

CHAPTER 47

LIFELONG LEARNING GROWING OR DECAYING

There is no choice in the matter of lifelong learning if you want to remain a viable contributing engineer throughout your career. Either you endorse it, live by it and continually grow, or you quickly decay and become obsolete. Lifelong learning is a critical career skill every engineer should possess. Change is the only thing constant in life and lifelong learning is how you stay on top of all this change.

The reason lifelong learning is such a critical skill is the extremely rapid pace of technology development and information exchange in our global economy. Globalization and international markets are rapidly driving engineers to seek out new tools, more efficient methods, and lower-cost better performing technologies, with the ultimate goal of bringing better products to market in a shorter time. This can only be accomplished by continual growth and improvement fueled by constant learning year after year [1].

Regardless of what stage of your career you are in, whether you just graduated, in the middle of your career, or nearing retirement, you must constantly pursue a learning plan that keeps you updated with all the latest advances in engineering [2].

ENGINEERING KNOWLEDGE HALF-LIFE: HOW LONG BEFORE YOUR SKILLS ARE OBSOLETE

The engineering knowledge half-life is defined as the time it takes for half of everything an engineer knows to become obsolete or forgotten. Studies suggest, the average half-life for engineering knowledge is now in the 5 year range [3]. Specific estimates were even made for various types of engineering backgrounds that indicated a software engineer's half-life was only 2.5 years, and mechanical engineer's half-life was 7.5 years [4]. Based on this estimate of

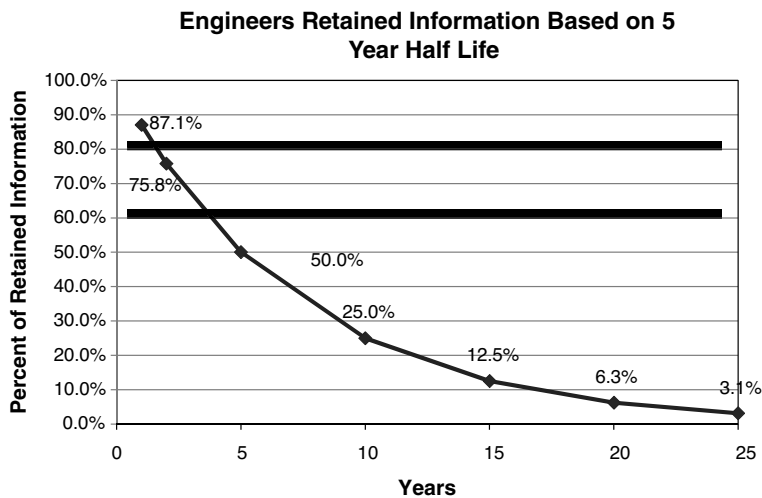


FIGURE 47-1 Retained knowledge for 5 year half life.

half-life for software engineering, what a student learns his sophomore year is 50% obsolete by the time he graduates. Figure 47-1 shows the percentage of knowledge retention for an engineer in a field with a 5 year half-life. The graph identifies the engineer has lost 50% of their knowledge base in 5 years and is down to only 29% left in 10 years. If you assume the person does not update their technical knowledge during their career, by 29 years, they will only have about 3% of the knowledge they once had. These are very alarming numbers and will hopefully convince you of the necessity for lifelong learning to survive.

Another observation made by career specialists is that having just one career in your lifetime is a thing of the past. They are now predicting the average person will have 2 to 3 different careers in their lifetime. If you stop and think about it, starting a new career is going to require a significant amount of new training or learning. Combining the rapid technical obsolescence with changing careers several times, clearly underscores the need for lifelong learning.

WHAT IS LIFELONG LEARNING AND WHY IS IT GOOD FOR MY CAREER?

Professor Beth Todd of the Mechanical Engineering Department at the University of Alabama has defined lifelong learning to have two major components. The first component is the ability to learn on your own. Hopefully as part of your formal education at the university, you learned how to perform independent research and learn things on your own. Simply put, it is the ability to learn on your own and use this talent when faced with problems in your career.

Todd identifies the second major component for successful lifelong learning is the realization that continuing education throughout your career is absolutely necessary. Old skills must be refreshed and updated with new and improved methods, as well as totally new skills that must be added to the engineer's repertoire.

► **Career Tip.** Lifelong learning is a necessary and key ingredient in the formula for career advancement.

Georgia Stelluto in her article "Leadership: A Matter of Choice in Lifelong Learning" points out that if you see yourself as a leader, you will choose to learn at a deeper level than most people around you [5]. Lifelong learning will be a cornerstone to your career helping to mold you and those, you lead.

► **Career Tip.** Great leaders make lifelong learning a cornerstone for building their career.

SIMPLE THINGS TO HELP FACILITATE LIFELONG LEARNING

Many great ideas exist for helping you to cultivate your lifelong learning skills [6–8]. Here are some simple actions you can take to help develop a habit of lifelong learning.

Always have a book to read or audio CD/IPOD to listen to. Visit your local bookstore, university bookstore, or look online for books to read when you have a few spare moments. Carry it with you or put it in a place where you can easily access it. Lunch time, late at night, or even audio books you can listen to on the commute to work are ways to catch up on the latest advances.

Put what you learn into practice. Nothing motivates you to learn more than trying something new and achieving great results. So if you learn a new technique, make a conscious effort to try it out.

Learn with a group or friend. Join others in workshops and group learning events. It is a great way to socialize and have fun learning at the same time. Joining an engineering society is a great way to get exposed to new methods.

Request a course catalog. Go online and request a course catalog from your local university to discover what new courses are being offered.

Teach a class. Put together the material and teach a new class at your workplace or local university. Research the material and develop the curriculum. The class does not have to be technical in nature, but can even be a hobby class.

SUMMARY

Lifelong learning provides you with continuous rewards throughout your career and is also good insurance in bad economic times. Lifelong learning

requires a mindset of continuous self-improvement. It is good for you as well as your company and a means for both of you to remain prosperous in an ever-changing world.

Have you identified any career actions you want to take as a result of reading this chapter? If so, please make sure to capture these ideas before you forget by recording them in the notes section at the back of the book.

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