for money. Time is all they have to offer. An hour of uneducated time pays only about $7 in the United States.

Successful people cut a different deal with life. They do not trade their time for money. As Robert Kiyosaki outlines in his book *Rich Dad, Poor Dad*, successful people directly create value and then trade that value for money.

My way of creating value involved

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first learning the art of high-speed digital design. Once I mastered it, I began teaching seminars in that area. My clients pay me not for the time I spend in the classroom, but for the lifetime of experience I bring with me and for my ability to communicate that experience in a way that improves their technical capabilities and, often, changes their lives. That's value. Here's the good part: I get to sell the same lifetime of experience over and over. I've done about 250 classes so far and expect to continue for some time. That is the way value works. You never run out of it.

Jake: How does your science background help you in your everyday life?

Howard: Professional educators constantly ask this question in the hope that someone, somewhere, will articulate a convincing reason as to why all children should study science. I don't think that articulation will ever happen. Science is not for everybody. You as an individual don't really need it. You could live like an aboriginal, running around naked in the forest chasing deer with bows and arrows for all I care. There is a catch to this argument, however. The North American continent lacks the space and resources required to support hundreds of millions of low-tech, aboriginal people. Without industrial processes and machines, the vast bulk of the population would die. To avoid that catastrophe, we as a society must continually train people to build and service the machines. That is the primary purpose of science education—to seek out and find those few curious, self-motivated people who want to know how everything works and encourage them to save the rest of humanity. Quite a noble calling.

Jake: What is the most important thing you have ever learned and why?

Howard: There is no great intellectual gap separating you from the people who control the world's resources and direct its future. If any gap exists, it is only a gap of determination and will power.

Good luck to you, Jake.**EDN**

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Howard Johnson, PhD, of Signal Consulting, frequently conducts technical workshops for digital engineers at Oxford University and other sites worldwide. Visit his Web site at www.sigcon.com or e-mail him at howie03@sigcon.com.