Sailing up Olympus: casting a critical eye on Educational Technology

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Sailing up Olympus: casting a critical eye on Educational Technology

by

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A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Major: Education (Curriculum & Instructional Technology)

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Iowa State University

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First of all, I would like to thank all my instructors, classmates, and friends at the Center for Technology in Learning and Teaching at Iowa State University. It has been a long and enlightening journey. To the real Bill and Jeff: thanks, guys, for letting me include you in my little story.

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Most of all I want to thank my wife, Barbara Ann Mitchell Howard, whose love and support during this voyage up the mountain made it all possible. Always, forever, and then some, Barb.
ABSTRACT

The goal of helping our students learn to use technology in education well tasks us to develop ways of seeing beyond the quantifiable elements of the technology we are presenting to the qualities and assumptions that lie within. This broadened perspective will allow us to accompany instruction on how to use technology with a challenge to our students as to why the use of a given technology is appropriate.

This dissertation relates in narrative form how various selected technologies have been introduced into education over time, deconstructs the motives and goals of those responsible for introducing those technologies, and discusses the social effects technology has had on education.
INTRODUCTION

An instruction I remember well from my high school days began with the simple phrase: “in your own words.” Instead of the teacher distributing a multiple choice or short answer test, redolent with the bitter aroma of mimeograph ink, my classmates and I were instructed to take out our notebooks and “in our own words” compare and contrast two countries, or books, or fish; or we might be told to describe the nature of the universe or the workings of a carburetor; or we could be tasked with interpreting the hidden meaning within a sonnet. I enjoyed those sorts of assessment activities more than the standardized tests, the allegedly psychotropic nature of mimeograph ink notwithstanding, because they gave me an opportunity to not only relate what I had learned but also demonstrate my ownership of the content by putting it “in my own words.”

When we relate our experiences and understanding to others in narrative form, we do so with a variety of goals. For example, for a student the goal as mentioned earlier is to demonstrate understanding of a topic. In our everyday lives, Roger Schank in Tell me a Story (1990) states that we tell stories to each other:

- to illustrate a point, to make the listener feel some way or another, to tell a story that transports the listener, to transfer some piece of information in our head into the head of the listener, and to summarize significant events. (p 48)

Each of these goals has an underlying mythic quality that embodies the story that we are telling.

When we hear the word “myth,” we of the twenty-first century often think of stories of heroes, gods, and monsters, tales that we see as appropriate only to a classical studies setting or a Saturday morning children’s cartoon. We also apply the word to anecdotes of
dubious validity, such as the ubiquitous “urban myth” stories circulating about the Internet by way of e-mail. I am using the term here in its traditional definition, that of a narrative tale “explaining some natural or social phenomenon.” (OAD, 2005) In Primal Myths: Creating the World, Barbara Sproul (1979) tells us that myths “organize the way we perceive facts and understand ourselves and the world.” (p 1), and are therefore a powerful form of the phrase “in your own words.”

While myths are told in the narrative format, they are more than mere stories. Myths lend identity to those who hold them. They are a way of coming to understand one’s self. Most importantly, our myths illuminate who we are as a people or group. Regardless of culture, nationality, or point in history, they are what we use to describe the world and our place in it. Sproul describes our need for myths:

There is no escaping our dependence on myth. Without it, we cannot determine what things are, what to do with them, or how to be in relation to them. The fundamental structures of understanding that myths provide, even though in part dictated by matter and instinct, are nevertheless essentially arbitrary because they describe not just the “real” world of “fact” but our perception and experience of the world. (p 2)

Much like any other group that shares common interests, we in the field of instructional technology have our own myths. We have the myths that explain how the field developed, and myths that examine the impact various technologies have had, both positive and negative, on education. Our myths are not static; on the contrary, they change and grow in the telling. Sproul again:

Myths are true to the extant that they are effective. In a sense, myths are self-fulfilling prophecies: they create facts out of the values they propound. (p 3)
It would be appropriate at this time to share a little bit about my background and how I came to undertake this project. I began my study of computer science when computer programs were encoded on foot-thick decks of punched cards before trudging them across campus to the data center for processing. I was an early adopter of personal computer technology, buying my first Apple at a time when the cassette tape was the most affordable storage medium. Unlike many of my classmates in the field of instructional technology, I entered into the realm of computer-based training in the pre-World Wide Web days when program content resided on mainframes and students accessed their courses by way of dumb terminals. It was my experiences in computer-based training that led me to return to college and pursue a graduate degree in education. Before beginning my doctoral program, however, I took advantage of being back in school to indulge a lifelong passion for reading by completing a second bachelor’s degree in English literature, and writing a master’s thesis examining how the folklore of the Scottish border populace in the late seventeenth century was a way for them to deal with the cultural changes forced upon them by the outside world.

It is because of my multi-disciplinary scholarly background that I have chosen to present my dissertation in a narrative form. I believe that my work in the fields of computer science, literature, folklore, and instructional technology has allowed me to develop what Elliot Eisner labels an “enlightened eye” regarding our uses of technology in education. Elliot Eisner is a professor of education and art at Stanford University where he has worked for decades in the fields of arts education, curriculum studies, and educational evaluation (Eisner, 2006). In his book *The Enlightened Eye: Qualitative Inquiry and the Enhancement of Educational Practice* (1991), Eisner describes the “enlightened eye” as a form of educational connoisseurship that goes beyond merely observing and reporting. Students use
not only the scholarly techniques they have developed to present their unique interpretation of the subject, but also the art of appreciating what it is they are studying. By virtue of this process the students become educational critics. Speaking to the British Columbia Teachers’ Federation, Eisner said this about educational criticism:

Educational criticism is the art of disclosure. Connoisseurs can enjoy and understand the qualities of a performance, of a food, of an act, of a text, in private to themselves. Critics are people who transform the contents of connoisseurship into a public language that makes it possible for others less sophisticated in that particular domain, to notice the qualities that critic writes about. (Eisner 1998)

What Eisner is saying is that to relate well what they know, people need special skills in addition to the ability to understand the subject matter. They need to be able to see beyond the quantifiable elements of the object under examination to the qualities that lie within. In *The Arts and the Creation of Mind* (2002), Eisner writes:

Assessment and evaluation are often confounded with measurement, but there is no necessary connection between evaluating and measuring or between assessing and measuring. Measuring has to do with determining magnitude. Measures of magnitude are descriptions of quantity. They are not appraisals of the value of what has been measured. Assessment and evaluation are preeminently valuative; they ask about the merits of something. (p 180)

As an example of the contrast in ways of relating the observable quantifiable elements of something and the qualitative nature within, consider the following hypothetical description of a scientific study:
In this study subjects were trained to exhibit the desired behavior in order to obtain a food reward. In such an experiment the subject is able to generate certain motor-output, (the response R, e.g. running around, cleaning, resting, pressing the lever).

The experimenter chose a suited output to pair it with an unconditioned stimulus (US, e.g. a food reward). Often a discriminative stimulus (SD, e.g. a light) is present, when the R-US contingency is true. After a training period, the subjects showed the conditioned response even in absence of the US, demonstrating that the R-US association has been internalized. During one such training period, however, inadvertent reintroduction of the US resulted in disruption of the desired motor-output.

And now compare that to this tale from Aesop:

A prince had some monkeys trained to dance. Being naturally great mimics of men’s actions, they showed themselves most apt pupils, and when arrayed in their rich clothes and masks, they danced as well as any of the courtiers. The spectacle was often repeated with great applause, till on one occasion a courtier, bent on mischief, took from his pocket a handful of nuts and threw them upon the stage. The monkeys at the sight of the nuts forgot their dancing and became (as indeed they were) monkeys instead of actors. Pulling off their masks and tearing their robes, they fought with one another for the nuts. The dancing spectacle thus came to an end amidst the laughter and ridicule of the audience. (Fable 153)

Both examples tell the same story: conditioned responses can fail when an inadvertent stimulus is applied. The difference lies in the format used in relating the material to his or her audience. The first example is told in standard academic language, and is accessible to a
limited group of readers. The second is related in narrative prose, which allows it to be appreciated by a much greater audience. This illustrates Roger Schank’s statement, “A good teacher is not one who explains things correctly but one who couches explanations in a memorable (i.e., an interesting) format.” (p 15)

Perhaps the best-known modern example of educational research related in “an interesting format” is B. F. Skinner’s novel, *Walden Two* (1946). In it, Skinner describes an imaginary utopian community that operates under rules based on his own theories about behavior and interpersonal relations, topics he researched and wrote about in academic journals. He becomes an educational critic by transforming his understanding of the social sciences into a piece of literature that is now accessible to those not in his field.

Feminist critics, for example, can examine the role of women within *Walden Two*. Both men and women perform the stereotypical household tasks within his hypothetical community; so was Skinner advocating gender equality? On the other hand, as none of the leaders of his utopian community are female, was he reinforcing gender stereotypes? Social critics could look at the power structure Skinner described in the colony. The residents of Walden elect neither the community planners nor managers; so do the people have a voice in their governance? Moreover, how is the diversity of the individual rewarded when there is no diversity in outlook, goals, and values? While these sorts of questions are possible in response to a scholarly article, by using the tools of the novelist Skinner invited discourse from a broader audience.

In my opinion, had Skinner not been an educational psychologist but only a writer of fiction, his novel would most certainly have gained a different reception. *Walden Two* was so well-received by its readers that there were attempts to model real communities on the
social arrangements described in the novel, such as the Twin Oaks Intentional Community in Virginia and Los Horcones in Mexico. However, Skinner did not invent the genre of utopian literature; Bacon’s *New Atlantis* from the seventeenth century springs immediately to mind. Unlike Bacon and others, it was Skinner’s understanding of and appreciation for behavioral psychology coupled with an ability to describe his field in qualitative terms that allowed him to communicate with both scholarly and popular cultures. Just as Skinner reached a wider audience with *Walden Two*, my purpose in formatting my dissertation in narrative form is to share with undergraduates in teacher education programs a broader perspective of instructional technology.

This dissertation is a narrative that tells “in my own words” the story of how various forms of technology have been introduced into education, the goals (as we understand them) of those responsible for introducing the technology, and the watershed outcomes and effects the technology had. The narrative consists of three main parts: an examination of pre-computer technology, a contrasting look at how computer-based technology differs from what came before, and a critical discussion of the social effects technology has had on education.

Let’s look at a sample *technology as the solution to a problem*-type myth. This example illustrates the type of analysis that document contains, and also serves as a justification of why an examination of pre-computer technology and how it has affected education is worth pursuing.

As we well know, many kinds of technology were employed in education long before the days of the personal computer. Often a perceived problem existed within education, and technology was either developed or adopted as a solution to that particular problem. When
the blackboard was introduced in the mid-nineteenth century it was hailed by its proponents as a revolution within education. In *Tinkering toward Utopia: A Century of Public School Reform* (1995), Tyack and Cuban look at the blackboard and cite an educational critic of the time as saying:

> The inventor or introducer of the system [the blackboard] deserves to be ranked among the best contributors to learning and science, if not among the greatest benefactors of mankind. (p 121)

Our attitude toward this piece of educational technology from mankind’s “greatest benefactors” has certainly changed in the last century. Blackboards, and their cousins such as chalkboards and whiteboards, have become such a ubiquitous classroom feature that they are almost beneath our conscious notice. For example, during my time as a teaching assistant for our introductory course on instructional technology here at Iowa State, I noticed there is very little mention of how to use the blackboard other than brief advice on how to hold the chalk so it doesn’t squeak. More recently, while visiting an elementary classroom in West Des Moines, I saw that their whiteboard was completely covered by construction paper and wasn’t being used for its intended purpose at all.

Examining the myth relating to the introduction of the blackboard in education does more than simply provide a hard example of *sic transit gloria mundi* – illustrating the fleeting nature of fame – it gets to the underlying motivations of its proponents. If I conducted a poll today and asked teachers why the blackboard was invented, I would be surprised if the majority of them did not answer with some variation of “to write on” and left it at that. However, there is a Paul Harvey type “rest of the story” that I have not yet mentioned: proponents of the blackboard “system” in the nineteenth-century advocated its
use as a tool of educational reform. By focusing students’ attention on the front of the room and the teacher, the reformers cited in Tyack and Cuban argued, classroom management and discipline would be made easier, and increased learning would be the result. The blackboard becomes an example of how by examining the origins of an everyday piece of classroom technology we can go beyond a discussion of that technology and gain a greater insight into previous educational reform efforts.

This sort of analysis of what has come before in instructional technology is important because we are today, and have been for the last two decades, going through a period of educational reform centered on the use of the personal computer in the classroom. After examining how previous technologies were used as instruments of change within education, I take in my dissertation a contrasting look at how computer-based technology differs from what came before and place it in a different context.

There is a popular cliché that to a person with a hammer, everything looks like a nail, even when what they really need is a screwdriver. To expand on this construction metaphor a bit, some advocates of the personal computer’s use in education in the early nineteen-eighties promoted it as an über-tool, capable of not just performing the duties of common tools like hammers or screwdrivers, but potentially able to one day replace the tool-users themselves such as the contractors and perhaps even the architects who design what is to be built.

This optimistic belief in the Herculean abilities of computers has shaped how we have researched its use in education. In his book *The Computer in the School: Tutor, Tool, Tutee* (1980), Robert Taylor classifies the computer into the three categories mentioned in the title, all based on its educational use. Categorizing the computer as a tutor seems an apt fit, as its
usage in computer-based learning can be seen as a modern day extension of the behavioral psychologists’ teaching machines of the nineteen-twenties. As a tool, the computer is used to perform basic functions such as word processing. This category of usage is not out of line; in it the computer assumes the role of a pre-existing tool, the typewriter. It is the language used in naming the third category that I find problematic.

In this usage, as tutee, the computer is taught something by the student with the goal of reinforcing the student’s own knowledge of the subject. To be taught carries with it the assumption that the computer is capable of learning. I am bothered by the semantic connotations that arise from using the word “learning” in this way. Based on my thirty years of experience in working with computers I will attest that a computer is no more capable of learning than a file cabinet is. You can put something in a file cabinet and you can take something out, but the cabinet is not cognizant of what it contains. Describing a computer as capable of learning is a form of anthropomorphism, the attribution of human characteristics to a non-human object. This attribution, I feel, comes from confusing the externally visible programmed behavior of the computer with its inner functioning.

For the 1973 edition of Profiles of the Future, the scientist and author Arthur C. Clarke updated his essay “Hazards of Prophecy: The Failure of Imagination” to include his now famous “third law.” This observation of Clarke’s states: “any sufficiently advanced technology is indistinguishable from magic.” What Clarke means by this is that if the mechanism by which a device or system functions is not understood by the user of that device, then for that user the technology has transcended the realm of the knowable to something that has taken on elements of the supernatural – an act of faith is required on the part of the user.
An example of Clarke’s third law is the development of various “Cargo Cults” in the
Pacific islands following World War II as described by the noted scientist Richard Feynman
(1974). He relates that during the war some of the indigenous peoples of those islands
benefited from goods brought by airplanes. When the war ended and contact with the outside
world was discontinued there were tribes that wanted the planes, and most importantly the
cargo they carried, to return. These tribes kept the landing strips repaired, built replica
airplanes and control towers from grass and bamboo, and performed various rituals that were
similar in appearance to the activities performed by the servicemen. These people were not
unintelligent; they simply had little or no understanding of what events had transpired to
bring the goods in the first place. Instead, to the people of those islands airplanes were a
“sufficiently advanced” form of technology that they perceived as magic.

Educational researchers, such as Robert Taylor and others, who at the dawn of the
personal computer era attributed human-like abilities and qualities to those machines were
most certainly not unintelligent either. This misattribution is not the fault of the researchers,
as the behaviors of computers in popular culture from the time of their invention certainly
seemed human enough. For example, television and movies often depicted computers as
able of conducting conversations with their human users, such as on shows like “Star
Trek,” or movies like “Colossus: The Forbin Project.” In conjunction with their verbal
ability Hollywood’s computers almost always have one other quality: they can think, often
better than humans. The most infamous thinking computer may be the murderous HAL 9000
from Stanley Kubrick’s movie 2001. Who will ever forget the astronaut’s urgent request for
HAL to “open the pod bay doors” and the computer’s chilling response, “I’m sorry, Dave.
I’m afraid I can’t do that.”
Actual computer scientists, if anyone had bothered to ask them during this period, would say that the entire issue was much ado about nothing. As my education in computer science here at Iowa State taught me, computers are just overgrown adding machines, physically complex and delicate, and no more intelligent than a sheet of paper. However, the opinion of experts in the computer sciences usually went unmentioned and unheard, as it rather inconveniently didn’t fit in with the myth of the computer propagated in the media. Their depiction of computers as “indistinguishable from magic” continues unabated to this day.

This attitude regarding the abilities and promise of personal computers in education is one way in which this technology, and the issues surrounding it, is different from the technologies introduced into education previously. Many of the technologies used in the classroom, such as the earlier example of the blackboard, are there because they solved a specific problem. In part because of its pop culture heritage, the personal computer was seen as a unique opportunity for teaching and learning, unlike anything that had come before. Reality quickly intruded. Unlike their fictional counterparts, real computers couldn’t think, weren’t easy to use without technical training, and if they had hardware and software that allowed them to speak they could only repeat what you told them to say. On their own, they did nothing to solve the existing problems within education. Undaunted, educational researchers such as Jerry Willis in his book *Computers, Teaching and Learning* (1983) saw brighter days ahead thanks to the personal computer:

The computer has the potential to do much for us in terms of educational assessment and diagnosis. We have probably only begun to realize this potential. Most of the problems and dissatisfactions experienced to date are due to limitations in hardware
and software. Trends in these areas are promising, especially in terms of improved hardware at decreased costs. (p 223)

From our current perspective, I feel that Dr. Willis was correct in the early nineteen eighties regarding “trends” in computer hardware and software. Just as we learn in chemistry that gasses will expand to fill the size of their containers, software has grown in complexity as the hardware available for personal computers became more robust. However, regardless of advances in computer technology, the dissonance between what they can do and how they are perceived has not changed. Just as in popular culture, a cursory review of the language used in academic literature shows that the anthropomorphism of computer technology continues, and echoes of Dr. Willis’s comment regarding the computer’s “potential to do much for us” in education can still be heard. The full promise of what the computer can do for education is still to be reached.

Just as the adoption of computers into education came about in part because of society’s attitudes and expectations toward the machine, computers and other forms of technology have had a social effect on education. The French philosopher Jacques Ellul, in his book *The Technological Society* (1964), addresses this issue in his examination of how education serves society. He describes education as the technique, or in other words a form of technology, by which a society reproduces its values, and “the most important aspect of this technique is the forced orientation toward it. It is a social force directed toward a social end.” (p 347) As a social force, he is saying, education serves society by changing individuals to conform to the needs of that society. Ellul continues by indicating that the goal of reform in education is not about adapting education to the needs of the individual, but rather one of improving the technique of adapting people into society:
Children are educated to become precisely what society expects of them. They must have social consciences that allow them to strive for the same ends as society sets for itself. … The keyword of the new human techniques is, therefore, adaptation. (348)

I find myself agreeing with Ellul on this point that one of the goals of education has always been to pass on to the next generation the values of the current one. However, I think that Ellul here has gone beyond the idea of education as a form of cultural genetics and focused on the use of education as a technique that forces children into molds; they become worker serfs for society’s gain:

Social conformism must be impressed upon the child: he must be adapted to his society; he must not impair its development. His integration into the body social must be assured with the least possible friction. (347)

This is the key point in Ellul’s argument: education is a technique that adapts people, not a technique that people adapt to their own use. And the use of technology in education is one way of making that technique more efficient.

Ellul concludes that technology, by its very existence, changes a society (and by extension, education) to the point where it is no longer the same. He states that:

Only two possibilities are left to the individual: either he remains what he was, … and is at last tossed on the social rubbish heap, whatever his talents may be; or he adapts himself to the new sociological organism. (334)

His conclusion is dire: whether you choose to resist technological change or accept it, you lose. Once technology has been introduced into a system, such as education, that part of the system of which you consider yourself a member is already doomed.
As we consider the use of technology in education, with what options are we left? Is Jacques Ellul correct that our children are fated to become serfs that serve the needs of a technological society? As the cultural icon Captain James T. Kirk calmly states in the face of overwhelming odds in the movie *Star Trek II*, “I don’t believe in the no-win scenario.”

In an online forum discussion for the PBS show *News Hour* in 1996, Neil Postman answered a question about the dangers of our use of technology growing faster than our understanding of it with the following:

I don’t think any of us can do much about the rapid growth of new technology. However, it is possible for us to learn how to control our own uses of technology. The “forum” that I think is best suited for this is our educational system. If students get a sound education in the history, social effects and psychological biases of technology, they may grow to be adults who use technology rather than be used by it.

(Postman 1996)

This statement of Dr. Postman’s is what guides me in the conclusion I reach in my dissertation. It helps me to formulate a third option in response to Ellul’s twin options of obsolescence or assimilation in regard to the use of technology in education. I believe that computers can be a technology adapted to the use of education, not education to the use of computers. That adaptation can be facilitated in students, and in student teachers, by helping them to gain Eisner’s “enlightened eye” toward the history of various technologies used in education and the effects those technologies have had.

The goal of helping students to gain that “enlightened eye” toward the uses of technology in education tasks us as educators to learn for ourselves ways of seeing beyond the quantifiable elements of the technology we are presenting to our students, e.g. how to use
the Internet or how to create interactive multimedia, to the qualities and assumptions that lie within that technology. That broadened perspective will allow us as teacher educators to accompany instruction on *how* to use technology with a challenge to our students to answer the question of *why* the use of a given technology is appropriate. By addressing that question, our students will themselves become critics of their own education, and in my view, hopefully learn to see that the use of technology in education can be a means to an end, not simply an end in and of itself.
CHAPTER 1

Oh, for a muse of fire.

At least, I think that’s how this is supposed to start. Classical literature isn’t really my field of expertise, although I do have a certificate somewhere in my office saying I’m qualified to teach it at the high school level, along with civics and computer science. You might think that I had a little difficulty choosing a major as an undergraduate – but I digress. Where was I... oh yeah, muses.

At any rate, according to literary tradition if the narrator of a tale beseeches a muse for inspiration, and if the mood strikes her, she will bestow her blessing upon his or her effort. This heavenly endorsement ensures that the finished product is one of merit and quality, placing the author right up there with Homer, Virgil, and Shakespeare.

Yeah, right. Pull the other one.

Up until just over a week ago I put muses in the same category as other mythical creatures, like Santa Claus and honest politicians. More than that, I was taught in college that the whole concept of the muse was merely a way for authors to elevate their work above that of their peers. In other words, you better listen up, ‘cause the author is drinking from the heavenly tap.

So why I am going on about muses, you might ask, if they’re merely a literary device? Good question. Maybe it’s because I’ve recently learned to keep a more open mind about things. “There are more things under Heaven and Earth than are in your philosophy, Horatio.” – not bad advice there, Will. And maybe it’s because I’ve been hijacked into taking a magical mystery tour with two of them.
That’s right, two muses. In the all too real flesh. Double demigoddesses. Try saying that three times fast.

Not three meters from where I’m sitting there is a bona fide muse fixing supper over a campfire – a campfire for which, I might add, I gathered the wood. She slices, she dices, she puts words in the mouth of the poet. On the other side of the fire her sister is feeding the horses. Oh, did I mention they’re sisters? There are nine of them in all. Muses, that is. Two are more than enough for me, thanks.

And if you’re thinking manual labor like cooking and caring for our equine friends sounds a little mundane for a couple of Olympus’s finest, it’s important that you trust me that they are who they say they are. It’s important because I still worry about the alternative. This alternative being that instead of being where I appear to be, sitting near a camp fire out in the woods putting pencil to paper for the first time in days, I may actually be in a quiet room with padded walls, wearing one of those nifty shirts with the long sleeves that tie in the back. It’s been that kind of experience.

And me? Who am I? That’s a long story. I’m just a college professor who inadvertently put myself in a position to attract the attention of the good folks from Olympus.

As Humpty Dumpty said to Alice, I should start at the beginning and go straight on through to the end. For me, the beginning was just over a week ago.

Oh, for a muse of fire.

* * *

“And that, in a nutshell, is how a computer connects to the Internet. Any questions?”
Honestly, I didn’t expect any. As I looked around my computer lab I saw that half of my introductory instructional technology students looked asleep, and the rest were either reading email or checking their MySpace accounts. Their distracted behavior was typical for a Friday – or any other day, come to think of it. Glancing up at the clock, I decided to end class a little early.

“Remember, as noted in your syllabus, I’m going to be out of town a couple days next week at a conference. Therefore, I won’t be holding office hours during that time and our next class meeting will be a week from today. We only have a few weeks left in the semester, so be sure to stay caught up on your reading.” My laptop was shutting down and I was putting my notes into my briefcase before I noticed the absence of normal end-of-class sounds: the pushing back of chairs, the zipping of backpacks. The entire group was still sitting there, doing just what they’d been doing for the last forty-five minutes.

“Oh, and one last thing,” I announced. “These computers are part of the global conspiracy to enslave humanity. Welcome to the Matrix, Mr. Anderson.” Nope, still no change. “Dismissed.”

At the magic word their heads snapped up and they sprang into motion like gerbils realizing there was no line at the wheel. From what I overheard as they left, their respective wheels were located in fraternity parties and dance clubs. Not a single mention of the campus library, or going to a study group.

*It is a Friday,* my little voice of reflection commented as I walked through the halls back to my office. *You really shouldn’t be surprised they’re blowing off studying. Just wait until Sunday around 10pm – that’s when they’ll remember that they’re in college.*
I shook my head at the thought as I rounded the corner near my office, just in time to receive my next non-surprise. Waiting by my door was Frank Nolan, master excuse-maker, and occasional student in the class that just ended. He refocused his attention to me from his iPod as I approached.

“Mr. Nolan, we missed you in class today,” I said as I pulled out my keys. “I hope everything is all right?” What would it be this time, I wondered; yet another deceased grandparent, or perhaps maybe for once a life-threatening illness?

“I’m like, sorry, Dr. Hlaford. I was up kinda late last night working on some stuff,” Frank began. *There’s the snap,* my inner voice commented. “And I like slept through the alarm.” I resisted the urge to inform him that it was now nearly five in the afternoon. *And the quarterback is down for a loss. Ooh, that’s gotta hurt.*

“I’m sorry too, Mr. Nolan. What can I help you with?”

“Well, it’s like,” he struggled to get out while turning down the volume on his music, “what I wanted to know was, did I miss anything important today?”

“Did you miss anything important today?” I repeated, feeling mildly amused. As I unlocked the office door I had an evil thought. Before he could respond I quickly answered the question for him. “No, Frank, not really. Nothing you can’t make up in class on Monday.” I gave him a friendly smile and a pat on the shoulder. “Okay? See you then.”

As he turned with mumbled thanks I called after him, “Have a nice weekend.” My quiet chuckles stalled as I belatedly realized that my joke would probably flop. The odds of him showing up next week to an empty classroom while I was at my conference were about as good as him showing up at any other time. I wouldn’t bet my tenure on it.
Sitting at my desk I looked around the room, my eyes lingering for a moment on the framed diplomas hanging on the wall. “Awarded on this date to Ian Hlaford with all due rights and privileges,” yadda, yadda. Three certificates in all, one each for B.S., M.S., and Ph.D.

I’m doing a heck of a job, I thought in resignation. Three degrees, eight years of teaching, and for what? So I can make jokes at an underachiever’s expense? Could’ve done that without taking out all those student loans. What the heck am I doing?

*Dude, lighten up. Kids like Frank are getting to you,* my inner voice replied to my thoughts of regret, *and you don’t need that. What you do need is to get out of this office, off the campus, and look forward to spending some time away from the Franks of the world.*

Too true. Fortunately, I’d made plans earlier this week for an FAC with a couple of colleagues from my department. *Hang with some friends, drink a few cold ones, listen to some live music – yup, that’s the cure for the Frank Nolan blues.* Leaving my briefcase where it was, I grabbed my coat and headed out.

* ***

It’s been my experience that college towns have three kinds of bars. There are the student hangouts around campus town where crowds of undergrads endeavor to consume as much cheap beer as possible, or quixotically search for a partner willing to rub some portion of their post-adolescent anatomy against them. I’ve been known to patronize one of those drinking establishments from time to time for a few games of darts or to watch sports on the big screen, but that isn’t where I was headed tonight.
Then there are the local townie bars, usually far away from campus, where anyone remotely associated with the college is about as welcome as a communist at a John Birch Society meeting. You can usually spot these places by the collection of Harleys and pickups parked along the street out front. Again, not what I had in mind.

Finally, there are those special little pubs where on a Friday you can often find the faculty unwinding from a long week of vainly attempting to force ten pounds of knowledge into a five-pound sack. Undergraduates quickly learn to avoid these places much like deer shy away from the scent of humans in the woods. Dugan’s falls into this latter category, and that’s where I was headed.

As I walked the few blocks it took to reach my destination, I entertained myself by picturing Mr. Nolan spending his post-college years flipping burgers under the golden arches. “Like, dude, what do you mean that skipping classes isn’t a marketable job skill?” Heh.

By the time I arrived at Dugan’s I’d come to the conclusion that my little “see you next Monday” prank was worth sharing. A gaggle of undergrads were gathered on the sidewalk outside the front door, intently holding a parliament on the validity of their IDs and the depth of their cash resources. They won’t stay long if they decide to go in, was the observation from my inner voice. Making my way around them I stepped inside. I paused for a moment as I was greeted by the familiar background noise of soft alternative rock overlaid with conversation, accompanied by the pungent tang of cigarette smoke. Ah, home, sweet home. The day’s getting better already. I didn’t immediately see my friends, so I decided to head across the room and get a drink at the bar while surveying the rest of the landscape.
Sitting at the far end of the counter was the normal contingent of professors emeritus who, despite having passed beyond the pale of active teaching, still lurked about the fringes of campus society. I’m convinced that they avoid the normal obscurity of retirement in order to have a larger turnout for their memorial services. Sharing my anecdote with them would require me to listen to hours of rambling “back in my day” stories, and that wasn’t how I wanted to spend a Friday night.

At one of the larger tables were a few faculty members from the engineering department. From the group dynamic I could tell they were holding court over a gathering of graduate students. Although I can speak fluent techno-babble from years of teaching instructional technology courses, they were to be avoided as well – unless I wanted to be regaled with jokes whose appreciation required the listener to be intimate with the arcane workings of the latest Intel processor. Too much like work. No thanks.

Mary, the owner and proprietor, came over after I’d found an empty spot at the bar away from the retired profs. “What can I get for you, Ian? Your usual?”

I replied with my customary riposte, “A pint of Guinness would be just what the doctor ordered, Mary. Thanks.” While she was crafting a perfect head on my stout, I wondered what it would be like to trade jobs with her. It would have to be better than dealing with Frank, right?

A former grad student, Mary always worked hard to keep her patrons happy. Her father had started Dugan’s as a faculty hangout after his retirement from the college, and when he passed away Mary quit school to look after the bar. While she might’ve made more money catering to the undergrad crowd, professors rarely started fistfights or got sick in the bathrooms. I could run a place like this, I thought to myself with the theme song from
Cheers running through my mind. Remember the old adage, my voice of doubt commented with a verbal sneer. Those who can, do. Those who can’t do, teach. And you’re most definitely a teacher. My mental reply not being suitable for family entertainment, I paid for my beer and resumed looking for my colleagues.

Finally, I had some luck. I spotted Bill Palucci and Jeff Harris sitting at a table toward the back. The three of us had been Ph.D. students together years ago, and thanks to the vagaries of academic employment had ended up working at the same school. Dropping a dollar in Mary’s tip jar, I went to join them.

“Happy Friday, gentlemen. How’s it going?” I said as I dropped my coat over the back of an empty chair at their table.

“Oh, hey, Ian. Things are going all right.” Bill said.

Jeff acknowledged my arrival with a nod. “Your timing is perfect. We were just talking about you,” he said as I sat down.

“Really? Whatever it was, I didn’t do it; I was nowhere near there when it happened; and, um, no hablo ingles.” They both chuckled politely at my pretended innocence to unnamed charges. “So, what’s up?”

Bill gestured with his beer mug. “Jeff is of the opinion your Vikings are going to get slaughtered this weekend when they visit Green Bay.”

“It’s tough to win at Lambeau,” I conceded. “The cheeseheads do love their Packers. On the other hand, I think you’ve applied the word slaughter to the wrong team. Minnesota is headed for the playoffs, and this game is just a brief interlude on their way there.”
“Brave words, my friend,” Jeff said over Bill’s laughter. “Care to witness harsh reality in person this Sunday? I just got my new plasma screen – sixty inches of hi-def perfection.”

“I saw it for myself last night,” Bill added. “You can count every whisker in Jason Lee’s mustache.”

“Jason Lee? Oh yeah, My Name is Earl. Good show, him working off karma and such,” I commented. “Sounds like fun, but I need a rain check. I’m leaving in the morning for the land of sunshine and orange groves.”

“Right,” Jeff replied, “I forgot about that. The conference in Orlando. You’re the only person from our department who is presenting.”

“You guys should’ve submitted something,” I said. “It would’ve been like the old days; the three musketeers ride again, or something like that.”

Bill shook his head. “I’ve got too much work with my own projects right now.”

“What’s the research topic of your paper?” Jeff asked.

“It’s, um,” It’s not exactly research, I thought with chagrin. More like data analysis. Best put a good face on it. “I’m presenting on the effect of educational intervention on student preconceptions.” When neither of them said anything for a moment I added, “In other words, do students know more about a subject at the end of the semester than they did at the beginning? Very useful stuff for improving teaching methods.” I noticed Bill hiding a smile behind a sip of beer and rolled my eyes in response.

As Bill tried not to choke on his beer Jeff asked, with a note of amazement in his voice, “Are you serious? ‘The effect of educational intervention?’ And they accepted it?”
“I can assure you, my paper is completely in line with the ‘No Child Left Behind’ guidelines.”

“Which means it’s void of content, right?” Jeff continued.

“Not really – it is academically valid.” I shrugged. “It’s just not very innovative. But as the Bard said, ‘tis enough, ‘twill serve.”

I was ready to change the subject and tell them about Frank, but Jeff evidently wasn’t done.

“Remember back when we were grad students, and how we were gonna rock education’s world? Publish or perish is one thing, but jumping on the buzzword compliant bandwagon just doesn’t sound like you.”

I was starting to develop a headache. All I had wanted out of my evening was a chance to relax, not go through an interrogation. “How about we talk about what Bill’s working on? I’m sure it’s much more interesting than my lousy conference paper,” I said somewhat irritably.

Jeff shook his head. “Sorry, man. I’m sure you weren’t expecting the Spanish Inquisition.”

Before I could help myself I replied, “Nobody expects the Spanish Inquisition.” In moments we were all repeating bits of the classic Monty Python routine and laughing. My mood lightened again as if by magic.

“Honestly, Ian,” Jeff continued after we’d run out of quotes, “it’s just that as your friend I’m a little concerned. You’ve been in a funk for the last year. What is it, relationship troubles?”

I shook my head. “Nah, I’m kinda happy being a bachelor for now.”
“Then what is it? If there’s something going on I’d like to know. Off the record, and no strings attached. Okay?”

I thought about his offer for a second. Why not tell them what’s bugging me? My students shouldn’t be the only ones who get to blow off some steam on a Friday night.

“Since you asked for it, here it is: Dr. Hlaford’s take on his job.” I cleared my throat and began speaking in my best imitation of the classic movie trailer narrator voice. “In a world where education stands in crisis, one field has risen to the challenge of rescuing students from ignorance.”

I’d gotten what I wanted by getting a chuckle out of them, so I continued in my normal voice. “From its humble beginnings and through its various incarnations, those of us in instructional technology have, as the name implies, attempted to study the use of technology in education. And on matters related to process, I think we’ve done reasonably well. We can teach education majors how to write on the chalkboard without making horrible squeaky noises.”

“You turn the chalk at a forty-five degree angle to the plane of the board,” Bill interjected with a nod.

“And we show them how to use the overhead projector without distorting the image; how to run the copy machine; and how to use a camera,” I continued.

“And what all a camera’s parts are, and how it works.” Bill seemed to be getting into the spirit of this.

“The fly in the ointment, so to speak, is that every so often a new invention arrives that is hailed as the ‘silver bullet’ that will cure all of education’s ills. As new forms of pedagogy by machine appear, a familiar cycle of reform follows them. Hyperbolic claims
about how a new invention would transform education; then research showing that the technology was generally no more effective than traditional instruction and sometimes less; and finally, disappointment as reports came back from classrooms about the imperfections of the reform and surveys showing that few teachers were using the tool.”

I took a moment for a sip of my stout before going on. “For example, when the web showed up, you would have thought it was the second coming from all the excitement it generated in our field. Suddenly there was a huge rush to incorporate web pages into the curriculum. They were the fashion accessories *du jour* for any classroom. Didn’t matter what they were used for either; to many people their mere presence was all that was required. And as with most things in our field, we did a great job of teaching the mechanics of how to make web pages. But as to their educational value? Well, I’d say the jury is still out on that question.” Jeff and Bill looked at each other but I didn’t give them a chance to comment.

“If memory serves, Jeff, your question was if something was going on. Well, you’re right. And it does have to do with my job. Here it is, the secret handshake, the inside skinny, my own ‘pay no attention to that man behind the curtain’ moment.”

I leaned forward and said in a conspiratorial whisper, “I don’t think we’ve got a clue what we’re doing.”

As I sat back Bill shook his head with an odd expression. I ignored him and kept going. “Look, it just seems to me that after decades of research, and spending millions of dollars in grant money, I don’t think we’re any closer to understanding how to best use technology in the classroom than when Archimedes was drawing pictures in the sand. We’re just pouring water through a sieve.”
“That’s what I get for asking, huh,” Jeff said, looking astonished. “Thanks, I guess. But if you really think things are so bleak in our field, why do you do it?”

That’s a good question, I thought. “Saying that it’s because teaching ‘pays the bills’ is too easy an answer, although it’s partially true.” I shrugged. “I guess it’s like feeding chicken soup to someone with a cold.”

“Excuse me?” Bill asked. “Chicken soup?”

“Sure,” I explained, “like my grandma used to say, it might not cure you but it sure can’t hurt. I’d like to be optimistic about this, but I can’t shake the feeling that ultimately all I’m doing is teaching mechanics and procedures.”

My comment had killed the conversation, so we sat quietly and worked on our beers. Ironically the random shuffle function of the bar’s CD player chose that moment to begin playing the Johnny Cash cover of Trent Reznor’s *Hurt:*

*I hurt myself today, to see if I still feel.*

*I focus on the pain, the only thing that’s real.*

And that’s enough of that, I decided. “Um, I did have one bright spot today.”

“Yeah?” Bill asked.

“Yeah,” I replied, and proceeded to tell them about my encounter with Frank.

When I’d finished Jeff stood up and, with the excuse of needing to pay rent on his beer, left for the men’s room. Bill turned to me with a concerned look. “Bro, that’s pretty twisted. But it is somewhat ironic that your student really didn’t miss anything today by skipping your class.”
“Yeah, I guess,” I replied. I wasn’t sure if his comment was a compliment or not. Probably not, I decided. “But it’s not my fault if his priorities are all messed up. And it certainly isn’t my job to hold his little hand and escort him from class to class.”

Bill shook his head. “Uh-uh, no straw men. Ian, we’re teachers. We’ve got a responsibility to –”

I cut him off. “You’re right, that was hyperbole. But Frank isn’t the first student I’ve had who didn’t think getting an education should be their highest priority while in college. Every semester at least one of my classes has a ‘Frank’ who only shows up when he feels like it. I’m sure you’ve had them too.”

Bill nodded. “No argument there. Comes with the territory.”

“And most ‘Franks’ are underclassmen,” I continued. “I’m pretty sure the registrar’s office culls most of these slackers from the student herd due to poor grades long before they make it to their senior year.”

“But Ian,” Bill interjected, “while they’re here, they’re still your students – you’ve got a responsibility to them.”

I shook my head. “I’ve seen too many Franks come and go. Anymore when the attendance of a student turns spottier than a leopard, I don’t give it too much thought. My theory is that they’ll show up if they want to, and if not, there are plenty waiting to take their place.” I thought of a nice rationalization about then. “Besides, college is supposed to prepare you for life, right? Well, it’s a harsh world out there. I’m just helping Frank learn that valuable lesson.”

“I’m not sure that lesson is in the approved curriculum,” Bill commented wryly.
“Hey, I’m just working with the system. Their job is to learn. My job is to deliver content. Like I said earlier, holding their little hands isn’t in my job description.”

His answer surprised me. “Actually, it should be. One of my profs really took an interest in making sure I succeeded. And it wasn’t just me; she was like that with all her students. When I run into a problem student, I just ask myself: WWCD?”

“WWCD?”

Bill smiled. “What Would Connie Do? Once I can answer that, I’m good to go.”

I wasn’t sure what to say. “Um, that’s cool. Look, like I said, maybe I’m just getting tired of feeling like I’m pouring water in a sieve.”

“That’s okay, we all feel that way sometimes. You know the best cure for that?”

I shook my head. “Get a bucket?”

“Forget the sieve – and the bucket.” He could tell from the look on my face that I didn’t get it. “The real question you need to ask is what you’re trying to accomplish by pouring water in the first place.”

“Hey, everybody ready for another round?” Jeff was back from visiting the little professor’s room. “It’s my turn,” he volunteered. “Ian, you still drinking that Irish sludge?”

I forget about Bill’s advice as I raised an eyebrow in Jeff’s direction. “Your comment merely shows your lack of taste in beer. At least I can’t read the paper through it, like that yellow water you drink,” I replied with a smile.

Bill chuckled at our little go-round. “Just like clockwork. What would a Friday be without you two arguing about beer?”

“A Saturday?” Jeff rejoined before leaving for the bar.
“So, when did you become such a cynic about our field?” Bill said after a moment. “I mean, ‘none of us know what we’re doing?’ That’s harsh.”

“Okay, so maybe that was little over the top.” I thought about a few other things I’d said. “And unfair. Sorry. But, in my defense, do you really think that computers, or any technology for that matter, make any real difference in education?”

Bill nodded. “Actually, I do.”

“But what about you venting along with me tonight?” I asked.

“Hey, I’ve got my pet peeves. People who think technology is a panacea for all education’s ills are near the top of my list,” Bill commented with a slight frown.

“Amen to that,” I replied.

“Teachers need to view technology as a powerful tool, no more and no less,” he continued. “And technologies don’t exist in a vacuum. I mean, take the beginning of the automobile industry for example.”

“Automobiles?”

“Sure. They’re just one species within the ecology of transportation. Back in the day they didn’t just invent the horseless carriage and call it good enough. Folks had to build roads, gas stations, repair shops and tire stores – all the things needed to support this new technology.”

“That makes sense. But how does that relate to educational technology?”

“It’s exactly the same. You can’t just dump computers into a school by themselves and expect a revolution in education, higher test scores, or for them to solve any number of other problems that people claim they can do. You need technology directors, network
managers, software and hardware, and teachers who know how to use them, if they are going to be successful. Otherwise, the ecology is going to reject that new species.”

I thought about that for a second. “Sure, I guess that makes sense. But it all seems to have been so over-hyped.”

“I know what you mean,” he replied with a nod. “But I happen to think computers are by far the most powerful teaching and learning machines to enter the classroom. Students and teachers can interact with computers in ways impossible with film, radio, and television. But, and it’s a big but, these various uses of the computer, while valuable in themselves, still require the integration and sense-making that only a good teacher can provide.”

And that leaves you out, doesn’t it buddy boy? I took a long drink of my stout as I mulled that thought over, and while draining the last bit of foam from my glass I realized why what Bill had said was bothering me. His comments traveled perilously near the doubts I’d had back in my office.

“Hey, remember that poster I had in our office when we were in grad school?” Bill asked after a minute. I shook my head. “Give someone a fish and they will eat for a day,” he quoted to remind me.

“Oh, right. And teach someone to fish and they’ll eat for a lifetime,” I finished for him, recalling how he’d worked that sentiment into his thesis. Philosophy by Hallmark, my little voice commented sarcastically. Right up there with Socrates and Aristotle.

About then Jeff came back with the beers, and I pushed my thoughts about what Bill had been saying to the back of my mind. “Thanks, Jeff. Next round is on me.”

Our conversation drifted back to topics of seasonal importance, such as the upcoming struggle between the Packers and Vikings. Around seven o’clock a local band started setting
up their equipment, prompting Mary to come out from behind the bar and collect a cover charge. A few hours later we left our refuge from the outside world and found ourselves out on the sidewalk, the evening’s music still ringing in our ears. I turned down Bill’s offer of a ride with thanks and waved as they headed into the parking lot. The street was punctuated with snow-filled cones of light under each streetlight, and I looked forward to the walk.

Vacation began tomorrow.

2 (page 33) Educational researcher Yong Zhao has stated that technology integration into schools is an often difficult and complex process that extends beyond the boundaries of a classroom. As a result of his research he has developed a metaphor that describes schools as an ecology and technology as one species in that environment. From Yong Zhao & Kenneth Frank, *Factors Affecting Technology Uses in Schools: An Ecological Perspective*, (2003).

3 (page 33) From Tyack & Cuban, p 126.
CHAPTER 2

When I reached my apartment I decided to kick back for a while in front of the TV before going to bed. Because it was that wonderfully faux time of the year – the two month shopping season leading up to Christmas – the only alternative to infomercials and talk shows I could find at that time of night were a dozen different versions of “A Christmas Carol.” Bah, humbug indeed. Finally I gave up on cable and went over to the shelf where I kept my videotapes and DVDs. Scanning the titles, at the end of the row I noticed Xanadu with Olivia Newton-John. That’ll work; I could use a comedy. After putting the cassette in the machine, I settled back in my recliner with a sigh. Sometime after Gene Kelly’s first dance routine I faded off to sleep.

“Congratulations, Ian. Your mother and I are very proud of you.”

I opened my eyes with a start. The television was showing a tall young man wearing a mortarboard and gown shaking hands with an older man. The older man had his other arm around my mother… Pop? What are you doing on TV? Wait a minute – that’s my high school graduation. What am I doing on TV?

Well, this is unexpected. I must’ve recorded Xanadu over my copy of our family’s home movies. Picking up the remote I pressed the pause button. I’m not sure why, but I wasn’t at all surprised when nothing happened. How about changing the channel… nope, that didn’t work either.

I forgot about the remote as I realized what was on the screen now couldn’t be from my family videos. There was no way someone could have videotaped the exact moment as an undergrad where I was talking to one of my professors after class and decided to earn my
teaching endorsement. That scene was followed with brief interludes of me student teaching, graduating from college, and my first high school teaching job. In succession came my application and acceptance into graduate school, scenes of me, Bill, and Jeff in classes and at football games, the receiving of first my master’s degree, then my doctorate in instructional technology, and celebrating with my family when I was offered a position at this college.

I noticed something else odd about then. In each of the scenes from my life going past on the screen there was a woman I didn’t know standing in the background. She looked like someone I’d remember, nearly my height, with black hair reaching past her shoulders and brilliant green eyes. As this observation occurred to me the movie of my life paused. The unknown woman, partially hidden by the frozen figures on the screen, turned to look directly out of the TV at where I sat in my recliner.

“Ian, Ian,” she said to me with a shake of her head. “You started out so well, and yet like many others you are wasting what you have been given.”

What the heck is going on, I thought as the memory show resumed. Bits and pieces of the next few years flew by in a blur, pausing briefly at the time I received tenure, then fast-forwarding until just over a year ago.

“Dr. Hlaford? This is Karen Williams. I’m in your two o’clock 291 class.” Not this, I thought, and again tried using the remote. No luck. I was going to have to watch, whether I wanted to or not.

On the TV was an image of me sitting in my office late on a Monday morning, listening to my voice mail from the weekend after finishing some paperwork. “Karen Williams? Who are you?” came up as closed captioning. Great, even my thoughts were

“I’d like to meet with you on Monday at one,” the message continued.

“Office hours today are from nine until eleven. So sorry, thanks for playing.” Ouch.

“If meeting at that time doesn’t work for you, please call me at 555-2368. Thank you.”

“Waste time calling a fair-weather student? I don’t think so.” TV-me pressed star-seven: delete message.

I watched as the Ian on the screen looked at the clock on my/his desk. “Not quite noon, but probably lunchtime somewhere. And where to indulge my inner epicurean today? Maybe I’ll try that Brazilian place in campus town…”

The fast-forwarding resumed for a moment, stopping at the following Friday during our weekly faculty meeting. Amy Fine, our department chair, asked me to hang around as the meeting was ending.

“Ian, I’d like to talk to you about Karen Williams.”

“Karen who?” The captions were still in force, I saw. “Oh crap, my Monday phone call.”

“Sure, she’s in my multimedia survey class,” TV-me cautiously replied to Dr. Fine. “What’s up?”

“She’s dropped all her classes and withdrawn from school. Her advisor said she’s been going through a tough time this fall. Evidently her daughter has been sick and she’s missed much of the semester.” Amy tilted her head to one side and asked, “How has she been doing in your class?”
“Uh-oh.” Interesting, I thought as I saw that innocuous word appear on the screen. The psychic subtitles evidently censored expletives.

“She hasn’t been around that often,” TV-me replied with a shrug. “If she wasn’t dropping out she would have been on my midterm report as failing.”

“That’s too bad. She was in one of my classes last spring.” Amy sighed. “I think she would have made a good teacher. Maybe if someone had reached out and helped her over this rough patch we wouldn’t have lost her.” Amy handed me the drop slip and turned to leave.

“It’s not my fault. I did my part…” I said out loud. Oh good, now I’ve slipped completely around the bend: I’m talking to the TV.

“And what part would that be?” The scene froze at that point, with the raven-haired woman stepping out from the tableau. “Please, enlighten me. Is this the part where you just go through the motions in your job? Or the part where you feel the needs of your students aren’t important?”

There they were, the questions I’d avoided asking myself for the last year. Was what happened my fault? I asked myself. No, it wasn’t, my inner voice replied defensively. Why should you waste your time on students who don’t show up for class? You were there; that should be good enough.

Then it hit me. Wait just a doggone minute. The TV is talking to me. That’s all right; that’s what it’s supposed to do. However, it’s calling me by name. And it’s asking me personal questions. That’s not right. You’re just having a weird dream, my inner voice said in a comforting tone. A particularly lucid dream, but a dream nonetheless. I relaxed at the realization. May as well enjoy this.
“Miss, I don’t believe we’ve been properly introduced,” I said to the screen. “Having a good time wandering through my past?”

“Not quite the answer I was expecting, but it reinforces my opinion of you.” She shook her head. “You may call me Callie, for now. And in answer to your question: no, I’m not particularly enjoying what I’ve seen in your past.”

“Gee, that’s too bad,” I said with a flash of anger at her comment. “Not that what you think matters to me.” I pointed at her image on my TV. “This is just a dream brought on by some under-pasteurized stout. There’s more of Guinness than the grave to you.” I chuckled at my seasonal wit.

Callie raised an eyebrow in response to my quip. “Paraphrasing Dickens? How creative of you – more creative than most of your recent behavior.”

Touché, I thought, amused by her retort. Nice shot.

“I’ll put this in simple terms for you,” she continued. “I’ve got some bad news, and some good news. The bad news is that the meager trick you played on your student earlier today is merely the culmination of a series of events. The good news is that it’s not too late.”

“Too late for what?” I asked, curious about where this was going.

“It’s not too late for you to do something about your life. You have just seen your past. Your actions of the last year have brought you to where you are now. Are you willing to do something about your future?”

Some of the Christmas Carol reruns must have seeped into my subconscious against my better judgment, I decided. May as well roll with it. “What, you’re cheating me out of two spirits? That’s hardly fair,” I said. “Makes me feel like I’m not getting my money’s
worth. And besides, wasn’t I supposed to be warned of your visit by a dead co-worker?” So much for her comment about my creativity, I thought.

“Dead co-worker? I don’t – oh, another reference to Dickens.” Callie sighed and waved her arm at the image of the faculty meeting still frozen on the screen. “Ian, you need help to get off the path you have inadvertently chosen. I would like to help you. Is that agreeable with you?”

Great, the characters in your dreams want to perform an intervention on your life.

Before I could make another attempt at turning her question into a joke however, I remembered a comment I’d made earlier this evening. Chicken soup, I’d told Bill. That stopped me cold.

“Yeah, sure, why not?” I replied after a moment. This is just a dream, after all.

“Thank you Ian,” she said as the image on the screen slowly morphed into a group of roller skaters following a perky blond through a disco. “Be seeing you.” Callie waved farewell just before the credits began to roll.

“Where, in Xanadu?” I asked. I listened for a reply but couldn’t find one in the Electric Light Orchestra song playing over the credits. After a moment I pointed the remote at the screen and succeeded in stopping the tape.

This, I decided as I prepared for bed, has been one very odd evening. First Bill and Jeff, and now this. Don’t know what I was thinking when I picked that movie, I thought at my reflection in the bathroom mirror while brushing my teeth. Disco Pygmalion, honestly. Even a musical version of Dickens would’ve been less painful.

Too many weird things for one day, I mentally reiterated as I rinsed. I definitely need a vacation. How convenient that tomorrow I’d be on my way from here to the land of
sunshine and orange groves, like I’d told Jeff. I set my alarm and climbed into bed with hopes of no more dreams.

* * *

Lessee, suitcase is all packed, there’s nothing in the fridge that’s going to spoil in the next week – what’ve I forgotten? I asked myself as I stood in the middle of my living room after my routine morning ablutions. Plane tickets are in my coat pocket, my presentation materials and laptop are in my briefcase, and my briefcase is… oops. You big dummy, you left your briefcase in your office last night.

I took a look at my watch. My flight leaves in just over two hours, and what with check-in and security, this is going to be tight. Grabbing my suitcase, I quickly locked the apartment door and ran down the stairs to my car.

After managing to avoid getting caught violating more than half a dozen traffic laws, I slid my car through the snow into my parking spot behind the education quad. When I got to my office I happened to glance at the door as I fumbled for the key. Taped to it was a folded piece of notebook paper with my name on it. I pulled the paper loose and shoved it in my pocket, unlocked the door, and went inside.

My briefcase was exactly where I’d left it, standing on the floor right next to my desk. I took a quick look to verify that it contained what it should and headed back to my car. Thirty minutes and a few more broken speed laws later, I was parked in the long-term lot at the airport.
As I waited on line to check in for my flight, I remembered the piece of paper from my office door. When I looked at the contents I couldn’t have been more surprised if my fellow travelers had spontaneously started performing a Gilbert and Sullivan operetta while standing on their luggage. WE DON’T HAVE CLASS ON MONDAY JACKHOLE was written out in block letters. “You left out the apostrophe in ‘don’t’ Frank,” I muttered under my breath.

This was certainly unexpected. One of Frank’s classmates must have reminded him about my absence next week; I couldn’t picture him actually looking in his syllabus to find out. So I’m a jackhole, I mused as I shoved the note back into my pocket. Is that animal, vegetable, or mineral? Frank just doesn’t fully appreciate your sense of humor. Maybe he’ll think it’s funnier in his future career in the food service industry.

“Next. Sir, are you next?”

I was wrenched back to the present by the monotone voice of the airline representative behind the check-in counter. I took a quick look around and decided she was talking to me.

“Yes, thank you,” I replied. I stepped forward and placed my ticket on the counter.

“Did-you-pack-your-luggage-yourself-has-anyone-besides-yourself-touched-your-luggage-since-you-packed-it?” came out in one quick burst of words as she punched my ticket information into her computer terminal. As I was replying in the affirmative then negative she suddenly looked up. “May I see some identification?”

I handed her my driver’s license. She checked my picture against my face then pecked a few more keys on her keyboard. “I’m going to need your visa or work permit as well.”
What the heck? “I don’t have a visa or work permit. Why would you need those?”

“Homeland security regulations require all foreign nationals to show their immigration papers before they are allowed to board an interstate flight,” she informed me. “If you don’t have your papers you’re going to have to step aside.”

“There must be some mistake. I don’t have those papers because I’m a citizen, not a foreign national.”

The woman took a step back from the counter and crossed her arms. “Sir, if you are going to be uncooperative I will have to call security. Please either give me your papers or step aside.”

And I’ll get your little dog too, I mentally concluded for her. I couldn’t believe this. “Look, ma’am, I’m trying to cooperate, honest. But it’s real simple: I am a U.S. citizen; I was born in the U.S.; I’ve always lived in the U.S. Therefore, I don’t need a work permit. Okay?”

At about that point I heard the sound of a throat being cleared. As I turned to look I saw that three large men had stepped up behind me. They were wearing identical charcoal gray suits. And sunglasses. While inside the terminal. I noticed they all had wires running from inside the collars of their suit coats up to little earplugs. This can’t be good. I fervently hoped they were just some nerds who were big fans of the Matrix movies, and were traveling in costume to a sci-fi convention. When I spotted the added detail that two of them had their right hands inside their jackets, as if they were holding onto something carried within, my stomach did a slow flip. Nope, this is definitely not good. The wicked witch must’ve hit a panic button before backing away from the counter.
I guessed that the big guy who didn’t have his hand in his jacket was the one who had cleared his throat. Time to turn on the charm. “Agent Smith, I presume?” I said with a smile, grasping vainly at the *Matrix* straw. “Catch that Neo guy yet?” I added under my breath.

“When you need to give us your identification papers,” he said as his cohorts took up encircling positions placing me between them and the service counter. From the corner of my eye I saw that the workers behind the counter were moving rapidly away from the area.

Okay, so they really are security officers, I realized with a sinking feeling. Perhaps there’s a chance they’re rational. “No problem. I gave the woman at the counter my driver’s license,” I said. “She should still have it.”

“That was your last chance,” he replied. “Interfering with the Transportation Security Agency is a federal offense. We need you to come with us. Now.”

So much for rationality. “Gentlemen, there’s been a mistake.”

“And you’re making it,” he interrupted. “You have the right to remain silent, which I would highly recommend.” The recitation of my rights continued as they ushered me to a windowless room in the airport administrative area.

Within the next few hours a couple things became clear. Apparently the government machinery running the “War on Terra” had one of its well-publicized glitches and decided my name was similar to one under double-secret probation on the Homeland Security no-fly list. They wanted my ID because the attached profile indicated that the person they really wanted was in the country with an expired visa. To get even this much information from them had required a check of my fingerprints and a DNA sample, not to mention a search of my body, my luggage, and my car. To add insult to injury, I overheard one security agent
mention that the person whose name was on the list had been picked up in Portland two months earlier.

The question under discussion now was what to do with me. The bureaucracy in Washington suggested that I be charged with not providing my visa when requested, regardless of the fact that I didn’t have or need one. The TSA agents here were split in their opinion of this idea. The junior agents were in favor of me disappearing into the system – evidently my “Agent Smith” comment hadn’t lightened the mood like I’d hoped. Fortunately for me, their team leader seemed worried about the publicity if word of yet another security screw-up made it into the media. That gave me an idea.

“Excuse me? Gentlemen?” I interjected into their conversation. “I have a suggestion.”

The lead Smith turned to look at me. “Yes, Mr. Hlaford?”

I caught myself before informing him it was Dr. Hlaford. He could call me Bobo the Clown if it kept me from going to Gitmo. “Despite the fact that my watch has been confiscated, I’m guessing that I’ve missed my flight by now. If you can get me a seat on the next plane to Orlando, I’d be willing to let bygones be bygones and sign an agreement not to talk to any reporters about this.” I tried on my most sincere face. “After all, it was an innocent mistake, right?”

He lifted a hand to his earpiece, as if listening to something. “That is – a most interesting proposition, Mr. Hlaford,” he replied after a moment, scarily sounding just like Agent Smith from the movies. “I believe we can arrange something of that nature.”

A few signatures and thirty minutes later my belongings were returned and I was escorted to the front of the check-in line by the head Smith. Thank God it wasn’t the same
woman at the counter. Smith spoke with her briefly then turned to me. “We have a problem. The next scheduled flight to Orlando isn’t until tomorrow morning.”

I was saved from being re-arrested – this time for using inappropriate language to a member of transportation security – by the agent holding up a hand while he listened to something on his earbud. “A private charter plane is available, if that is agreeable to you.”

“No additional cost?” I asked while trying to control my temper. Is there anything else that can go wrong today? I wondered in frustration.

“The agency will take care of it.” he replied.

I thought about it for a second. This might not be such a bad thing, I realized. No crowded airline seats. No screaming kids. And most important of all, it meant no anal-retentive airline employees to deal with. “That sounds good to me. I accept.”

He nodded, and listened for another few moments. “Proceed to outside gate forty-two. They’ll be waiting for you.”

With a shrug I hitched the strap of my luggage bag higher on my shoulder and turned away.

“Be seeing you,” I heard from behind me.

Not if I can help it, I thought in reply and kept walking, wondering in the back of my mind where I’d heard that phrase before.

We were waiting on a runway approach for our turn to take off, and I had my first chance to sit back and examine my surroundings. This is nice, I decided as I looked around, very nice. The private charter “plane” had turned out to be a small executive model Gulfstream, complete with real wood paneling, carpet, and soft leather seats that were more comfortable than my recliner at home. A flat-screen TV was mounted on the front wall of
the passenger area, directly above what appeared to be a nicely stocked bar. And the best part is, I smugly thought, I have the flight all to myself.

All to myself, that is, except for the pleasant addition of a flight attendant, uniform and all. I hadn’t expected that on a charter flight, but it certainly fit in with the surroundings. She had run through the standard safety lecture before taking a rearward-facing seat at the front of the compartment. Something about her had me wondering if I’d seen her before. Not likely, I thought, and I wasn’t going to ask. I just wanted to keep my head down and let this day get over with no more surprises. However, I couldn’t help feeling that there was something familiar about her green eyes and the black hair neatly tied back under her cap.

With a brief crackle of static the intercom system came to life. “Welcome aboard, Dr. Hlaford,” said a business-like female voice. “My name is Una and I will be your pilot. Please be patient; we will be taking off in a moment.”

“Thanks,” I replied to the air. I noticed a few moments later that the pilot had left the intercom open so I could hear the control tower.

“Apollo Eight Seven, you are clear on runway one-eight,” came from the speakers in the ceiling.

“Roger that, tower,” the pilot replied as she began applying power to the engines.

“Have a nice day.”

Within minutes we were heading southeast at thirty thousand feet, just below the speed of sound. After we leveled off the flight attendant gave me a nod. “Consider the seatbelt sign turned off, Dr. Hlaford,” she said as she unfastened her own belt with a click.

“Federal regulations do prohibit smoking on this flight, however.”
“Good thing I gave up cigarettes after grad school,” I said with a smile. I looked around the cabin some more. “So, is this a dinner flight? My little adventure back at the airport caused me to miss lunch.”

“Sorry, no food this flight,” she answered with a slight shake of her head. “There is some Guinness in the bar, however. Surely you have heard it called a meal in a glass?”

“As a matter of fact, I have. Thanks,” I said after she filled a glass with foamy goodness and handed it to me. “And don’t call me Shirley,” I added with a smile.

“Excuse me?” she asked as she returned to her seat. “I didn’t call you – oh, you’re making a pun.” The corners of her mouth turned down slightly. “In my opinion, puns are less humorous than a performance of Oedipus Rex with all the comedic scenes removed.”

Oedipus Rex? Not your average topic of conversation, but what the heck. My mind went back to my undergraduate lit courses as I sipped my beer. “I guess you really don’t care for puns, considering that I can’t think of any comedic scenes in that play. Unless you count irony as a form of comedy, I suppose.”

“You only suppose? That play is the textbook definition of irony, what with Oedipus unknowingly killing his father and marrying his mother.” She paused for a moment then raised an eyebrow. “Speaking of irony, don’t you think it was ironic that we happened to be available just when you needed some help?”

“Ironic? I suppose so. Although, considering the day I’ve had…” I trailed off. Something about the way she said “needed some help” sounded so familiar, yet only half-remembered – like something from a dream. I jerked forward in my seat so fast the contents of my glass almost slopped over the side.

“Yes?” she asked with an amused look. “Please go on.”
No way, my inner voice was yelling. This is crazy. There is no way she is the woman from the dream.

“Your name wouldn’t happen to be Callie, would it?” I asked hesitantly.

“Why, yes, it is.” Her amused look intensified. “And how did you know that?”

I wasn’t sure how to proceed. “Um, lucky guess? It’s nothing; I’m sure it’s – just a coincidence. Probably more – “

“Probably more Guinness than the grave?” Callie concluded for me.

If this had been a Tex Avery cartoon, this was the moment where my lower jaw would have slammed to the floor with a loud thud. “How, how do you know that?” I stammered in astonishment.

Callie just smiled. “It’s good that you’ve studied the Greek classics.”

“What? Sure, as an undergrad. But that doesn’t explain – ”

“Why you know my name? And how I know about your dream last night?”

“Um, yeah.” I realized that was leaning so far forward that I was nearly out of my seat, and forced myself to sit back.

In response she calmly reached up and, after taking off her attendant’s cap, let down her hair. “I said I’d be seeing you,” she said as she combed out a couple tangles with her fingers.

I sat staring for a moment before carefully setting my glass into the cup holder on the armrest. “I’ve gone around the bend, haven’t I?” I chuckled nervously. “Never mind, how would you know? You’re part of my delusion.”

Callie shook her head with a smile. “Sorry to disappoint you, but you’re as sane as you’ve ever been.”
“Secret government mind control experiment, then? Some sort of *Men in Black* type thing… that would explain the agents at the airport,” I thought aloud.

That caused her to laugh. “What an imagination you have! No, wrong again. I’m afraid that sort of thing only happens in the movies.” Callie held up a finger. “One more guess.”

What, now we’re playing games? I started to go from stunned confusion to anger.

“One more guess? Fine, how about alien abduction?”

That got a frown in response. “Now Ian, there’s no reason to be like that.”

“No reason to get upset? Look, if I take this at face value, somehow you messed with my mind by invading or hijacking my dreams last night, and today you just happened to be at the right place, at the right time, to give me a ride when I needed one.” My voice was getting louder as I went, but I didn’t care. “No reason? I have every reason –”

“Is there a problem back there?” came from the intercom.

Callie started to answer but I cut her off. “There’s no problem, unless you count somebody playing,” I looked straight at Callie, “games with my head.”

“Ian?” Callie asked quietly.

“Yeah?” I nearly snarled in response.

“Are you familiar with the nine muses?”

Huh? Oh waiter, order of segue, table seven. “Uh, sure. The muses were the daughters of Zeus, who inspired artists and writers,” I answered automatically thanks to years of school, so caught off guard by her non sequitur that I almost forgot I was cheesed-off.

“But what does that have to do with –”
At that point the door to the cockpit opened and out walked a woman who, at first glance, appeared to be Callie’s identical twin. Callie tilted her head to the side in acknowledgement. “Ian, this is my sister Una.”

“Una? The pilot? Um, hi, nice to meet you,” I said, my manners kicking in while my brain was still on cruise control.

Una ignored me and turned to her sister. “Have we made a mistake with him?”

Callie gave me an appraising look that made me feel like a bug under a microscope. “No, I don’t think so. His bluster is only a mask for his confusion and fear. It is to be expected.”

Una joined Callie in staring at me. I noticed she had blue eyes to her sister’s green ones. “It may be too late for this one,” Una said finally with a shake of her head.

“Too late for what?” I asked. “Could I buy a vowel here?”


“I’m sorry, it’s from – actually, I’m not sorry, but I’m not understanding any of this,” I said, looking from sister to sister. “Can either of you explain to me what’s going on?”

“To make, as you say, a long story short,” Callie replied, “I am going to tell you some more about my sister and myself. For example, my full name is Calliope, and my younger sister is named Urania. Ring any bells for you?”

I dug back into my memory. What’s so special about those names… oh yeah, muses again. “Calliope. Urania. I get it. Your folks named you after two of the muses. That’s kinda new age and all, but I’ve heard of parents burdening their kids with worse names. Try growing up named after your folks’ favorite musician.”

“Favorite musician?” Callie asked.
“Ian Anderson? From *Jethro Tull*?” I explained. “Never mind; what does it matter who you’re named for?”

“You’re missing the point. We are not named *for* two of the nine muses; we *are* those two muses,” Callie replied in a matter-of-fact tone.

“Riiiiiiight, and I’m a world-famous flute player,” I said sarcastically.

Una gave her sister a confused look. “He is?” Callie shook her head. “Then why would he say…”

“Don’t worry about it,” Callie replied. “He was making something like a joke, only smaller.” She got up from her seat and moved to stand next to her sister. “Ian, it isn’t important at this point that you believe we are who we say we are. What is important is that you keep an open mind about certain things – such as the events in your dream last night.”

_Hoo-boy. It looks like you should’ve waited for tomorrow’s flight. These two are flakier than your grandma’s piecrust. Or you are._ I glanced at the glass of beer sitting in the armrest. Could they have put something in it? “Okay, I’ll play along. You’re telling me the reason you were in my dream is because you’re a muse – and so is your sister. Right?”

Calliope put her hand on my shoulder. “That is correct. Now listen carefully, because here is our ‘secret handshake’ to share with you. To learn and create is the destiny for humanity. Throughout human existence we muses have worked to help you live up to your potential.”

I tried not to laugh. “And I’m your current project?”

“You did say when we spoke last night that you would accept our help,” Calliope replied with a nod. “So, yes, your welfare is our concern. Especially after the events of the past year.”
My feelings of defensiveness kicked in at her comment and I decided to play dumb – which wasn’t much of a stretch at this point. “Um, to what events are you referring?”

“As your friend Bill reminded you last night, choosing to become a teacher carries some great responsibilities. Chief among those is the responsibility for the educational needs of your students – a duty you’ve been neglecting of late.”

Now she’s gone too far. I’m willing to take criticism about my life from my friends, but not from a total stranger. If I hadn’t been on a plane I would’ve walked away at this point. “Is it Florida yet?” I asked in an attempt to change the subject.

“Perhaps you should look out the window,” Urania suggested.

Now what? I turned to see what she was talking about. What I viewed did not make me happy. Through gaps in the clouds I could see water where the ground should be. “Um, geography isn’t my strong suit, but I can’t think of any large bodies of water on our way to Orlando. Where exactly are we?”

“You said last night that you needed a vacation. In a way, we are going to give you one,” Urania said with a smirk. “Although, you might want to think of it as a study-abroad opportunity.”

Okay, that was nicely cryptic. “I don’t know how they look at these things in cloud cuckoo land, but where I come from I think we would consider this kidnapping.”

“Quit being such a baby,” Urania said with a frown. “You were offered our help, and you freely accepted. We are going to help you, whether you like it or not.”

“And the first thing you should do is stand up,” Calliope added. “We’re going to be landing soon.”
Landing? It didn’t seem like we’d been in the air all that long, and I hadn’t noticed any change in the sound of the engines. Oh, geez, the engines. Who’s flying the plane?

“Una… Urania? Since you’re back here, is it safe to assume we’re on autopilot?”

“Just stand here.” Calliope ignored my question and pointed to a spot on the floor.

“Next to me. And hold my hand.”

_Sure, why not. Next she’ll ask you to put your left foot in and put your left foot out._

May as well humor them until we were safely on the ground. I got out of my seat and stood where she indicated. I could call the cops once we’d landed.

“Now close your eyes for a moment,” Urania said. “This can be a little disconcerting the first time you experience it.”

“You didn’t say ‘Simon says’,” I muttered under my breath and only pretended to fully close my eyes. What happened next made me wish that I’d been more obedient. With special effects that would make the graphic wizards at Industrial Light and Magic proud, the walls of the plane became translucent before they slowly faded away. As if that wasn’t enough, what was exposed was even more outrageous. And yet, I decided, if I’m hallucinating at least it’s consistent. What other sort of transportation would Greek demigoddesses use, if not a golden chariot drawn by four flying horses?

I opened my eyes fully and looked around. To my left stood Urania, the horses’ reins firmly gripped in her hands. Calliope was on my right, smiling as she shook loose her hair.

“Exhilarating, isn’t it?” Calliope shouted above the sudden wind. “When I was young I would beg Uncle Apollo mercilessly for rides until he would give in.”

“And yet you never bothered to learn how to properly care for the team,” Urania commented dryly. “Funny how that little chore always fell to me; is it not?”
“Ladies, I hate to interrupt your childhood reminiscing,” I interjected, “but I urgently feel the need to repeat myself: where the heck are we?”

“Wouldn’t a better question be: where are we going?” Calliope asked.

“Fine. Whatever. Where are we going?” I muttered in exasperation.

“You see, sister, he is capable of learning. Ian, we are taking you to a very special place.” As she spoke we dropped below the clouds. Before us I could see a landscape standing proud of the water. Vast forests, winding rivers, and verdant prairies stretched off as far as I could see. Far off in the distance I could just make out a solitary mountain; so large its peak was lost in the clouds. Color me impressed. “Welcome to Olympus.”

_**Olympus? Oh sure, why not? What’s one more drop in your great big bucket of crazy?**_ A thought hit me. “I thought Olympus was in Greece. You know, home of the gods and all that.”

“It was, long ago. Father moved it after the Prometheus incident,” Urania said. “He was worried about the neighbors.”

“Zeus was worried about the Greeks?” I asked in surprise.

“No,” Urania replied. “Humans in general.”

I transferred my grip from Calliope’s hand to the rail of the chariot. This may be a hallucination, I thought, but why take chances with safety? With my free hand I rubbed my eyes. When I opened them again what I had seen earlier was still there. We were turning slightly, moving to parallel the shoreline.

“We appear to be heading for the beach. Why aren’t we going directly to the mountain?”
“I’m surprised at you, Ian.” Calliope replied. “The journey is as important as the
destination. And besides, we wouldn’t want you to feel you weren’t getting your money’s
worth.”

Just freaking wonderful. Evidently, even in dreams you have to be careful what you
wish for. “Oh, don’t worry about me. I’ve got a feeling this trip will be worth every penny.”

* * *

Urania had brought us to a stop on the beach near a large tent, next to which three
horses of the apparently flightless variety were tethered. About a mile away up the coast was
a small village. I guessed that it was of the fishing variety, as I could make out a cluster of
boats surrounding a long pier.

Kneeling on the beach, I was looking through my luggage as I tried to ignore the sand
that had found its way into my shoes. Fortunately my bag and briefcase hadn’t faded away
with the rest of the plane. Noise from the flying horses caused me to look up from what I
was doing. A man dressed for a Delta Tau Chi toga party emerged from the tent. He silently
bowed to each of the sisters in turn before turning to me. Evidently my ability to feel shock
was temporarily overloaded, as I simply shook my head when I got a look at his face.

“I did say I’d be seeing you, Mr. Hlaford,” said the erstwhile airport security agent
with a smug curl of the lip.

“I’m getting a little tired of that phrase. And it’s Dr. Hlaford, if you please,” feeling
petty. I looked toward the sisters. “How exactly did Agent Smith get here before us?”
“There are many paths leading to and from the outside world,” Urania answered as she handed the reins of the chariot to Smith. “We chose to take you along one that would allow you time to ease into the transition.”

This she calls easing in? I’d hate to see the shortcut.

“As Urania told you while we were landing,” Calliope said, “you won’t need any of the clothing you packed for your trip. In the tent you’ll find appropriate garments that will allow you to fit in with the populace. Don’t worry about your belongings; they’ll be waiting for you at the end of our journey.”

“That’s fine,” I answered as I found what I was looking for. “I don’t mind borrowing clothes, but there are some things I really don’t care to share.” I stood up, with my bathroom kit and supply of clean underwear in hand. For some reason the sisters appeared to have some trouble controlling their amusement.

A few minutes later I came out of the tent looking to my mind like a cross between a frontiersman of the American west and an eighteenth century British highwayman. Supple blue canvas pants were tucked into dark leather boots that turned down at the knee. Above that I was wearing a light cotton shirt topped with a high-collared thick woolen cloak. The hat that was provided had more in common with a wide-brimmed Stetson than a tricorn.

“Stand and deliver, buckaroos!” I announced as I came within earshot. Sure, go with the flow. May as well enjoy your delusion. From beneath the cloak I revealed the last piece of my ensemble – a thirty-inch broadsword. “I’ll be stealing naught but your purses and your hearts.”

“Ian, put that thing away before you hurt yourself,” Urania said. “Better yet, give it to me – carefully – and I will return it to the tent. We did not intend for you to take it.”
“Oh, c’mon, Urania,” I said as I returned the blade to its scabbard. “After I went to all the trouble of pulling it from the stone?”

“What stone? There is no – oh.” Urania just shook her head. “Sister, would you try to talk some sense into our young protégé?” she said as she entered the tent.

“I’m beginning to think I’d have more success trading places with Sisyphus than enlightening him, but I’ll give it a try.” Calliope turned to me with a smile. “Keep the sword if you like, Ian. Just please be careful.”

“Yes, mother,” I replied. About then I noticed something was missing. “I see the chariot’s gone. Tell me, do you have a horse with a very shiny nose to guide the team on foggy nights?”

Calliope sighed. “Ian, is humor your standard response to every situation, or are you just trying my good nature?” Before I could reply she looked me full in the eyes. For a moment I felt a touch across my thoughts.

“It is your standard response – when you feel there are no consequences,” she said. A look of concern was on her face as she walked toward me. “Ian, I’m going to repeat this admonition but once more. Contrary to what you’re currently thinking, this is not a dream or hallucination. And we did not put drugs in your beer. This is real, more real than anything you’ve ever experienced.”

“Uh-huh. Look, put yourself in my position. One minute I’m sitting comfortably in a luxury jet, having a cold one and trying to relax from my encounter with those SchutzStaffel at the airport. The next minute I’m having a conversation that could fit into One Flew Over the Cuckoo’s Nest. Populated with characters from a classical studies text. So I figure either
I’m asleep or drugged. Or maybe I’ve gone around the bend. That would suck. But still,” I shrugged, “Occam’s razor, you know? The simplest explanation is usually the right one.”

“I agree completely. But you need to remember, the simplest explanation is also often only suitable for children.” She took my hand in hers. “I’m going to show you something to help convince you. My sisters and I have walked among humanity for over thirty thousand years.” Her eyes darkened, like the sky seen from the bottom of a well.

“And in all those millennia, only a handful of people have seen our true faces. You are quite fortunate, Ian. Look at me — see me as I truly am.”

I tried to pull my hand free, but I may as well been trying to move a mountain. “Sure, Callie – Calliope, whatever. Hey, you’re scaring me. Could you let go now?”

Her voice turned as dark as her eyes. “Look at me.”

“Since you asked so nicely I – whoa.” Except for the shape, what was standing before me now was not human. It was like the light of the sun, captured in a bottle. A voice spoke in my head, informing me that this was Calliope, the radiance of art and language made flesh. Raising my free hand to shade my eyes, I could see the bones of my arm as the brilliant glow streaming from Calliope went through me like I was the one made of glass.

Just as suddenly as the manifestation began, it was over. I blinked, and staggered backwards on the sand as Calliope released her grip. Sweat was pouring down my back, and while fumbling to remove my cloak I tried to catch my breath. Demigoddess or delusion, I felt like my brain had just been mugged. And I didn’t like it.

“You know, I’ve got a Dale Carnegie book on influencing people back at my apartment,” I said while Calliope resumed her human form, all the while trying not to notice how shaky my voice sounded. “You’re welcome to borrow it if you’d like.”
There is a point beyond which I just should not go. Someday I’ll learn where that point is. That is, if I live that long. After just demonstrating that she could press the control-alt-delete keys of my brain, and that she was much physically stronger than I am, I still had to make with the funny. And Calliope was not amused. You know that expression about someone’s face turning black with anger? At this point Maxfield Parrish could’ve painted hers using ebony, mixed liberally with jet.

“Ian, throughout history I have met some of the world’s greatest minds. All of them, men and women, have one thing in common: they have a keen sense of humor. You,” Calliope pointed, “would not be numbered among their company. And just to help you out: if you apply Occam’s razor to what I just told you, it was not a compliment.” Before I could say anything she turned and stalked across the sand to the tent, passing Urania on the way.

“I also am surprised you have survived as long as you have, Ian,” Urania said, as she turned to watch her sister go. “Your mouth, as I heard once in your country, delights in writing checks that your body cannot cash.”

“So now it’s your turn to ‘talk some sense into me’ by convincing me this is real?” I asked. “Are you the good cop or the bad cop?”

“That begs the question, does it not?” Urania replied. “Hold out your hand.”

In addition to not knowing when to keep my mouth shut, I’m also way too trusting. I’d just played the handholding game with Calliope, yet without thinking I merely asked, “What question is that?” as I extended to her sister the arm that wasn’t holding my cloak. Before I could blink Urania had struck out with a fingernail and drawn a bloody line across my palm. “Ouch, damn, what the hell was that for?” I shouted as I jerked my hand away. Losing my balance, I fell backwards onto the sand.
“The begged question is: what if we are both bad cops?” A small smile played around her mouth as I cradled my wounded hand. “And now you need to ask yourself, once and for all, are you awake, or merely dreaming?”

Urania stood before me, reminding me in an uncomfortable way of a cat watching a mouse. For want of something better at the moment, I gingerly wrapped the hem of my cloak around my hand to staunch the bleeding, my breath coming in ragged gasps.

“That – wasn’t exactly pleasant, so I take it the correct answer is: I’m awake. Point taken.” Despite what Calliope had said, I refused to let go my sense of humor even if it cost me another gash. “So you’re real. Now what?”

“Americans get under my skin like no other culture,” Calliope said as she pulled aside the tent flap and came out into the waning sunlight. “Ian, please forgive me for losing my temper. In most places on your world my sisters and I are greeted with reverence and honor. And why? Not because we walked the Earth while humans were still trying to figure out which end of a goat to herd,” she said as she held her hand out toward me, “But because we are teachers. We give of ourselves to others.”

“But not in your country,” Calliope continued as I warily offered her my undamaged hand and she helped me to my feet. “Oh no. There you hold no one your better unless they play professional sports or act in the movies or appear on television. Teachers are accorded less respect than used-car salespeople or even lawyers.”

“And whose fault is that?” I asked as I brushed the sand from my clothes. “Isn’t the concept of praising athletes for their prowess something that comes from the Grecian Olympics? And furthermore, aren’t democracy and egalitarian ideals things that you ‘muses’,” I finger quoted, “taught us?”
“I hate to interrupt,” Urania said, “especially now that our boy has begun to accept the enormity of his situation.” She shaded her eyes with one hand as she looked toward where the sun was hanging low in the sky. “But I would say that we have only an hour of light left. We should spend that time preparing for our journey.”

Calliope followed her sister’s gaze. “I agree. Ian, please gather some wood from along the beach. The ocean air can be rather cool in the evening, and we will all appreciate a fire’s warmth. While you are busy, we will prepare dinner.” She turned me to face her by placing a gentle but firm hand on my shoulder. “We will continue our discussion tomorrow morning. Tonight we need to rest.”

As I scavenged along the shoreline, my mind was filled with thoughts of the last twenty-four hours. This can’t be real, I thought as I bent to pick up a piece of driftwood. Muses, in the twenty-first century? Olympus being some sort of Fantasy Island that doesn’t appear on any map? And if this is really happening to me, if I’m really not dreaming, then what about the conference? Heck, forget about the conference, what about my job? My life? How am I going to get home?

My injured hand began to sting, and I realized that I’d managed to rub a few crystals of sea salt into my cut. With that not-so-subtle reminder, I decided that whether it was a dream or not, it appeared that I was here for the duration. I rubbed my hand against my pants, and continued searching for wood.

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“Good morning, Ian. It’s time to get up; we have a long journey ahead of us.”
I pulled my eyes open and looked around. Nope, nothing had changed from the multiple times that I had awakened during the night. I was still on a beach with two Grecian demigoddesses, about to embark on a journey of unknown length and purpose.

Thin remnants of my tangled dreams were still running through my head. “I could be another Lincoln, with the thoughts that I’d be thinkin’, if I only had a brain,” I sang softly to myself as I got to my feet.

“‘Off to see the wizard’ isn’t too bad of an analogy,” Calliope said with a smile. “Although I wouldn’t hold out any hopes for a yellow brick road. Our route will be somewhat less ostentatious.”

“And exactly what route will that be?” I asked.

“That,” Urania answered from where she sat tailor-fashion preparing breakfast by the fire, “is for us to know and you to find out. Suffice it to say that, unlike your students, you will not be bored by what you will learn here.”

“Hey, thanks for reminding me of something I am so proud of. Not.” I joined Urania at the fire – just out of arm’s reach. “I’ve been doing some thinking about ‘Agent Smith.’ It wasn’t an accident that I ran into trouble at the airport, was it?”

Urania gave me what I was starting to recognize as her superior look. “Just our little way of making sure you would be in need of transportation. Do not worry, if you return there will be no record of your entanglement with government bureaucracy.”

“If I return? That doesn’t sound promising.”

“My sister is being needlessly melodramatic,” Calliope quickly said. “What she means is that you should concentrate on the matters at hand. Speaking of which, we should resume our discussion from yesterday while we eat.”
“Fine with me.” Urania handed Calliope a plate of scrambled eggs, mixed with red peppers and onions. My stomach growled as Calliope passed it on to me. Must be the fresh air encouraging my appetite. “Thanks, Urania, Calliope. Looks good.” And smells even better I decided, once my nose caught a whiff.

“Accepting for now that you both are who you say you are,” I said around an eager mouthful, “I guess my first question is: where are we?”

“Olympus, as we told you before,” Calliope answered. “The land takes its name from the mountain at its heart.”

“Yeah, but which is exactly where? From the amount of time we spent in the air, we should be somewhere near Tennessee, but you’d think a place like this would be a bigger tourist attraction than Dollywood.”

Calliope took a plate from her sister as she answered. “As we mentioned yesterday, we are no longer in your world. Many of humanity’s myths and folktales tell of paths leading from the Earth to other planes of existence, such as the realm of Faerie under the hill, or the land of the dead visited by Orpheus.” She waved her fork around to illustrate her point. “This is one such place, connected to your world but separate from it.”

“And we flew along one of those paths to arrive here?”

“Yes, and we changed the chariot to its natural form after we arrived,” Urania said as if the act of a jet transforming into a medieval conveyance pulled by flying horses was an everyday occurrence.

I chewed on both my food and her answer for a moment. “I guess I’ll buy that, based on yesterday’s little adventure. So my next question is: why me?”
Calliope thought for a moment as she took her own plate from Urania. “There are some rules we have to follow as we go about our appointed tasks, Ian. One of those rules is that those we help can only be given what they need when they need it. You would call it just-in-time instruction. Let’s just say that we’re helping you because you were in need of our help.”

“More of a hand up rather than a hand out, as it were? And I’m supposed to figure certain things out on my own?”

“Exactly,” Calliope replied. “You are familiar with Vygotsky’s theory regarding zones of proximal development?”

“Huh? Uh, sure, I reference him in some of my classes. His theory states that children who by themselves are able to perform a task at a particular cognitive level, in cooperation with others and with adults will be able to perform at a higher level. This difference between the two levels is the child’s ‘Zone of Proximal Development.’” I thought for a second. “So, I’m the child in this scenario, and you’re the adults. And our little adventure is going to provide the scaffolding I need to understand things at a higher level than I do currently, right?”


“Okay, so out of the nine muses, why you two? Hang on a sec; let me try to get this one on my own,” I said before they could answer. “If I remember right, Urania, you’re the muse of science, and Calliope, as I learned from that light show yesterday, you deal with art and literature. I teach instructional technology to pre-service teachers. From that I’d guess that Urania, you’re here because technology is related to science, right?”

“That is correct,” she answered with a brief nod before starting on her eggs.
“Where does art and literature fit in?” I asked Calliope.

“Teaching is itself an art,” Calliope replied. “You can help someone appreciate and understand painting, for example, but if they do not have the spark within, they will never be a great painter.”

“And I have the ‘spark’ for teaching?”

“That falls under the heading of something you need to figure out for yourself.”

Ouch, I thought, that’s a painful idea. Could it be that I was in the wrong field? That I felt we teachers didn’t know what we were doing with technology because I didn’t know what I was doing? I felt another presence in my thoughts.

“Don’t go down that path,” Calliope quickly said. “We would not have offered to help you if there were no hope. Remember, sparks can be produced with flint and steel.”

“Conversely, remember that you would not be here if you had not needed our help,” Urania added with a look.

“Aren’t you just little miss sunshine,” I grumbled. “That makes me feel so much better about myself. And by the way, in the future could you at least knock before wandering into my brain?”

“Knock? Like this?”

To my surprise I felt a gentle touch of warmth behind my eyes. “Um, I didn’t mean that literally, but yeah, that’ll be fine. Thanks.”

“As a line from one of your favorite movies goes: buck up little camper,” Calliope said. “Do you have any more questions?”

“Only about a million. But I suppose I should limit them to ones that you might answer.” With an effort I willed my self-doubts to the back of my mind. “We’ve covered
where we are, why I’m here, and why you’re here. So I guess that leaves: what’s next? You said you won’t tell me our route, but can you at least tell me where we’re going?”

“Our goal is the mountain of Olympus itself, ultimately,” Urania answered.

“That’s sufficiently vague,” I said after a moment. “Or are we still under the category of need-to-know type questions?”

“No, not completely,” Calliope said. “The path we will take is much like life. Only the beginning and the end are fixed. What happens in between is up to you.”

“Then let’s go. As much fun as camping on the beach is, I’ve got some questions about myself I’d really like to see answered.” With that we settled in to the business of finishing our breakfast.
The nine muses and their areas are: Calliope, art and epic poetry, eldest and leader of the muses; Clio, history and heroic poetry; Erato, love and romantic poetry; Euterpe, music; Melopomene, tragic poetry; Polyhymnia, sacred music and dance; Terpsichore, dramatic poetry; Thalia, comedic and idyllic poetry; and Urania, science.


This description of Vygotsky’s Zone of Proximal Development is from Thought and Language (1986), p 128.
CHAPTER 3

We broke camp and to my mild regret, abandoned the tent. I’ve always enjoyed camping out since taking fishing trips with my dad as a child, which taught me the lesson that tents come in handy when the weather isn’t agreeable. However, in this case the sisters felt it was much too large to bring along. That wasn’t my primary concern at the moment, however. What I was concerned with was our mode of transportation – a concern that was currently staring me in the face and possessed a mind of its own.

“You’re going to have to be patient with me,” I said to the sisters.

“And why should we do that?” Urania asked.

“Because the last time I was on a horse was at my tenth birthday party.” I eyed my assigned mount with some trepidation. “I’m not sure they like me.” The horse whinnied and took a step sideways as I reached for the reins.

“Don’t worry Ian,” Calliope said. She glanced at her sister. “Riding a horse isn’t that difficult, and these horses are well trained. We’ll take it nice and easy until you get the hang of it.” Urania shrugged agreement.

It only took a few minutes to convince my horse of Calliope’s faith in it and away we rode. True to their word, our pace was slow and steady as we followed the trail that led along the beach from the fishing village up the coast and into the forest. After half an hour I actually managed to relax my grip on the reins. I had to: my hands were starting to cramp.

“So,” I said after I felt reasonably sure I wasn’t going to fall off any time soon, “anybody know any good stories? Or maybe a song?”
“As a matter of fact,” Calliope replied, “I was planning on telling a story. Care to hear it?”

“A story told by a muse? Heck, yeah. Who would pass that up?”

“You would be surprised,” Urania answered.

“Quiet, you,” Calliope said to her sister. “Just because your gifts lay in other areas is no reason to carp.”

“Humph,” Urania said. “I can tell stories just fine, thank you.”

“Excuse me,” I interrupted, “more story, less sibling rivalry please.”

“As you wish,” Calliope replied with a nod. “To begin properly, I need to ask what you remember about the story of Prometheus.”

“Prometheus?” I thought for a second. “Doesn’t the story go that he’s the guy who stole fire from the gods and gave it to humanity?”

Calliope nodded and I continued. “If I remember right, he was punished for this by getting chained to a mountain and having his liver served up on a daily basis as lunchmeat for buzzards or vultures – some kind of scavenger birds.”

“That’s essentially correct, so far as it goes,” Calliope said in agreement. “Myths are often a mixture of truth and metaphor. The story of Prometheus stealing fire from the gods and giving it to humanity is mostly metaphor. The truth is that Prometheus was worried he wouldn’t be remembered by history, and by taking matters into his own hands nearly ruined everything.”

“You’re kidding. A god with an insecurity complex?”

“No a god; a titan. They are more embodiments of chthonic forces than actual deities. There is a difference.” She gave me a glance to see if I understood.
Chthonic forces? Yeah, sure, whatever, I thought and shrugged in response.

“Regardless,” she continued, “as one of the titans the responsibility of Prometheus was to maintain the stability of certain tectonic plates, monitor volcanoes, and keep Gaea from ridding herself of the beings who live upon her. After our father came to power most titans grew content with their roles and their place in the mythos being created, but not him. He wanted to be more than just a background player in the story. And so he came up with what he saw as a cunning plan.”

“Which was to give us fire, right?” I interjected.

“Humanity at that point already had knowledge of fire, and were being taught non-verbal forms of communication,” Calliope calmly stated.

I couldn’t help interrupting again. “Humanity was being taught? Taught by whom? Space aliens?”

“No, by we muses,” replied Calliope. “As I told you yesterday, it is our role to teach and nurture humanity, as you would any child. And what is your fascination with aliens, anyway?”

“And that was Prometheus’ crime,” Urania cut in, obviously treating her sister’s question as rhetorical. “In his desire for self-aggrandizement, he attempted to take upon himself the function of the muse. He did not steal fire itself; as Calliope told you humans already had that. What he stole was the technology of fire – technology humanity was not ready for.”¹

Her voice became more of a snarl as she continued. “He then gave – not taught, gave – that knowledge to humans. As a result of this poisoned gift, your race has suffered much pain. And our jobs became much more difficult.”
“Your jobs?” I asked with a smile. “As pilot and flight attendant?”

“What?” Urania said in surprise. “No, you ignorant son of a goat.”

“Sorry,” I quickly said in response to her vehement reaction, “just trying to lighten the mood.”

“My sister doesn’t care for most humor,” Calliope said. “Although, that wasn’t the worst I’ve heard from you.”

Urania glared at Calliope for a moment. “Humph. Whatever. Are we done with the preface to your tale?”

“Any other – real – questions about Prometheus, Ian?” Calliope asked. I shook my head.

“Very well, then. Long ago, in the time before written history, there was a man named Deucalion.” I was fascinated to notice how Calliope’s voice took on a melodic cadence as she continued, “and he was the son of Prometheus. He was human, not a titan like his father, and was known far and wide for his good deeds and kindness to his fellow man. His wife’s name was Pyrrha, and she was one of the best of the daughters of men.”

“Not long after our father bound Prometheus on Mount Caucasus for his crime, the behavior of humanity changed for the worse. They no longer built houses and tended their flocks and lived together in peace; but using the stolen knowledge given to them by Prometheus every man was at war with his neighbor, and there was no law or safety in all the land. As the condition of the world grew worse with every passing day, Zeus became weary of seeing so much bloodshed and of hearing the cries of the oppressed and the poor.”

“These men,” he said to those on Olympus, “are nothing but a source of trouble. Before Prometheus intervened they were good and happy; and now they have become so
wicked that even we here on our mountain will soon be in danger from them. If this continues I can only see one thing to be done with them, and that is to kill them all before they destroy the world.”

“So Zeus sent a great rainstorm upon the earth,” Calliope continued, “and it rained day and night for weeks; and the sea was filled to the brim, and water ran over the land and covered first the plains and then the forests and then the hills. But men kept on fighting and killing each other, even while the rain was pouring down and the sea was coming up over the land.”

“Hang on a second,” I interrupted. “This sounds a little familiar. Shouldn’t there be a guy with an ark who runs around collecting animals two-by-two?”

“No in this version of the story,” she replied. “But there is someone much like him, only without the floating pet shop. Just wait until I’m finished, and you’ll see how things turn out.”

“No one but Deucalion,” Calliope resumed, “was ready for such a storm. He and his wife alone had stayed faithful to the old ways and refused to take part in the violence raging around them. Once every month they traveled the hidden paths to the foot of Olympus where they spoke with our father.”

“The day is coming, Zeus told them, when I will send a flood to wipe mankind from the face of the earth. Be sure that you are ready for it, my friends.”

“And so when the rain began to fall, Deucalion drew from its shelter a boat filled with supplies which he and his wife had prepared for just such a time. Together they sat in the boat and floated safely on the rising waters. For many days and nights, I cannot tell how long –”
“About forty?” I asked with a smile.

Calliope gave me a glare while Urania merely raised an eyebrow in my direction.

“Would you like to finish this story, or shall I?” Calliope asked.

“Nope, you’re doing fine.”

“Then, hush. For many days and nights, at least forty,” she emphasized with a warning look, “the rain fell. First the tops of the trees were hidden by the flood, and then the hills, and then the mountains; and when Deucalion and Pyrrha could see nothing anywhere but water, they knew that all the people in the land had been drowned.”

“After a while,” she said with another sharp look, “the rain stopped falling, and the clouds cleared away, and the blue sky and the sun came out overhead. Then the water began to sink very quickly and run off the land towards the sea; and early the very next day the boat settled high upon a mountain called Parnassus, and Deucalion and Pyrrha stepped out upon dry land. After that, it was only a short time until the whole country was laid bare, and the trees shook their leafy branches in the wind, and the fields were carpeted with grass and flowers more beautiful than in the days before the flood.”

“But Deucalion and Pyrrha were very sad, for they knew that they were the only people who were left alive in all the world. At last they started to walk down the mountainside towards the plain, wondering what would become of them now. While they were talking and trying to think what they should do, they heard a voice behind them. They turned and saw a noble young prince standing on one of the rocks above them. He was very tall, with blue eyes and yellow hair. There were wings on his shoes and on his helm, and in his hands he bore a staff with golden serpents twined around it. They knew at once that he
was Mercury, the messenger of Olympus. Falling to their knees, they waited to hear what he would say.”

“Is there anything that you wish? Mercury asked them. Tell me, and you shall have whatever you desire.”

“We should like, above all things, said Deucalion, with a glance at his wife, to see this land full of people once more; for without neighbors and friends, the world is a very lonely place indeed. Pyrrha nodded in agreement.”

“Go on down the mountain, said Mercury, and as you go, cast the bones of your mother over your shoulders behind you. With these words, he leapt into the air and was seen no more.”

“What did he mean by that? Pyrrha asked. Both our mothers passed long ago, and the gods alone know where their bones have been scattered by this flood.”

“You are right, said Deucalion. And yet, what then could be the bones of our mother?”

“Perhaps he meant the stones of the earth, suggested Pyrrha. Let us go on down the mountain, and as we go, let us pick up the stones in our path and throw them over our shoulders behind us.”

“It seems a rather odd thing to do, Deucalion commented. But I will follow your lead in this, and we shall see what happens.”

“And so they walked on, down the steep slope of Mount Parnassus, and as they walked they picked up the loose stones in their way and cast them over their shoulders. The stones that Deucalion threw sprang up as full-grown men, and the stones that Pyrrha threw
sprang up as full-grown women. When at last they reached the plain they found themselves at the head of a multitude of human beings, all eager to serve them.”

“So Deucalion became their king, and Pyrrha their queen. Together they taught them how to build homes, and till the ground, and how to do many useful things; and the land was filled with people who were happier and far better than those who had dwelt there before the flood. And they named the country Hellas, after Hellen, the son of Deucalion and Pyrrha; and the people to this day are called Hellenes.” Calliope went back to her normal speaking voice. “You know the land by another name: Greece.”

We rode for a few minutes in silence while I thought about Calliope’s story. “I’m curious,” I finally said. “Without getting into the specific similarities between this story and the story of Noah in the Old Testament, as well as similar myths in other cultures, is there an actual historical event that is the basis for tales of the flood?”


“Which glaciers?”

“All of them.”

“All of them? What are you…” About then the little light bulb in my head flickered into life. “Of course. This story is set at the end of the last ice age, right?”

“That is correct,” Urania said with a nod. “For over ten thousand years, a great deal of the fresh water in the world was trapped as ice and snow. When the world warmed and the glaciers began to melt, great amounts of water evaporated into the atmosphere. As the water vapor cooled, it condensed around dust particles in the air and returned as rain. Ocean levels rose by over a hundred meters to cover the coastal areas, lakebeds exposed by the retreating glaciers filled, and rivers already swollen by icy runoff from the melting glaciers
burst from their banks. When the water reached the warming oceans, the cycle accelerated. Entire cities and cultures were wiped out by years of torrential rains and flooding, leaving only traces behind."

“Wow,” I said as I shook my head. “And all over the world, humanity passed down the story of a flood sent by the gods to destroy a wicked world as a way to explain what happened.”

“Excuse me?” Calliope said with an amused snort. “Humanity had little to do with keeping that story around. They were rather busy fleeing to high ground and starving. If my sisters and I hadn’t worn ourselves to a frazzle teaching you how to create an agrarian culture, few of you would be here now, much less telling stories about a great flood.”

“Um, thanks,” I said. “This is interesting and all, but what does this have to do with where we’re going?”

“We’re going to visit Deucalion,” Calliope answered.

“The son of Prometheus? Now I’m really confused. I thought he was just an allegorical character in your story; some sort of Jungian archetype created to illustrate a point.”

Calliope smiled. “Again, you must keep in mind that much of what you think of as myth has its basis in fact.”

“How much of the flood story is real?” I asked. “And how does it relate to what you told me about Prometheus?”

Calliope looked at her sister. “Do you think he’s ready? Or should we let him figure this out on his own?”
Urania shrugged. “He seems to be adjusting to his situation. At the least, his mind has grasped upon this topic and stopped chanting the odd phrase ‘there’s no place like home’ over and over.”

“Then perhaps I should tell him.”

I cleared my throat loudly until they both looked at me. “Hello, I’m right here, remember?”

“How could we forget?” Calliope replied tartly. “As Urania told you before, Prometheus didn’t give humanity the knowledge of fire, but rather knowledge you were not ready for. Specifically, I’m talking about the technology of things for which fire could be used, such as metallurgy.”

“Why was that a problem? It seems like a good thing to me.”

She arched an eyebrow at me. “At the time, your ancestors were using chipped stones to create tools for hunting and building – and for killing each other. It wasn’t a perfect world, but at least your ability to make war was limited by the crude nature of your weapons.”

“Hey,” I objected, “they weren’t my weapons; I wasn’t there.”

“Humanity was there, and you are a member.”

“Sins of the fathers, and all that, huh?” I shook my head before she could respond. “Go on, I’ll try not to take this personally.”

Urania turned suddenly in her saddle to look at me. “But that is the first lesson you need to learn,” she said in a quiet voice.

“What lesson is that?” I asked, caught off guard by her statement.
Calliope glared at her sister. “As I was saying,” she said, as Urania looked away, “humanity was given the ability to create more efficient tools. Prometheus thought you would use them to become more proficient hunters, and granted, that did happen. The great herds that roamed the grasslands and valleys near the ice were hunted nearly to extinction.”

I saw where this was going. “And as the herds shrank, the people got hungry, and as the people got hungry, they – we – turned our spears and knives on each other. And with metal weapons, we got better at war.”

Calliope sighed. “Much better. You – they – killed each other faster than the rate of reproduction. If our father hadn’t intervened, the only people on your world now would be descended from those who lived near the equator, far away from the ice.”

I was lucky no bug took the opportunity to fly into my mouth when my jaw dropped. “You’re seriously telling me that Zeus ended the last ice age? Zeus, king of the Olympian gods, master of lightning and thunder and all that stuff – he’s real?”

Calliope burst out into peals of bright laughter while Urania gave me an amused smile. “Look at your hand. Are we not real?” Urania asked. “Then why should not our father be real as well?”

I was bummuzzled. “But, you’re… I mean, I guess I’m starting to believe that you are who you say you are, but I hadn’t thought about…” My voice trailed off as a thought skidded to a stop in my head. “Who else is real?”

My shocked question only managed to elicit more laughter in response, this time from both sisters. Even the horses nickered. After a moment I realized that I wasn’t going to get an answer. Apparently Urania had no problem laughing at me, just not with me.
“Okay, fine, have a good laugh,” I said, starting to feel annoyed. “Ha, ha. When you’re done, would you mind telling me exactly how your father, who evidently exists,” more laughter, “‘intervened’ to end a global ice age?”

Urania calmed down first. “It was not that difficult, at least in principle, although the means is far beyond any Olympian but him. He caused a shower of meteors to strike across the oceans of your world. The steam clouds from the multiple impacts covered the globe, trapping infrared energy from the sun that had previously been reflected back into space by the snow and ice. Atmospheric temperatures rose a few degrees, enough to trigger the glacial melting process. In addition, glaciers trap a good deal of what you call greenhouse gases. They help retain the world’s heat.” She shrugged. “The rest you know.”

“And after the weather patterns settled down, humanity, with our help,” Calliope added, “learned how to cultivate plant life.”

“And according to your tale, everyone lived happily ever after.”

“You know that is merely a metaphor,” Calliope said with a shake of her head. “Newly settled villages grew into towns, towns became cities, cities spawned countries, and the bloodshed never stopped. But at least your ancestors, as your saying goes, didn’t have all their eggs in one basket.”

I shook my head. “Sorry, but I’m not completely buying this. Are you honestly saying that if we hadn’t had technology, we’d still be hunters and gatherers?”

“Not at all. When the natural weather cycle would have caused the glaciers to melt, a few centuries later, we planned to teach you how to smelt metals out of ore. It was the misuse of technology that forced us to save you from yourselves.”
I mentally chewed on this for a moment. “Getting back to your question of a little bit ago, I still think technology is a good thing. But I do see your point. Giving the knowledge of metallurgy to people in that situation is like giving someone a chainsaw to cut hair. It might work, but more than likely the results would be a bit messy.”

Calliope grimaced at my imagery. “Yes, well, I’m glad you understand. And getting back to your question, as I said before we’re on our way to visit Deucalion.” She held up a hand before I could say anything. “Yes, he’s still alive. He may be human, but being the son of an immortal has some benefits, even if the immortal in question is permanently out of favor.”

Urania sniffed. “Out of favor, indeed. That is like saying what he did was only a slight faux pas.”

“You really don’t like him, do you?” I asked her.

“Like him?” Urania said angrily. “What I would like is for him to still be hanging from a mountain, his anguished screams ringing down the valley like festival music as ravening flocks of vultures feast upon his intestines. That is what I would like. What I do not like is that our father allowed Heracles to release him from his well-deserved punishment.” Urania kicked her horse in its sides and rode out ahead, a rain of imprecations and curses upon Prometheus fading off into the distance.

“Wow. Remind me not to ever get on her bad side.” I watched Urania and her horse go out of sight as the trail bent. “Think we should catch up to her?”

“How’s your hand?” was Calliope’s quiet response.

I looked at the scabbed-over line across my palm. “Um, yeah. On second thought, what do you think about giving her a little time to be by herself?”
Calliope chuckled. “I’ve always found that to be a good idea.”

After a moment I decided to ask another question. “A meteor shower? Really?”

“It was quite the sight. They streaked across the sky in waves, trailing fiery tails that stretched for kilometers.” She reached out her hand to me. “Here. Give me your reins and take my hand.”

I did as she asked. For the next few miles, all my questions were put aside as Calliope filled my mind with her memories of her father’s intervention, with Holst’s Jupiter movement from The Planets Suite as an added soundtrack.

* * *

After a couple hours the forest thinned out and Calliope and I came to an arched stone bridge spanning a small river. There we found Urania waiting for us, sitting calmly on the ground while her horse grazed nearby. With a slight nod of greeting she remounted and we crossed together. So she does calm down after a bit, I noted. That’s good to know.

On the other side of the bridge we passed a rutted track branching off to our right. Near that path was a mill situated on the riverbank about fifty meters upstream from the bridge. The creaking sound of its wheel as it slowly turned was gently carried to us on the breeze.

Small thatched cottages became visible as we went on, and as the houses became more numerous the path we were on became a cobbled road. A few people, dressed in a style similar to what we wore, looked up from what they were doing to watch us pass. Some of them bowed or tugged their forelocks as they recognized my traveling companions. Ahead
of us a man driving a horse-drawn cart filled with cut grass pulled out onto the road and we slowed our pace to match his.

“Doesn’t look much like what I pictured as a Grecian town,” I observed as I looked around. “If I were to guess, I’d say it looks more like a village in medieval Europe.”

“And you would be correct,” Calliope replied. “People from throughout history and from many places in your world have immigrated to our land – and not always of their own volition.”

“In this case,” she continued with a wave, “the ancestors of these people once lived on and around the island of Avalon, near Glastonbury in England. When the isle retreated through the mists from your world in 1539 they found themselves here.”

“Wait just a minute.” I tried to take in her account. “I’ve been to Glastonbury. The locals told me that the tor just outside of town was the historic site for Avalon, and it’s still there. I’ve climbed it.”

Calliope smiled at my confusion. “You climbed a hill topped by a ruin, left behind like a snake shedding its skin. The true Avalon fled from Henry the Eighth in order to keep its holy places from being profaned.”

“Oh-huh. Sure,” I said with a chuckle. “Feel free to add any other indications of skepticism you’d like.”

“You don’t believe me?” Calliope asked, then pointed ahead of us. “Then what do you make of that?”

I turned to look where she indicated and nearly fell off my horse. About a kilometer away, beyond the two and three-story timber-frame buildings at what I guessed to be the center of town, was a hill rising dramatically from the center of a small lake. And not just
any hill either, but one that I’d made a point of visiting when I was in the UK a few years back. Glastonbury Tor.

One difference I noticed right off the bat was that the ruin of St. Michael’s church atop the tor in my England was missing. In its stead stood a large stone building that made me think of pictures I’d seen of early Norman churches. Otherwise, from what I could see the tor looked the same as it had on my trip, long winding path to the top and all.

“Well, mister skeptic?” Calliope asked after I’d sat staring for a minute.

“It’s, well,” I replied, searching for a way to regain my lost credibility, “it looks somewhat similar, I’ll give you that.”

Calliope chuckled, and even Urania gave way to a smile. Perhaps if teaching didn’t work out for me, I thought, I could start a new career as jester for the muses.

“Okay, fine, I give. It’s Avalon,” I conceded. “What do we do now?”

“There’s an inn up ahead,” said Calliope, amusement still evident in her voice.

“We’ll stop there to get some food for us and our horses.”

“Works for me,” I replied. “What about Deucalion?”

“He awaits us atop the tor. We have time for a break.”

In a few minutes we found the inn, and I found the ground. After only a few hours of being on horseback my legs felt like they were made of the firewood I’d gathered last night and didn’t want to support my weight. As I sat attempting to regain sensation in my lower appendages I was again the cause of amusement for the muses. Even the livery boy was smiling as he led the horses around back to the stable.
“Couldn’t have taken a Jeep to get here, oh no,” I muttered in growing discomfort as
the wooden feeling gave way to pins and needles, “Wouldn’t fit in with the local
atmosphere, I’m sure.”

“You’ll get used to riding,” Calliope said, dropping my saddlebag on the ground next
to me. “Just give it some time.”

In a few more minutes I was back on my feet and hobbling after the muses into the
inn. I breathed a sigh of relief when we were seated at a table in the common room. After
our meal was ordered I had to satisfy my growing curiosity.

“Ladies, there’s a few things I’d like to ask,” I began.

“Let me guess,” Urania cut in. “Avalon is real? Oh, my,” she said in an eerily
accurate impression of my voice. “What else is real?”

I gave her my version of the raised eyebrow, the one I use to intimidate undergrads.
“You used to pull wings off flies as a child, didn’t you?”

Urania leaned forward and bared her teeth. “With relish. It is a pity your human ears
cannot hear their tiny screams. Help me, help me,” she said in a high-pitched voice.

Brr. I looked at Calliope. “She’s kidding, right?”

“Yes, she is, and you asked for it. Sarcasm is as close to humor as you’ll ever get
from her.”

I decided to hold my questions until later as I saw the serving girl carrying our food
from the kitchen. They say there’s nothing like the great outdoors to build an appetite and,
based on my appetite, they were right. When we were finished Urania went to talk to the
innkeeper. What I overheard refreshed my curiosity.

“Not to be nosy,” I asked Calliope, “but aren’t you going to get us some rooms?”
“That won’t be necessary,” she replied. “We will be staying on the tor for the next few days.”

“The next few days? How long is this little intervention of yours going to take, anyway?”

“As long as it takes. Do not worry,” she added at the look of consternation I was giving her, “If all goes well, your absence in the outside world will not be noticed.”

My concerns from the night before came bubbling back to the surface. “But I’ve got, well, places to be, and things to do.” Like not lose my job, I thought anxiously.

Urania returned to us. “As my sister just told you, do not worry about it. To quote another of your favorite movies, you need to focus on where you are,” she said, emphasizing each word from *The Empire Strikes Back* with a finger tap on my forehead, “and what you are doing.”

I brushed away her hand. “Fine, Yoda. When are we going?”

“Now,” she replied as she turned on her heel, and Calliope and I followed her out of the inn.

I looked around after blinking in the afternoon sunlight. “Aren’t we missing something?” The sisters turned to look at me. “Not that I was looking forward to another equestrian escapade, but where are the horses?”

“The hill is sacred, Ian,” Calliope replied as she and Urania began walking. “We go on foot.”

I looked toward the building at the top of the tor. Although it was less than a kilometer away as the crow flies, I knew from visiting the tor in my world that the path switched back on itself so many times we had a good three click walk ahead of us. I put on
my pseudo-Stetson, hitched my saddlebag over my shoulder, and followed. At the edge of the lake we stepped through a hedge of rushes that masked the entrance to a stone walkway that crossed to the hill.

“This is different,” I commented aloud as we walked above the waves. “There’s no path across the lake to the tor I visited – not to mention the lack of lake.”

“You must learn to keep an open mind,” Urania said as she reached over to give me a knuckle rap on the side of my head. “Allow me to remind you of a basic fact: this is not your world.”

“Evidently by an open mind you mean an open skull,” I said as I rubbed my temple before noticing I was using my scratched hand. One thing the myths don’t mention about muses is that they can be hazardous to your health.

“You two done?” Calliope asked. I nodded quickly. Urania continued walking. “I’ll take that as a yes.”

“The story of Avalon,” she continued, “is a long one. For the sake of brevity, I’ll focus on the parts that are pertinent to your visit. Are you familiar with William Blake’s poem *Jerusalem*?”

I thought for a second then shook my head. “Nope. Can’t say that I am.”

Calliope began to recite:

“And did those feet in ancient time
Walk upon England’s mountains green?
And was the Holy Lamb of God
On England’s pleasant pastures seen?”
“Okay, sure,” I said in recognition. “That’s one of my favorite Emerson, Lake and Palmer songs. It’s about Avalon?”

“Specifically, it’s in regard to an ancient British tradition. This tradition holds that Glastonbury was the site of an ancient druidic school; that Joseph of Arimathea was a relative of Mary the mother of Jesus; that he derived his wealth from tin mines near Glastonbury, which he visited on a regular basis; and that Jesus as a teenager accompanied Joseph on one such visit and studied with the druids.”

“Say wha – right, sorry, open mind,” I said, interrupting my interruption before Urania could reinforce her reminder. “Allow me to try that again. I thought that Britain wasn’t part of the Roman Empire until the time of Claudius. Wasn’t Jesus earlier than that?”

“Tin was a very valuable metal in the ancient world,” was Urania’s response. “It is necessary for the manufacture of bronze. And you know what bronze was first used for?”

“To make weapons,” I replied after a moment. Prometheus again.

“Correct. Phoenicians were importing tin from Britannia long before Rome was founded. It is because of tin that the Romans tried repeatedly to conquer the island.”

“After the Crucifixion,” Calliope continued as we walked, “the legend tells that Joseph returned to Glastonbury, bringing the chalice of the Last Supper with him – what you call the Holy Grail – as well as the Dolorous Spear. Reaching Glastonbury, he planted his staff, which took root and blossomed into a thorn tree. The Grail and Spear passed into the keeping of the scholars at Avalon and were hidden. Centuries later the seeking of them became the goal of Arturus and his followers, but that is a tale for another time.”
“Okay, now I vaguely remember hearing some of that from the tour guide when I was here – there – before. But it still doesn’t answer my question. What makes Avalon so special?”

“Where better for Deucalion to raise the light of learning than near a site that fed his father’s darkness?” Calliope responded.

“It does have a sense of poetic justice to it, now that you mention it,” I said after a moment. “Is Deucalion’s school the reason the area is no longer in my world?”

“That is the main reason,” she answered. “Avalon began moving away from the outside world not long after the chaotic reign of Edward the first began. That is when an earthquake leveled most of St. Michael’s church atop the tor – your version of the tor, that is.”

“Why is the church named for Michael and not Deucalion?” I interjected.

“Legend has it that the archangel Michael waged a great battle with Lucifer atop the tor,” Calliope said.

“And another name for Lucifer is light-bringer, which is Prometheus’ claim to fame… or infamy,” I added quickly for Urania’s benefit. “I get it.”

“After that time access to Avalon was limited to those who knew the secret ways,” Calliope continued. “In the sixteenth century Henry the Eighth, after breaking with the Pope, sought to consolidate both the wealth and the power of the English churches under his control. The bishop of Glastonbury was friendly to those on Avalon. To protect them he refused to reveal the secret paths. For his trouble the King had him executed atop the tor.”
From her tone it sounded like Calliope was done with her story, which was just as well. We were beginning the last leg of the path, and the ascent at this point was so steep I needed all my breath for the climb.

When I stumbled forward I realized we’d reached level ground, and I stood for a minute with my hands on my knees while I caught my wind. “That trail,” I said after my heart had stopped pounding, “is not ADA compliant.”

“ADA?” Urania asked.

“The Americans with Disabilities Act of 1990,” I replied as I caught my breath. “It deals with providing easy access to public places, among other things.”

Urania snorted in response, while Calliope ignored my comment entirely. I looked around, confirming my earlier observation that, other than the building known as St. Michael’s being intact, the hilltop looked much as I remembered it.

“Wow,” I exclaimed in awe. “What an incredible view. You can see nearly to the ocean.”

“Wait until you catch the sunrise up here,” a man’s voice said from off to my left. “It’s bloody marvelous.”

At somewhat less than six feet in height, the balding man with a severe five o’clock shadow walking toward us from the now open door of the stone structure certainly didn’t fit any of my preconceived notions of what I’d pictured the immortal son of a titan – or an archangel, for that matter – to look like. When he took my hand to shake it, however, his grip on mine was as firm as Calliope’s had been back on the beach.

“So you’re Ian,” he said with a friendly smile. “Damn glad to meet you. I’m Deucalion. Considering your heritage, though, just call me Mike.”
“Nice to meet you, um, Mike” I replied.

“Expecting somebody taller, were you lad?” He laughed at my look of embarrassment. “That’s fine; I get that all the time. No worries.” He slapped me on the back and nearly sent me sprawling. I’ll feel that in the morning, I thought.

Deucalion/Michael turned his attention to the muses.

“Callie, Una, let me look at you!” To my surprise he wrapped his arms around them both in a hug that lifted them off their feet. “Just as I thought: neither of you looks a day over ten thousand!”

My surprise got even greater at their response. Urania was giggling – giggling! – and Calliope pulled an arm free to rub him on his shiny head. “You’re one to talk, old man. I remember when your pate wasn’t a navigation hazard on sunny days.”

Michael roared in laughter. “You’ve got me there, lass.” He set down the sisters and rubbed a tear from his eye. “Ah, it’s good to see you both. It’s been far too long.”

“It has,” Urania agreed. “But you know how things are in the outside world.”

“That I do,” he said with a shake of his head. “Not so good as they could be.” He took a deep breath. “But when have they ever been, eh? And where would we be if they were? Out of work and on the dole, I’d wager.”

Immortals, on welfare? I asked myself. There’s a scary thought. Talk about worrying about the Social Security fund running out.

“Don’t be concerned about us,” Michael said to me, laying a finger alongside his nose. “We solve all the world’s woes, why, we’ll find something to keep us busy. I’ve always fancied learning to play the guitar, me.”

“I’ll try, sir.”
“No sirs around here, lad,” he said with a laugh and another rib-jarring pat on the back, “just your old Uncle Mike.”

“And speaking of that, where is Pyrrha?” Urania asked as I cautiously checked to see if my spine was intact. “Is she not home?”

“You’ve missed her, I’m afraid,” Michael replied. “She’s off helping some farmers in the north valley plan for next season.”

“That’s too bad,” Calliope said. “We were hoping to visit with her while you and Ian were away.”

“While we were away?” I asked. “Where to now? My dogs are still barking from that climb.”

“A wee bit out of shape, eh, lad?” Michael said as he waved us toward his home. “I’d wager you could do with a cold drink after that climb, what?”

A drink? Best idea I’d heard all day. “As I like to say back home, Mike, that would be just what the doctor ordered.” His laughter lasted all the way inside.
1 (page 72) The story of Prometheus and his theft of fire from the gods is from Michael Grant, *Myths of the Greeks and Romans*, (1962), p 178-89.

2 (page 73) The story of Deucalion, Pyrrha, and the flood is from Grant, p 350-51.

3 (page 78) This pseudo-scientific explanation for the flood myth is complete artistic license on my part. It is meant as an example of there being other ways of looking at events than those commonly accepted – anti Occam’s Razor, as it were.

4 (page 82) During Heracles’ eleventh labor he slew the raptor and freed Prometheus. From Grant, p 178-89.

CHAPTER 4

“So, lad,” Michael said, before taking a sip from the coffee mug he carried with him from the kitchen. “You teach instructional technology, eh? Tell me about it.”

His question caught me off guard. After our arrival atop the tor late yesterday afternoon Michael played the proper host by providing mugs of cold ale before taking me on a tour of his home. While the structure looked like an old stone church on the outside, the inside was more like a medieval manor house from some Merchant and Ivory movie, complete with wainscoted walls and exposed beams crossing the ceiling.

When the tour was over we settled in the largest room in the building, a vaulted great hall complete with three-meter tall leaded glass windows, hanging tapestries, and a stone fireplace nearly large enough to walk into. The afternoon stretched into the evening as Michael entertained us with stories about his life and the village of Glastonbury, but all my questions about why I was here were deflected with comments about there being “time enough on the morrow for all that.”

This morning, after a quick breakfast in the kitchen, the muses had chatted with Michael for a moment before making some typically enigmatic remarks about discussing a change in plans and going outside. At the moment I was nosing about in the great hall. Multi-colored beams of sunlight were streaming in through the leaded windows, and I was finishing my second mug of coffee while examining the contents of the bookshelves that lined one entire wall. I’d just spotted a volume entitled: *A Midsummer Night’s Dream, part two: The Pearls of Titania*, by William Shakespeare no less, and had been reaching for it when Michael asked his question.
“Instructional technology?” I echoed. “Uh, what about it?”

He shrugged. “I’d just like to know what you think about the history of the field.”

“What I think about its history?” I repeated.

Michael walked to one of the windows and gazed out for a moment. “You’re putting me in mind of a parrot I once saw at the London zoo. I’ve never had a bird as a student before. It could be interesting.”

Parrot? What? Oh, he’s talking about me. I quickly pulled my attention away from the hitherto unknown play and joined Michael at the window. “Um, sorry. The history of instructional technology. Right.” I decided to give him an answer from my doctoral preliminary exams.

“Well, instructional technology is the study of how to improve teaching and learning through the use of technology. As a field it has gone through several stages in its history. It began as visual education, moved to audiovisual education, and developed into instructional, or educational, technology. Its intellectual history is a blend of ideas from a variety of foundational disciplines, such as psychology and education, in addition to the concepts attributed to research and theorizing by those within the field itself.”

Michael’s habitual smile was gone. “That’s a well-stated description of the field, Dr. Hlaford. If you were writing a textbook, you could put that in the first chapter.”

I did once, I almost answered. “Um, thanks. I guess I’m not sure what you’re asking. Do you mean dates and places, and who developed what, that kind of thing?”

He shook his head. “No, lad. Let me change the question around a bit, eh? Why do you teach instructional technology? And I won’t take ‘chicken soup’ as an answer.”
“You heard about that? I shouldn’t be surprised,” I added. “Pesky muses.” I thought for a second before continuing. “I teach it because it’s a high-tech world we – I – live in. Student teachers need to know how to use technology in preparation for their careers.”

“And why is that, do you think?”

“Well, teachers who don’t know how to use technology have a harder time getting jobs,” I replied.

“So it’s a vocational skill, then?” Michael asked.

It was my turn to shrug. “Sure, I guess.”

Michael took a moment. “And do you think it makes them better teachers for having learned how to use technology?”

“Honestly?”

He nodded. “Of course, lad.”

I thought back to my conversation with Bill and Jeff on Friday. “You know what?” I said with a sigh. “I haven’t got a clue.”

“Then that’s where we’ll start.” He drained his mug and turned. “Let’s go.”

Finally, some answers. I followed Michael out of the house. The sisters were seated lotus fashion on the grass, but weren’t so deep in meditation that they couldn’t return his wave as we walked past them. Evidently “Uncle Mike” and I were on our own for whatever was coming next. At the back of the building we descended a stairway to a shadowy passage carved out of the bedrock below Michael’s home. A few steps later my guide paused before a wooden door.

“Do you recall lad, how in Dickens’ Christmas parable Scrooge was unseen and unheard as the spirits took him around?”

“This will be somewhat different.” With that he opened the door and the passage was flooded with light. Despite the events of the past few days, when my eyes adjusted what met my gaze set a new high-water mark on my sense of amazement.

As Michael ushered me through the door we stepped out into an open town square, paved with stone cobbles, harshly lit by the blazing sun. Shielding my eyes from the sudden glare, I turned back to see that our door was now in the side of a mud brick building, although just before it closed I caught a glimpse of the passage on the other side. In a daze I looked around the square, taking in the congestion of people and animals. With my next breath my nostrils were assailed by the scent of rotting garbage. Trying not to gag, I turned to see a man emptying a wooden pushcart of brownish-green refuse into the wide nearby river that ran sluggishly along one edge of the square.

I looked at Michael in confusion, and noticed he was wearing loose robes. Glancing down I saw that was similarly dressed. “How did you…?” I began, before realizing that was a silly question. He’s the son of a titan. And he’s the archangel Michael. Right. I guess it’s time for that open mind. I took a deep breath, then immediately regretted it as I got a fresh lungful of garbage stench. “Bleh. Uh, where are we?”

“In a place long vanished in time, yet the home of something very important.”

“Vanished in time… wait a minute. We traveled in time? Sister Mary Francis,” I exclaimed.

“You’ve been traveling in time your entire life – just usually in the other direction.”

Other direction? Oh, right, into the future. “Uh, when are we? I mean, what’s the date?”
Michael glanced at his wrist with a smile. “Oh, and me without a watch. I’d say it’s about the beginning of the fifth millennium, BC.”

“And I wouldn’t fall in the river, if I were you,” he continued as I wobbled a bit in reaction to his news. “The Euphrates isn’t exactly sanitary, if you catch my drift.”

That caused me to look again at the man with the pushcart. “If this is the Euphrates, then that means – we’re in Mesopotamia?”

My question earned me another pat on the back. “Very good, lad!”

“You could make a fortune in the guided tour business with that door,” I mused aloud as I looked back at the now closed, and to all appearances rather ordinary, door. A fresh thought occurred to me about then.

“Michael,” I began.

“Mike,” he interjected.

“Right. Um, Mike, maybe I’ve read too much science fiction, but if we’re really here, physically, then isn’t there a danger of changing history?” I waved an arm around to illustrate my point. “I mean, what if the garbage guy over there is one of my ancestors, and I accidentally shove him into the river? I might never exist.”

Michael raised an eyebrow. “Then let’s try to avoid that, eh?”

I shivered. “Um, yeah. Not a bad idea.” Yet another surprise hit me about then.

“Wait a minute. These people - I can understand them.”

“You can? Jolly good,” Michael said as he turned to walk toward a group of men gathered on one side of the square. “I love it when a plan comes together.”

“What? No, I mean that I understand what they’re saying, their language,” I said as I fell in step with him.
“Wouldn’t do much good to bring you all this way if you couldn’t, now would it?” he asked with a grin in my direction.

“I guess not.” In the face of having traveled over seven thousand years into the past, being able to understand ancient Sumerian really wasn’t much of a big deal.

We reached the edge of the group we’d been walking toward, and Michael put a finger across his lips. “Listen,” he said softly.

As I listened and watched for the best part of an hour, I noticed a couple things. One was that the men appeared to be working in pairs. One man would slowly and clearly say a few sentences, and the other man would repeat it back to him. Every so often the second man would recite a longer amount, to either nods or the occasional correction from the first.

The other thing I noticed was their topic of conversation, if you want to call it that. “Crop reports?” I asked Michael, breaking our silent observation. “They’re memorizing crop reports?”

“That they are,” Michael replied, taking my arm and walking me away from the group so we could talk without distracting them. “As well as shipping rates, delivery times, and other information the local grain merchants need to do business.”

I looked over at the group. “Wow. I had trouble remembering my lines for our high school plays. I can’t imagine doing something like this.”

“It’s a lost gift, I’ll agree.” He turned and began walking back to our magic door. After we reached the building and Michael saw that no one was paying any attention to us, he turned the handle. We stepped through into the stone passage and I turned around while Michael shut the door behind us.

“Was that it?”
Michael chuckled. “Just getting started, lad.” He re-opened the door and stepped back across the threshold. Obediently I followed him through the opening. We emerged into what appeared at first glance to be the same town, but I quickly noticed it looked somewhat larger and dirtier than before. Many buildings now had multiple stories and were constructed with stone blocks instead of simple mud brick/adobe.

“Ready, lad?” Michael asked.

“Where – I mean, when are we now?” I asked, trying to not get run over by the crowds of shoppers visiting the rows of vendor stalls that hadn’t been there on our previous visit.

“We’ve moved forward a few centuries,” Michael replied. He waved at the busy square. “Nothing constant but change, what?” He waded into the crowd, and over the background noise I heard him say, “Let’s go find this time’s educational system.”

I followed Michael across the square, his broad shoulders opening a path for me like an offensive lineman blocking for a running back. He bounded up a wide set of stone stairs at the front of a large building, and waited for me by the arched entrance.

“Here we are, the Ur school system. It’s no Hogwarts, but what they’re learning here is magic,” he announced with a grin.

“School system? Magic? What?”

“You’ll see,” he laughed, and we went inside. The building was open on the interior, with evenly spaced beams and columns supporting a ceiling some five or six meters above us. Near the entrance of the building groups of children were seated on the floor, making marks on clay tablets with slender reed stalks. We watched as a man who I took to be their teacher walked behind the students, looking over their shoulders while they worked.
Occasionally he would lean forward and offer suggestions or corrections. I noticed one child
pick up a block of wood from next to where he sat and smooth out his tablet before starting
over. Nearly an hour passed before Michael got my attention with a tug on my sleeve.

We walked further in, to where some older children were industriously copying what
was on hardened tablets onto fresh ones. An adult would check their completed work before
calling for a servant – or possibly a slave, I realized – to load up the fresh tablets on wooden
racks and carry them outside for baking in the sun. After a while Michael decided I’d seen
enough and we moved on.

At the far end of the building a worker was unloading a rack of tablets he had just
brought in. Men in fancy robes were gathered here, picking up the tablets, looking them
over, and discussing what they’d just read. We stood quietly at the edge of the group,
eavesdropping on their conversation before it sank in what I was witnessing.

“Crop reports?” I asked Michael, repeating my question from a couple hours – and a
few centuries – before. “Where’s the magic?”

“All around you, lad,” he replied quietly as some of the men turned to look at us in
reaction to my obviously too-loud question. “Let’s go.”

With a nod and an apology to the men I now knew to be grain merchants, Michael led
me to the door through which the tablet bearer had come. We exited into an alley that ran
behind the building, where more servants where loading unbaked clay tablets onto a cart. As
we re-entered the square I started asking Michael about what was going on back in the
merchants’ school, but he told me to hold my questions until we were home. A few minutes
later we were back in the passageway below Michael’s home, dressed in the outfits we’d
been wearing before jumping around in time.
“Right, then,” Michael said, heading up the stairs. “Let’s have an early tea.”

In just a few minutes after our return I made myself useful by lighting a small fire against the afternoon sunlight coming in through the windows while Michael disappeared into the kitchen. I’d forgotten about the British custom of calling the afternoon meal “tea” until Michael mentioned it. I stopped what I was doing to think about that for a second. Having tea was a Victorian practice, yet according to what the muses had told me the tor had moved sideways from my world centuries before then. He must have picked up a bit of the local culture from visitors, or maybe from keeping an eye on the outside world. Regardless, I was feeling a “wee bit peckish” as they say in the real England. I finished with the fire just in time for my host to enter the great hall carrying a platter of cucumber sandwiches and a pitcher of ale. The muses joined us a few moments later and helped serve.

“That hit the spot. Thanks,” I said after we were done eating. “So. Where was the magic?”

Michael swirled the contents of his mug around a moment before answering. “A wise man once said that any sufficiently advanced technology is indistinguishable from magic.”

“Advanced technology? In Ur? The only technology I saw was the clay tablets… oh.” It hit me then. “Cuneiform. Writing. Duh.”

“Bingo.” Michael chuckled. “Plain as the nose on your face now, eh?”

“Yeah, I guess.” I subconsciously rubbed the aforementioned appendage. “I’m still lost, though. Other than the coolness of getting to visit the prophet Abraham’s grade school, what was the point of our Back to the Future adventure?”

“We’re talking about instructional technology, remember?”
“I’ll buy that for the second trip, but where was the IT in our first visit?” I asked in response. “Those guys memorizing crop reports sure weren’t using any technology that I saw.”

“Care for a little game? Loser fetches the next round,” Michael said.

I nodded. “Go ahead.”

“First, let us posit that what we saw in our initial visit was education at its most basic: one teacher, one student. Just like Aristotle and Alexander. Would you agree?”

“Sure, I’ve got no problem with that,” I said. “I think most teachers would love to shrink class sizes to their logical limit.”

“And you saw no technology?” Michael asked.

I thought it over a second. “Nope. They were just standing there talking,” I replied.

Calliope chuckled. “Oh foolish people, which have eyes, and see not; which have ears, and hear not.”

“From your amused tone of voice, coupled with the obscure biblical quote, I’m guessing that there was something going on that I missed.”

“Ian, what is technology?” Urania asked.

“The definition I give my students is that it’s a piece of equipment used to perform a particular activity. For example, using a hammer to drive nails.”

“Just a piece of equipment?” She raised an eyebrow. “Do you know how to swim?”

Her non sequitur question gave me a moment of panic. Oh geez, they’re going to toss you in the lake. “Ye-ah,” I answered cautiously.

“And what equipment do you use for swimming?”
“Regular swimming, like doing laps in the campus pool?” I asked in clarification.

Urania nodded. “None, I guess.”

“Then without equipment, how do you perform that activity?”

“I use the technique I learned from my swimming instructor at camp. I move my arms in a circular motion and kick my legs…” I paused a moment as it sank in. “You’re saying that a technique for doing something is also a form of technology, right?” They all nodded in response.

“What teaching methodology were they using in Ur on our first visit?” Michael asked.

“Memorization – rote learning.”

“So you agree they employed a methodology?”

“Yeah,” I said reluctantly, starting to see where this was going.

“And what is technology?” he asked, repeating Urania’s question.

“A piece of equipment – or a technique – used to perform a particular activity,” I said with a sigh. “And I’ll grant that a methodology is a technique.”

“And therefore, they were using technology,” Michael sat back with a grin. “I need a refill. Leading you to a conclusion is thirsty work.”

“You guys used logic on me. Hardly fair.” That raised a chuckle from them, as I fetched the pitcher from the sideboard.

“Horse to water, lad. So then, was what we saw in our second visit education as well?” Michael asked while I refilled everyone’s mug.

“Definitely. It didn’t look all that different to me than schools look today, other than the clay tablets instead of iMacs.” I finished my bartender duties and returned to my seat.
“As you’ve identified writing as a technology,” Michael said with a nod, “let’s take that a step farther. Do you believe that a technology can be value free?”

“Sure. It depends on what you do with it,” I replied.

“It depends, eh? Are you saying there could be a right way and a wrong way to use it?”

“Well, yeah,” I answered. “Take that hammer I mentioned earlier. The right way to use it would be to drive nails. Using it to pound in a screw would be wrong.”

“Aren’t right and wrong values?”

“Yes, but that’s not what I meant.” I decided to try another tack. “If a hammer is just sitting in a toolbox it has no value, right or wrong.”

Urania looked at me over the rim of her mug. “Is a hammer in a toolbox being used?”

“No,” I replied, feeling like I was being led into a corner again.

“So you’re saying a hammer only gains a right or wrong value in its use?” Michael asked.

I thought back over what I’d said, trying to avoid being checkmated a second time. “I suppose so, yeah.”

“And what is technology?” Urania asked, her smile no longer hidden behind the mug.

“You already asked that. Technology is a piece of equipment or a technique used to perform a particular activity,” I answered. “So?”

“So, is a hammer technology if you don’t use it?” asked Michael, joining Urania in smiling at me.
“Of course it is… ah, heck.” I shook my head in chagrin. “No, not by our definition. It’s just a stick with a piece of metal on one end. It only becomes a piece of technology when you use it.”

“And therefore, going back to our first point that a technology gains value in its use, can a technology ever be value free?” Michael asked before draining his mug.

“No,” I muttered.

“What’s that? Speak up, I didn’t catch that.”

“No, because if something is only classified as technology by being used, then a technology can’t be value free.”

“You play a good game lad, but it’s Olympians two, college professor zero.” He held out his mug. “Care for another round?”

“Yes.” I went back to the sideboard for the pitcher. “Despite the three to one odds. My ego can take it.”

“That’s the spirit. Never give up,” he chuckled. “Let’s get back to our two class visitations today. I’ll tell you that both of those schools were founded and funded by the grain merchants. Why do you think they did that?”

“If they’re merchants, then increasing profits would be the only reason I can think of.”

Michael nodded. “Did you see any problems inherent in the methodology employed in the first class?”

I stopped pouring for a moment while I thought about his question. “I know I said earlier that a one-to-one teacher-student ratio was optimal, but it does limit the number of students to the number of available teachers.”
“Did the introduction of literacy solve that problem?” Calliope asked.

“That seems obvious, therefore my answer is probably going to bite me in the tail,” I answered while filling my own mug. “Regardless, I’ll say yes. There were only a few teachers in the second class, and many more students.”

“Did this change what was learned by the students?”

“No and yes,” I hedged as I returned to my seat by the fire. “No, in that ultimately they were still going over crop reports. And yes, because the students had to learn reading and writing before they could move on to careers in agribusiness.”

“Then you’d agree that the introduction of this technology, literacy, into the classroom solved one problem but created another?” asked Calliope, a little too smugly for my tastes.

I hesitated then thought, what the heck, the penalties for wrong answers in this game were pretty mild. And the ale was going down nicely. “Yeah, I’d agree with that. Students had to learn to use one technology before they could employ it to learn about another.”

“And how do you think this affected the grain merchants?” Michael queried.

“Well, the second school was indoors, probably for privacy and protection from the weather – I’d imagine clay tablets aren’t so great in the rain – so there would be increased costs when compared to the open air school in the marketplace.” A thought hit me then. “However, I remember from my history classes that the introduction of written records led to a quantum increase in grain production. More grain meant the merchants could do more business and therefore make more profit, which would make the financial overhead of building maintenance worthwhile.”
“So regardless of how literacy improved teaching and learning, if it hadn’t benefited the merchants, would it have been part of the curriculum?” he continued.

“If they were the sole backers of the school, then I’d say no, it wouldn’t,” I answered.

Michael nodded and raised his mug in salute. “Very good, lad. One point to you.”

I returned his salute with a smile. Woo-hoo, there goes the skunk.

“Do you remember the story of Heracles and the hydra?” Calliope asked.

I thought back again to my undergrad lit classes. “I think so. He found out while he was fighting it that when he cut off its head two grew back in its place. Pretty soon he was faced with nine mouths trying to take a bite out of him.”

“So how did he defeat it?”

“You’re really making me wish I’d paid more attention in class,” I chuckled.

“Wasn’t the solution for his friend Iolas to cauterize each neck after Heracles cut off a head?”

Urania nodded. “Problem solving with technology can be like that. Solve one problem and two others spring up to take its place. However, you also need to keep in mind exactly whose problems are being solved. Why did Heracles perform twelve labors?”

“Something about making amends for killing his wife and children, right?” I replied.

“Correct. Hera, angry with Zeus for being unfaithful to her by siring Heracles on a mortal woman, drove Heracles insane. After Heracles came to his senses uncle Apollo, speaking through the oracle at Delphi, told him to perform twelve personal labors for his cousin Eurystheus to make reparations.”

“But if it was Hera who made him nuts in the first place, their deaths were really her fault. Why would Zeus allow…”
“Ahem!” Urania exclaimed, trying to catch my attention. All three immortals were looking a bit uncomfortable. “It would be best to not continue that thought.”

I was too caught up in the moment to heed her comment. “Wait a second. That’s why Zeus had Apollo give Heracles a way out, isn’t it? He couldn’t take direct action himself.”

Calliope reached over to place a hand on my arm. “Ian. Let’s let sleeping dogs lie, shall we?”

“Ix-nay on the era-Hay, lad,” Michael chimed in. “She has a long memory – and a short temper, as the story of Heracles attests.”

“It still didn’t bring back his family,” I protested before finally giving in to their advice.

Michael leaned over to whisper, “Heracles’ family is in paradise now. What we call the Elysium Fields. No worries.”

I shook my head. “You people have the most interesting family stories. Thanksgiving dinner must be a hoot.”

“Yes, well, that’s true.” Michael sat back. “I believe the topic at hand was the question of determining whose problems are being solved with technology.”

I took a sip of ale and thought for a moment. “It sounds like what you’re trying to tell me with the hydra story is that Eurystheus used Heracles as a tool to solve his own problems – slaying monsters, cleaning barns, etc. Heracles used the labors as a way to gain redemption.”

Michael nodded. “So how do you think that relates to our visits to Ur this morning?”
“Well, the merchants used teaching groups of children how to read and write as a way to solve the problems with one-on-one memorization.” I thought for a second. “This increased their profits, like I said before, but that implies increased trade. And I can think of lots of changes that brought about. The city was much larger the second time we were there, so population and wealth as a whole had increased. Ultimately, though, the merchants were the motive force. Everyone else was being acted on.”

“Very good, lad,” Michael said. “I believe you’ve put a bit of light on the subject, so to speak.”

“This all makes sense,” I replied, “but what about the altruist benefits of teaching reading and writing, whether they were intentional or not? Like teaching good citizenship, or how literacy benefited their society? For example, didn’t the Code of Hammurabi, the first written set of laws, manage to survive because of literacy?”

“Good questions, lad, good questions indeed.” Michael glanced at the window, where the last of the sun was disappearing over the horizon. “Let’s leave the social ramifications of technology for another day, though. Right now, my belly tells me it’s time for dinner.”

I followed his gaze. “Dinner? But, we just ate. And besides, I was enjoying our conversation.”

“That was tea, lad.” Michael chuckled as he got to his feet. “Everything in its time. Remember, when standing, stand, and when sitting, sit. Above all, don’t wobble.”

“And when hungry, eat?” I asked.

“Nothing else for it,” he replied with a laugh, rubbing his belly for emphasis.
Michael waved off our offers of help with thanks and proceeded to prepare our meal, giving me a chance to get a closer look at his book collection. *The True and Compleat History of Atlantis?* I really need to get a lending card for his library. We spent the rest of the evening talking about literature before I was shown to my room. I fell asleep as soon as my head hit the pillow.


The definition of technology I learned as an undergrad was the first one given by Ian, the use of a tool to perform an activity. I am arguing here that the act of using a technique or procedure to perform an activity is a form of technology as well.

The slaying of the Hydra was one of the labors of Heracles that he was denied credit for. In Grant, p 94.
In the morning I awoke to the smell of frying bacon and... could it be? Oh yeah, it was – coffee! I followed my nose to the kitchen and found Michael busily making breakfast. I made a beeline for the coffee pot.

“Morning, lad,” he said with a nod. “Good thing I keep the entrance to the catacombs locked.”

“Huh?” My brain was completely occupied with the goal of scoring some caffeine, so Michael’s comment didn’t compute. “Lock the catacombs? Why?”

“Because you snore loudly enough to raise the dead,” was his rejoinder.

“Oh,” I sheepishly replied. “Sorry.”

He chuckled as he filled a plate with bacon and eggs. “No worries, lad. You should hear uncle Atlas.¹ His snores literally make the ground shake.”

“Atlas, as in the titan that holds the sky on his back?” I asked as Michael handed me the plate.

Michael nodded as he proceeded to load up another plate. “That’s the fellow. Legend has it that he was sentenced to hold up the heavens as punishment for leading the revolt against Olympus.² Just between you and me, I think Zeus exiled him to northern Africa because nobody could get any rest once he got going. Just like a foghorn, all night long. But don’t worry; I’m sure nobody in the village heard you.” He gave me an amused look. “Well, pretty sure. If the wind was in the right direction.”

“Gee, thanks. I guess. So, where are the sisters? I hope my snoring didn’t keep them awake.”
“No worries. They rose an hour ago and went to the village to assist our midwife with a birth.”

That was a side of them I hadn’t considered. Wow. I shook my head in amazement.

“That’s pretty cool. What’s on our agenda for today then? Another field trip?”

“Got it in one, lad. Good for you,” Michael replied as we sat down.

“Where to? Another mess o’ Mesopotamia?”

He paused in loading a large bite of bacon and eggs onto a piece of toast. “Let’s leave it a surprise, eh? More fun that way.”

“More fun?” I paused with my cup halfway to my mouth. “Do you immortals have a contest going? You know, something along the lines of ‘who can get Ian’s jaw to drop the farthest?’”

Michael looked thoughtful as he chewed. “That’s a good idea. How am I doing?”

“Your magic door’s not bad, but you’ve got a ways to go to beat the flying horses.”

“I’ll work on that. Eat up,” he said with wave of his fork at my plate, “and we’ll get to it.”

We finished eating, and after helping Michael wash up we went back to the passage below the church. Seeing unfamiliar surroundings on the other side didn’t catch me by surprise this time. When the light cleared I realized that yet again we were in an alley. My coolness in the face of sudden change only lasted to the alley’s mouth, however. Instead of the stone buildings of Ur, I found myself surrounded by high-peaked timber-framed buildings covered in gingerbread trim. With the snow-capped mountains rising behind them it looked like an ad for a chocolate factory. It was certainly a far cry from Mesopotamia.

“Bavaria?” I guessed. “Or maybe Switzerland?”
“Close, lad. We’re next to Germany. Strasbourg, to be specific.” Michael began walking along the street, and I quickly fell in beside him. As before, our clothing had changed to match that of the locals, and I could comprehend the snippets of conversation I heard from passersby.

“What’s the date? Looking at the architecture and the clothes, it’s got to be sometime in the middle ages.”

“About the middle of the fifteenth century, give or take a year. And here we are then.” We stopped in front of a wine shop, where Michael opened the door and waved me in.

“Isn’t it a little early in the day?” I asked as I looked around inside.

“Not for this day and age,” Michael replied. “Even in your time it’s safer to drink wine than water in most places in the world.³ Remember where the man in Ur was disposing of his garbage? Yuck. Improving people’s sanitation habits is one area in which Urania hasn’t had much success. But that’s not why we’re here.”

A tow-headed boy who looked about ten years old came out of the back, his arms full with a wooden box. Michael caught his attention. “We wish to speak with your master, child.”

“Are you from the church?” the boy asked. “It will be another week before the work is completed.”

“Just tell Herr Gensfleisch that we are here to see the press; that’s a good lad,” Michael replied. The boy bowed and left the way he came.

“A wine press has something to do with instructional technology?” I asked. “That’s a new one on me.”

Michael chuckled. “Ah, but that’s the point, innit?”
The boy returned in a moment. “This way, sirs.” We followed him down a narrow hallway that opened into a large, high-ceilinged room. Wine casks lined the walls, and a tall man wearing a stained leather apron standing next to a large canvas covered machine was wiping his hands on a towel. I almost chuckled when I saw the length of his beard. The guys in ZZ Top have got nothing on him. I bet he could tuck that monster into his belt.

“If you are looking for Herr Gensfleisch, I am he,” the tall man said, his eyes narrowed somewhat. “How may I help you?”

“Thank you for allowing this interruption,” Michael said as he offered a handshake. “I am Herr Santangelus, a teacher of the natural philosophies, and this is Ian, one of my students. I have heard of your invention and, with your permission, we would appreciate the opportunity to see your press.”

Santangelus? Oh, two of his roles: St. Michael and Michael the angel. Got it. The cautious look on Gensfleisch’s face was replaced with one of enthusiasm as they shook hands. “It would be an honor to discuss my work with two searchers after knowledge.” He turned to the covered machine and began pulling at the twine securing the canvas. “Your timing is perfect, by the way. Just the other night I had the strangest dream about my work.”

“For months I have struggled with blotches and smearing after only a few runs,” he continued while untying the knots, “making the results almost illegible and the priests most unhappy. But in my dream, a woman wearing a crown of stars told me to try alloying a small measure of antimony with the lead and tin.”

A mysterious woman offering scientific advice in a dream? Gee, I wonder who that could be, I thought sarcastically. It appears Urania has lent him a hand.
With a final tug the canvas came free, revealing not a machine for pressing juice out of grapes but one designed to press paper onto inked blocks of type. Score one for you Mike, that’s a good jaw-dropper.

Wait a minute. Mid-fifteenth century Germany? “Excuse me, sir,” I began as Michael chuckled, “but do you also go by the name Gutenberg?”

“Johannes Gensfleisch zur Laden zum Gutenberg, yes,” he replied.

“And how did the new alloy work for you?” Michael asked, ignoring my look of amazement.

“It is wunderbar!” Gensfleisch exclaimed. “Just look at these results. This is after the first run,” he said, snatching up a printed sheet from the bottom of a stack of vellum, “and this is after forty,” grabbing one from the top of the pile. “There is no difference.”

Michael nodded in agreement as he examined the proffered pages. “I see what you mean. Congratulations on your success.”

“So Herr, um, Gensfleisch, what’s next for you?” I suspected that I already knew the answer.

“Paying my creditors, for one,” he replied, a smile barely visible behind a forest of facial hair. “That is who I was afraid you were when my apprentice told me you were here, you see. Before discovering that my first alloyed type became dull so quickly, I rather prematurely signed a contract with the church to print indulgences. I used that contract to secure a loan to build this large press, and I am somewhat in arrears.”

“Now, however,” he waved at the press, “all will be well. I can complete the church’s contract and begin working toward my real goal.” Gensfleisch looked around then
leaned toward us. “It is my plan to print a certain – book,” he whispered before standing up straight and crossing his arms. “That is all I will say for now.”

“Again, congratulations, mein herr.” Michael held out his hand once more. “Good luck to you. And thank you for your time.”

“It was a privilege meeting you, sir.” I said as I shook hands with Gensfleisch, adding, “I am certain your project will result in a… good book.”

A light rain greeted us when we stepped back out on the street. Michael gave me a gentle – for him at least – nudge in the ribs. “A good book?” he chuckled. “Couldn’t resist, could you lad? Ah well, no harm done. Let’s get out of this rain before we, well, you, catch your death.”

He led the way up the street, and a few minutes later we were sitting at a table in a small public house. There he purchased a bottle of white wine, a block of sharp cheese, and a loaf of marbled bread from the proprietor. Michael attacked the bread and cheese with a knife while I opened the wine. As I poured, a thought bubbled up from our visit.

“Mike, Gutenberg didn’t look too happy to see us at first, but then he brightened right up. What did you do, work a little magical whammy on him?”

“Not at all. If you recall, I simply identified us as fellow students of natural philosophy.”

“Natural philosophy? I don’t get it.”

“It is the term used for the area of study people in your time call science and technology. The word science won’t show up in common usage until the nineteenth century.”
“Ah. That’s pretty cool. I should have a sign made for my office.” I spread my hands in the air as if I were framing a sign. “Dr. Ian Hlaford, Natural Philosopher.”

“It does have a certain ring,” he agreed with a chuckle.

Another thought came to me about then. “I think I see a pattern developing in our visits,” I mused aloud.

“Do you now?” He gave me the raised eyebrow. “Care to resume our wager? By my count it’s still in my favor, two to one.”

“Sure, why not?” At his nod I went on. “Well, we’ve been talking about how technology impacts education, right?”

“As the locals would say, das ist korrekt. And?”

“And, yesterday in Ur we saw the effect of literacy on education. I’m pretty sure that this morning’s visit is leading up to a discussion of how the mass production of books affected education.” I sat back with a smug feeling.

After a moment Michael snorted. “That’s all? No point for you, lad. It doesn’t take much imagination at all to understand how printing brought literacy to the masses, thereby spreading knowledge and ideas hither and yon. That one was rather obvious.” He took some of the sliced bread and cheese and I followed suit. “However, you started this topic, so let’s drag it out into the light for a good look. Just like our discussion of Ur, let’s first follow the money. Despite our friend Johannes’ mention of his creditors, who is really financing his little invention?”

“He said the church was paying him to print indulgences.”

“And then what?”

“And then what? Everybody knows about his bibles.”
“Ah, *sic transit gloria mundi,*” Michael said with a smile.

I dredged up memories of my undergrad Latin courses. “*Thus passeth the glory of the world?* I don’t get it.”

“You’re right about everybody remembering his bibles. What isn’t so well known is that he first printed a Latin to German textbook.”

“Which would allow more people to read the Bible.” I noticed the bartender looking over in our direction when I said the B-word, so I lowered my voice. “But isn’t reading the – good book – limited to priests and scholars now?”

Michael cocked his head to one side. “Do you know what an indulgence is?”

“I’ve heard the term… isn’t it a written forgiveness of sins?”

“Oh, they are so much more, lad. They’re all about contrition to gain forgiveness. And yet again, money.”

“Money?”

Michael nodded. “Contrition is a form of temporal punishment for your sins,” he explained. “You confess your sins to a priest, and he tells you to do an act of contrition as a condition of forgiveness. In other words, you are ordered to do a good deed to make up for your sin. But what if you paid someone to do your act of contrition for you? Would that still be a good deed?”

I shrugged. “I guess so. I mean, you work for your money, and the good deed would still get done, so, sure.”

“And, at least based on their job description, nobody does more good deeds than priests, far more than they need for their own forgiveness,” Michael continued. “By this line of thinking the church is so wealthy with good deeds that they can afford to sell some.
Indulgences were invented as certification that the bearer had purchased an act of contrition from the church.”

“Okay, I see the logic there.”

“Then set that aside for a moment.” Michael folded a piece of cheese into a slice of bread. “Do you know the difference between money coined out of gold or silver, and paper money?”

“Um, gold and silver is heavier in your pocket?”

Michael chuckled while chewing on his cheese sandwich. “That is one difference, but the real difference is that a gold coin, for example, has an intrinsic value separate from the denomination stamped on its face. You could melt it down and sell the gold. Paper money, on the other hand, is a promise of value, backed by whoever issues it. A twenty-dollar bill from your country used to mean that there was twenty dollars worth of gold available to back up the promise. The paper itself is relatively worthless.”

“So that’s why they have ‘This note is legal tender for all debts, public and private’ on our money.” I felt for my wallet to get out a twenty to look at before remembering that my wallet was wherever, and whenever, all my other belongings were. I turned my attention back to what Michael was saying.

“More than that, the amount of gold coins in circulation is directly dependent upon the amount of gold that has been mined and smelted. The more coins in circulation, the larger the economy.”

“What if you mix gold with a less valuable metal, like silver? Wouldn’t that let you circulate more money?” I asked.
“That’s called debasing the currency, and it’s been done many times. In general, the practice is frowned upon because the money loses value: a five dollar gold coin is no longer intrinsically worth five dollars of gold.”

I washed a bite of cheese down with a sip of wine and tried unsuccessfully to play connect-the-dots in my head. “So what does this have to do with indulgences? And reading the good book? And instructional technology?”

“Wait for it,” Michael said around another bite of sandwich. “Up until this point in time indulgences have been written out by hand, and often are decorated with jolly bits of illustration. This limits the number of indulgences sold by the church, although some unscrupulous priests have sold indulgences that are nothing more than quickly scribbled receipts for money paid. Regardless, the necessity of writing them out by hand also limits how much money the church receives for selling them. But here’s the trick, lad: what if you could print indulgences in bulk?”

The little light in my head finally went on. “You’d be able to sell them by the bushel. No wonder the church contracted with Gutenberg. They stand to make a fortune.”

“Exactly,” Michael nodded in agreement. “An indulgence is just like paper money, lad. Its value lies in its promise, not in the value of the paper. And what are indulgences a promise of?”

“Good deeds,” I answered, just as the follow-up thought hit me. “The priests better get busy helping old ladies across the street, if Gutenberg was able to run off a stack of them just this morning.”

“And if the church doesn’t keep up with the number of indulgences sold?”

“Then they wouldn’t be worth,” I smiled, “the paper they’re printed on.”
“Right as rain. Now, as promised, here’s the ironic bit. The church wants to make some quick folding cash to pay for their various projects, so they make arrangements with Gutenberg to print indulgences. This one act allows him to finish his invention, and leads to a number of consequences. First, there is the criticism that indulgences could be without value. We’ve already discussed this bit. Second, our friend Johannes takes the profit from performing this service for them to work on his own projects. He won’t be alone in doing his own printing; there is no patent law at this point in time, so a number of people will copy his invention and print their own – good book,” Michael finger-quoted. “Interestingly, some of these will be in languages other than Latin. And as you mentioned, this will have the direct result of increasing the number of people who actually read and study the – good book – rather than simply accept the church’s interpretation of its contents.” Michael paused a moment. “Ever hear of the Reformation?”

And another sideways jump, I thought. “Um, yeah. It’s when the Protestants broke off from the church in Rome.”

“That’s a concise way of putting it, but it’s correct. Do you see the irony yet?”

I thought for second then chuckled when it hit me. “I do now. The church shot themselves in their metaphorical foot. In order to make a quick buck, they financed the technology that dealt the greatest blow to their authority in centuries. Oopsies.”

“Oopsies, indeed.” Michael said with a grin as he refilled our glasses. “Point to you, lad.”

“Thanks,” I said, returning his smile. “So, the application of technology to solve the problem of how to sell more indulgences led to a rebellion within the church. They should have thought about the consequences.”
“They did, as far as they could,” Michael replied. “The spread of ideas because of books was like opening Pandora’s box, lad.\textsuperscript{14} When only one or two copies of a book existed, the church could control, suppress, or even destroy them. Movable type changed all that by allowing the ideas to escape and run free.”

“You make it sound like a bad thing.”

“Not at all,” Michael said with a shake of his bald head. “Think of it like a vaccine. A small dose of a virus enables the body to develop resistance to a large dose and avoid serious illness. Through books people get exposed to all sorts of ideas, rejecting some and accepting others.” Before I could reply he spread his hands. “But remember, it’s just an analogy. It can only go so far.”

“Sure,” I agreed. I thought for a moment while grabbing the last of the bread and cheese. “But I still think how books changed education is important.”

“Didn’t say it wasn’t important; just obvious,” Michael said with a chuckle.

Fine, so I’m obvious, I thought as I chewed my sandwich. We finished our lunch and soon were again getting soaked on our way back to our alley and the traveling door. A quick step across the threshold and we stood beneath a sunny sky.

“Toto, I don’t think we’re in Germany anymore,” I quipped as I looked around. We had walked around a corner and now stood across the street from a large industrial looking building. To my slight surprise we were wearing fedoras and pin striped suits.

“Too true,” Michael replied. “Welcome to the Ford Motor Company’s Model T assembly plant in Highland Park, Michigan.\textsuperscript{15}”

“Model T’s?” I asked in confusion, taking another look at our clothes. “What year is it? And what does a car factory have to do with instructional technology?”
“1913,” Michael said while returning a passerby’s wave as we crossed the street. “And not to give anything away, but that’s what you’re here to see.”

He led the way inside the building and along a hallway on the main floor, and walked past various assembly rooms until we reached one with a high ceiling. We entered the room and kept near the wall, well out of the way of the workers and partially built cars, until we climbed up a set of metal stairs onto a handrail-lined platform. From here we had a clear view of the entire area.

Looking down, I could see dozens of cars in various stages of assembly sitting on a winding track. As we watched, I heard a bell ring. A few seconds later the cars shook as the chains connecting them to the track went into motion. After the cars traveled about six or seven meters along the track, the movement stopped. Men in coveralls began taking parts from nearby bins and attaching them to the cars. A few minutes later the bell rang again, prompting the workers to step away from the machines and the process repeated itself.

“Lad, what do you think is more efficient?” Michael asked. “Building cars one at a time or building them many at a time?”

“Many at a time, obviously,” I replied.

“That’s what he thought as well,” Michael said.

“He? He who?” Good English me speak, I thought with a chuckle.

“He,” Michael replied as he pointed a thick finger across the plant floor to where a slender, gray-haired man in a suit much like ours stood overseeing the assembly line. “Henry Ford.”
“That’s the great man himself, eh? Cool,” I commented as I saw the gentleman in question jot something down on a clipboard. “I guess I knew that he came up with the assembly line.”

“Actually, there are those who say he got the idea from some of his employees. Regardless of who invented the concept, he is the one who put the systematic assembly of cars into practice. Ford and his engineers constantly evaluated all aspects of production from raw materials to distribution, tweaking and improving the process.” Michael turned to me. “Speaking of his employees, how do you think the people on the assembly line feel about working for him?”

“I don’t know about them, but I’d get bored to tears attaching nut ‘A’ to bolt ‘B’ all day long.”

“And they did. Would doubling your pay relieve your feelings of ennui?”

I shrugged. “More money would help, sure. Is that what happened?”

“Yes, accompanied by shortening the work day from nine hours to eight. In the mid-1920’s Ford even went from six to five-day work weeks, creating what you think of as the modern weekend.”

“Was this in response to union complaints, or some sort of altruism?” I asked.

“Unions? Not bloody likely. Mr. Ford won’t allow unions in his plants for another thirty years from now.”

“But he obviously cared about the workers if he increased pay and shortened hours.”

“Obviously? Workers are part of the production process to him lad, cogs in the machine as it were. And he wasn’t about to allow outsiders to fiddle with his machines’ bits.” Michael pointed to a group of men in suits approaching Ford. “See that bunch?”
“Yeah,” I replied. “They remind me of the security agents I ran into at the airport.”

Michael cocked an eyebrow at me. “You don’t say? Well, those fellows are part of Mr. Ford’s Sociological Department to improve worker output and efficiency, ‘people engineers’ you could call them. You can thank them for the increased salaries and other changes in working conditions. They evaluated and twiddled and tweaked employee productivity every way they could think of – even going so far as to link employee behavior outside of work to their continued employment.\textsuperscript{18}”

“Sounds like the morals clause in most teaching contracts,” I commented while looking again at the workers on the line and Ford with his clipboard.

“And do you think that is a coincidence?”

“Let me guess – no?”

In response Michael just smiled and pointed back at the activity on the shop floor.

“Did you know that Mr. Ford once said that his customers could have a car in any color they wanted, as long as it was black?”

“Did he? He must have been an early goth.” Michael chuckled as he shook his head.

“Okay, okay. I suppose it’s because he thought black cars looked better?”

“That’s not it, either. Ford’s company had been making Model T’s for five years before opening this plant. All hand-built, and available in other colors besides black.” He waved an arm at the assembly line. “No, the real reason is that his engineers, through tests, determined that black paint dried faster than other colors. Variety was sacrificed in the name of efficiency.”

“Hand-built cars? That couldn’t have been easy. How many Model T’s did he make in those first five years?”
“About eight thousand. Compare that to the nearly fifteen million he’ll make here and at other plants in the next fourteen years.”

“That’s over a million cars a year,” I said in amazement. “Wow. Just from moving cars along a track.”

“It’s more than that, ya daft git,” Michael laughed. “Time for what you’d call a pop quiz. Is mass production a technology?”

“It’s a technique used to perform an activity, so yes,” I replied with a chuckle of my own. “I’m pretty sure I’ve got that definition memorized, by the way.”

“So you say. What problem did it solve?”

“It increased the production of cars by three orders of magnitude. And not just cars,” I added, “but all sorts of manufactured items as well.”

“And why was that?”

I looked again at the workers on the line. “From specializing the work done by each person?”

“You’re getting warmer. Think back to this morning. What kept the church from producing thousands of indulgences each year?”

“Writing each one out by hand took time. It wasn’t very efficient. That’s why they went to Gutenberg.” I turned to Michael. “That’s it, isn’t it? Mass production works because it’s more efficient.”

“That’s the magic word, sure enough. What do you know about the Efficiency Movement?”

“They were a group interested in moving efficiently?”

Michael broke out laughing. “There’s a reason you live on your own, isn’t there?”
“What do you mean?” I asked guardedly.

“With a sense of humor as bad as yours, what woman would – whoops, that’s done for it.” He cocked his head toward the assembly floor. “Out we go, lad. Ford’s security team is headed our way.”

A quick glance confirmed his statement and I followed Michael as he bounded down the stairs. We jogged through the plant back along the path we had followed earlier, ignoring the shouted orders to stop we heard coming from behind us. I started to get a stitch in my side from trying not to laugh while we ran, because I swear I heard Michael whistling the Benny Hill chase theme as he dodged around corners.

As I weaved through the traffic on the street Michael had our door open and waved me past. I ran through the doorway and out onto a gravel-covered path on the other side before stopping to catch my breath and look back. What I saw finally got me to laughing; which I really can’t recommend doing while winded.

“An… outhouse?” I got out past my spasms of amusement. “You… brought us… through an outdoor… toilet?”

“It did seem expedient,” Michael grinned over his shoulder as he shut the door in the face of the approaching security team. When he stepped away the situation meter went from amusing to hilarious.

“Oh, man… Michael, turn around… you need to…” I gave up and simply pointed past him at the door.

He looked and let out a chuckle of his own.

“Why did you…?” I paused to wipe away a tear. “What made you choose a ladies room?”
“Best laid plans, lad.” He hooked a thumb at a second small structure with an outline of a man wearing a top hat on the door a few meters away from the one we had recently exited. “Must be someone in the gents.” He started along the trail away from the latrines, and a moment later I followed.

Now that the cramp in my side was going away my normal curiosity took its place. “Where are we now?” I started to ask for what felt like the dozenth time. I stopped abruptly as the answer hit me. Ahead of us at the end the path was a three-story brick structure surrounded by towering oak trees. Near it was a smaller one-story rectangular building, sided with clapboards painted white, that had rows of double-hung windows that reached nearly to the eaves along the longer sides. “Sister Mary Joseph,” I muttered under my breath, looking around at the neighborhood then back to the buildings at the end of the gravel.

Michael had taken us to my old grade school.

He turned and raised an eyebrow. “Yes, Ian?”

That is a cat just ate the canary look if I’ve ever seen one. I crossed my arms and tried to look nonchalant. “No points for originality,” I replied.

Michael frowned. “How’s that?”

“Dickens did this to Scrooge, you know.” I nodded toward the brick building. “I suppose if I looked in one of those windows I’d see myself studying?”

“Not bloody likely, unless you’re much older than you look,” he said with a grin.

“Huh?” I took a second look at the school, and felt my smugness evaporate. “Ah, heck. That building’s brand new, isn’t it? That means we’re still in the distant past.”

“Not so very distant as I reckon things,” Michael commented, “but yes, we’re still in the past. Still wandering through 1913, as a matter of fact.”
As I looked more closely I felt really stupid. While it was my old school, I’d completely missed the fact that there was no gymnasium tacked on to the back, the cafeteria and library wing was missing, and where the heck was the playground? I turned in a circle as I got my bearings. If the school is over there, then the playground should be back… “Oh, man! That is so wrong!”

“What’s wrong, lad?”

“Our swing set was right where the outhouses are now,” I said, pointing in their direction. “That can’t be good.”

Michael pushed his hat back to run a hand across his forehead and grinned. “Well, I can see where it would explain your sense of humor.”

“What’s that supposed to mean?” I shot back.

The sound of the men’s outhouse door swinging open interrupted our little discussion. A teenaged boy stepped out and walked toward us on the path. “The sheriff will run you in if he catches you loitering on public property,” he said to us as he passed. We both stood dumbly and watched as the boy walked up to the white building and went in.

I turned back to Michael, who was still looking in the direction the boy had gone. “Um, where were we? Something about an efficiency movement?”

“Efficiency movement. Right.” Michael took a deep breath. “Let’s uh, let’s take a look over here, shall we?”

We walked up to the building the boy had entered and peered in through the windows. Inside I could see a number of boys working with a variety of industrial tools. The children appeared to range in age from early to mid-adolescence. Occupying their
attention was metal working equipment like drill presses and lathes, along with carpenter tools such as band and table saws.

“Any guesses as to what’s going on in there?” Michael asked after a minute.

“Looks like shop class to me,” I replied. “I took it myself, although we were co-ed in my day.”

“What you’re seeing is much like your shop class, with one important difference: this is the only subject in the curriculum for these lads.”

I took another look around the room. “That’s it? No literature, algebra, or social studies? I had some friends back in high school who would’ve loved that.”

“In your time that would have been their choice to make. These children had no choice.” Michael tapped me on the shoulder. “Come along, lad. Let’s find somewhere else to talk before we are accused of – loitering,” he added with a chuckle.

Michael and I walked out to the sidewalk then turned north toward downtown.

“What does all-day shop class have to do with your efficiency movement?” I asked.

“To answer your first question, we need to go back a few years – in a figurative sense – to the end of the last century,” Michael replied. “The last half of the nineteenth century was a time of nearly exponential change in your country. A person could now quickly travel by rail from one coast to the other; industry was expanding rapidly; the telegraph and the telephone allowed instantaneous communication; electric lights began to illuminate city streets and people’s homes; and all of these changes and innovations were possible because of science and technology. Various captains of industry, such as Mr. Ford, looked at what technology had wrought and were proud of it. And what they saw as standing in the way of continued progress was waste and inefficiency.”
“Waste and inefficiency where?” I asked.

“Everywhere they looked, in all parts of society. From business to government to…”

Michael looked back over his shoulder and I followed suit.

“Education,” I finished for him.20

“Right as rain,” he nodded.

“What did they see as wasteful in education?” I thought back to my time as a high-school teacher. “Let me guess: they probably decided it was wasteful to pay teachers a livable wage.”

“That holds true for any group in any time that has control of education’s purse strings. No, they thought it was wasteful to give every student the same education.”

Thoughts of our discussion were driven aside by my rubber necking as we entered the few blocks that comprised the business district. “This place has really changed,” I commented as I looked around for someplace to get a cup of coffee. “Or will really change. Whatever. This past tense thing is rough when you’re actually in the past.” Then I spotted a sign. “Here we go, down by the railroad station. The Snelson Café.”

“You sound like you know the place. Engaging in a bit of future nostalgia?” Michael asked as we headed for the café.

“Not really,” I answered. “This whole part of town is scrub trees and farm fields by the time I was – will be – born. When the coal industry in Iowa dies out – will die – ah, heck.”

Michel chuckled at my difficulties with the timeline. “Please, do go on.”

“It’s simple, okay?” I waved an arm around to take in our surroundings. “Besides farm-related work, the main industry around here right now is coal mining. Anthracite coal.
Really dirty stuff, full of sulfur. By World War II that industry was dying, and the town with it. When I was a kid all that was left was the school, the VFW and Mason’s halls, and a few hundred people. My friends’ parents were either farmers or had jobs in the city. But at any rate, thank you.”

We had reached the door of the café and Michael paused with his hand on the knob.

“For what?”

“For bringing me here. I’ve only seen faded black and white photos of when this town was alive. Photos are all that’s left of this part of town, for that matter. So, thanks.”

“Just a part of the service.” We went in and a few minutes later were seated with our coffees near the front window.

I took a sip while looking out the window at a Model T slowly putt-putting down Main Street past a horse-drawn wagon tied up in front of the general store across the way. This visual reminder pulled me back on task. “Okay, so these efficiency types felt that it was wasteful to give every student the same education. What sort of education did that consist of?”

“For the most part a well-rounded liberal arts curriculum. Grammar, arithmetic, literature, classical languages like Latin, to name a few subjects.”

“And they saw that as wasteful? I think children are entitled to an education. It’s one of society’s responsibilities.”

“On that, they would agree with you.” Michael sipped his own coffee. “You must remember, the adherents of the efficiency movement considered themselves enlightened practitioners of science, seeking objective solutions to every problem.”

“And what was the problem with education?”
“One of how best to provide an education that will prepare students for their roles in society.”

I was puzzled for a moment. “By sending the boys off to permanent shop class? What roles would that prepare… Oh. My. Gosh.” The little light in my head went on so brightly that it nearly burned itself out. “They turned school into a training program for the factories, like Ford’s.”

“For many students, yes,” Michael replied calmly.

“But Mike, they took away any chance those boys had of building a better life.”

“They didn’t see it that way. In their minds, children from poor or working class families would never be able to afford a higher education,” Michael explained. “They justified their actions by arguing that providing an academic education to a child who could never attend college was cruel. It left that child unprepared for, and potentially dissatisfied with, the reality of his or her future as a laborer. What was best and most efficient for those children without an academic future was a vocational curriculum. They were deliberately trying to give those boys a better life.”

I shook my head. “It still seems elitist to me – and wrong. Choosing a child’s future for them based solely on their socioeconomic status.”

“Oh, my lad,” said Michael. “You are such a product of the late twentieth century.”

Mrs. Snelson chose that moment to come out of the kitchen with a tray of homemade cookies. “Did I hear you say the twentieth century is late? It certainly will be,” she said with a bright lilt. You could still hear the old country in her voice. “That train doesn’t come west of Chicago.”

“Excuse me?” I asked in confusion. “What train?”
“The 20th Century Limited. If you’re waiting for it here you’re out of luck. It only runs between New York and Chicago. You can, however, get from here to Chicago by way of Des Moines. Talk to my man William at the station; he’ll help you out.” She smiled and held out the tray. “Cookie?”

We accepted the proffered cookies with thanks. When she left I mentioned quietly to Michael, “There’s something that’s the same in my day.”

“What’s that?”

“The Midwestern attitude toward strangers,” I softly replied with a nod toward Mrs. Snelson in the kitchen. “Everybody’s just part of the family – which makes your business their business.”

“America’s heartland,” Michael said in agreement.

“I wonder how she’d react if I told her that I went to school with her great-granddaughter?” I mused aloud before biting into my snack.

“She’d probably think you were a bit touched in the head,” Michael said with a grin.

“Mike, I’m a college professor from the twenty-first century. I’m having coffee and cookies with a supernatural being. In 1913.” I gave him an amused look. “She’s probably right.”

“So,” I continued smugly, as he nearly failed in the effort not to burst out in a roar of laughter and spray cookie crumbs across Mrs. Snelson’s clean floor, “they saw a need to give a vocational education to children of the poor. I’m assuming the traditional curriculum was still there for the other children?” Michael nodded as he swallowed. “Was that the extent of their reform effort?”
“Not really,” he explained. “A secondary problem arose from the first: what was the most efficient mechanism for sorting out which educational track was appropriate for each child? For the children from the lower economic classes the sorting was automatic; they went on the vocational-industrial track. And it was automatic for another group of children as well.”

“What other children?”

“Those children who weren’t considered intellectually capable of comprehending a classical curriculum.”

“You mean special needs students?” I asked in confusion.

“They – and any child where it was decided that it would be a waste of time to even try to educate them beyond the basics. Such as, say, the children of immigrant families.”

“Son of a… that just reinforces my elitist comment from before. Where did they get off putting their own needs above those of the children?” I was so busy getting angry with social reformers who were in the grave long before I was born that I wasn’t ready for what Michael said next.

“Really? The attitude should sound familiar to you,” Michael said with an icy tone to his voice. “Wasn’t it you who said, ‘Why should I waste my time on students who don’t show up for class? It’s not my job to hold their little hands.’ It was just the other day; surely you haven’t forgotten?”

Ah, hell. At that moment I desperately wished for a rock to hide me away from the look on Michael’s face. “Frank. And Karen.” The taste of the cookie I’d just eaten turned sour in my mouth as my little fantasy about Frank flipping burgers returned unbidden to my mind. “I’ve been a jerk. And a jackhole, whatever that is. God, I’m so sorry.”
“Don’t tell me, lad. Tell them when you return.”

“Yeah. Definitely.” I took a deep breath and tried not to be sick. No wonder the muses have been treating me like a fool – I’ve been one.

Michael sipped his coffee while I mentally rained incriminations on myself. After a couple minutes he said, “Right, that’s enough. Let’s get back to it.”

“Sure.” I tried to rinse the taste out of my mouth before continuing. “Okay, you said that was the secondary problem. Was there another?”

“Indeed there was. For children not in those two groups, teachers familiar with the child performed the sorting on an individual basis. The reformers weren’t satisfied with this procedure.”

“I don’t understand. If the reformers’ problem was that teachers were doing the sorting, what’s wrong with that? I mean, other than parents, who knows,” or should know, I thought bitterly, “a student better than his or her teacher?”

“It wasn’t a satisfactory situation to them because it involved a subjective decision on the part of the teacher. Being subjective meant that it wasn’t scientific.”

“So what solution did they come up with?”

“What do you think?” Michael tossed back at me.

I shrugged, a part of my mind still thinking about Frank and Karen.

“Look, lad, how did Ford deal with problems in his factory? For all I know, how did he and his friends decide which leg to put in a pair of trousers first?”

His bit of humor refocused my attention. “Duh. They applied technology, of course.”
“That’s right,” Michael agreed. “In a few years from now the Stanford-Binet IQ test will be developed. This will give them an objective method to predict the potential of a child, and its adoption into education is widespread in the 1920s.”

“Wow. One test to determine your whole life.” I thought about that for a minute and shuddered. “That explains why they thought the children of immigrants weren’t capable of learning. Those tests have an underlying bias towards literacy. If you aren’t proficient in English, you naturally wouldn’t score well.”

“Which doesn’t necessarily reflect an elitist attitude,” Michael commented. “It’s just something they didn’t factor into their equations. As I’ve said, they believed in the power of science and technology to solve the problems of society. Applying a technological solution to education was simply a part of their worldview.”

I thought about that for a second. “So, whatever happened to the efficiency movement?”

“It ran into reality.”

“Reality? I don’t understand.”

“To put it in scientific terms, their hypothesis couldn’t contend with contradictory data. It broke down.” He pulled a dollar out of his pocket and laid it on the table. “Let’s go take a look at the results.”

After complimenting Mrs. Snelson on the cookies and coffee, I followed Michael out of the café and around the corner. In the alley he opened a door in the side of the building and we stepped through into a far different scene from the one we had left. The sidewalks were filled with hundreds of people standing in line. As Michael led the way past them I was stunned by the nearly palatable aura of despair that radiated from the crowd. Children
clutched at the hands of their mothers, who in turn stood silently by their husbands. The front of the line was a few yards away from us, where grim-faced volunteers ladled food into bowls for the waiting crowd.

“What’s going on here? Who are all these people?” I asked Michael in confusion.

“This is the contradictory data,” was his curt reply.

What year is this, I wondered, noting that our suits didn’t appear to have changed all that much. A sheet of newsprint was skittering along the street near us and I scooped it up. *The Chicago Tribune, March 15, 1933*, I read. “We’re in the middle of the Great Depression,” I said in realization.

“Aye, lad. This is the worst of it. One of every four people in your country alone out of work, not to mention Europe.” Michael gestured toward the hungry throng. “And by people out of work, I’m talking about the men and women who used to work in the factories. When they lost their jobs it plunged entire families into poverty with them.”

“What about welfare? Or unemployment insurance?”

Michael shook his head. “Your government is working on ways to respond to this crisis, but their plans won’t come to fruition for another couple years. For most people, these charity soup lines are what passes for welfare in the here and now.”

“I never realized. I mean, I’ve seen pictures, but… what does this have to do with me?” A crying child who was being hushed into tearful silence by his mother grabbed my attention. “Mike, why are we here?”

He didn’t answer. While we were talking, a delivery truck had parked near the people serving food. Michael walked that way, and I followed him to where the driver was lowering the rear gate of the truck. I heard Michael’s offer of help, and after casting a glance
at how we were dressed, the driver cautiously agreed. Michael took off his coat and began unloading trays of bread from the back of the truck. After a moment I followed his example. After finishing that task, we spent the next few hours working with the volunteers, peeling potatoes and washing dishes.

When all the food was gone, the other volunteers thanked us for our help and we recovered our coats. I started to put mine on then looked back at the line of people still waiting for food, food that wasn’t going to come until the next day. I shivered against the wind coming in off Lake Michigan then walked over to the line.

I offered my coat to a woman who didn’t have one. “Ma’am? Please take this. You look like you could use this more than me.” She looked to her husband then put it on. I shook his hand as they thanked me and turned to follow Michael.

“How are you doing, lad?” Michael asked as we walked.

“All these people…” I replied, trying to get my thoughts in order. “What does the Depression have to do with efficiency?”

“Remember our talk about how the value of technology is related to how it is used?”

Teeth chattering, I nodded in response.

“Same thing here.”

Michael chose a door for us when we were away from the crowd and could pass through unseen. I started shivering again when we got to the top of the stairs behind the church and left the protection from the wind provided by the passageway. It was late afternoon on the tor just as it had been in Chicago, and the November wind was bringing the promise of snow with it. In unspoken agreement we quickly sheltered ourselves from the elements in the main hall where I stoked the banked fire back to life. In a few minutes I
received a mug of coffee from Michael with thanks. I stared into it for a moment before taking a sip, my slowly warming hands wrapped around the thick pottery.

“Anything else I can get you, lad?” Michael asked as he poured a mug for himself. “Spot of Irish for your coffee?”

“I’m good, thanks,” I replied as I took my chair. “So you’re saying that the Efficiency Movement people used technology in the wrong way?”

“Let’s review for a moment before answering that one. What was the prime motivation of the Movements’ members?”

I thought back a second. “To encourage the continued growth of progress and innovation.”

Michael nodded. “Correct. And what stood in the way of progress?”

“Waste and inefficiency.”

“And the technology they employed to remove waste and inefficiency?”

“Science.”

Michael nodded again. “Very good. Now, what were the examples of progress that had them so inspired about the benefits of the scientific method?”

“Um, trains, the telegraph, electric lights… you had a whole list of them.”

“What do all those things have in common?”

“They’re all pieces of technology?” Michael didn’t say anything, so that must not have been the answer. “I don’t know… wait a minute. They’re all machines.”

“Spot on. All those things that they saw as justifying the validity of their problem-solving approach are machines, or mechanical systems such as Ford’s assembly line. And what makes up a society?”
I cursed when the answer hit me. “People. So in regard to my earlier question, they did use technology in the wrong way. They treated people like machines.” Another thought came to mind. “But wait a minute. We still apply science to the study of human behavior.”

“That you do. Psychology, sociology, and education are all scientific fields. The difference is that those fields have grown beyond their beginnings. The Efficiency Movement, under that name at least, died out when its failures in social engineering became painfully apparent.”

My throat was a little sore from the hours spent on the street in Chicago. When I raised my mug for a drink the dry, cracked skin on my hands from just one afternoon of manual labor caught my eye. I rubbed at a rough spot with my thumb as my thoughts ran back to my hometown.

“My father worked in a factory,” I quietly said. “A Ford plant, coincidentally.”

Michael raised an eyebrow. “That right?”

“Yeah. Thirty years, twenty of them on the line.” I sighed as I thought back to my childhood. “I never really understood why he pushed so hard for me to get good grades as a kid and go to college. I just assumed that he was doing the typical parent thing, you know, wanting good things for his children. Now I’m not so sure that was the only reason.”

Michael sipped his coffee and waited for me to continue.

“He grew up during the Depression. I thought I knew what that meant. I was wrong.” I looked over at Michael. “That little boy in the street today. That could have been him.”

“It wasn’t,” Michael replied quickly.
“I know that it wasn’t. Remember Mrs. Snelson’s help earlier today? The train doesn’t go west of Chicago.”

Michael gave a small smile in agreement. “Right. But we could get there by way of Des Moines.”

“Yeah.” My attempt at humor was failing to lighten my mood. “But dammit Mike, the problem is that it could have been him. It’s just something else I didn’t understand until today. He was protecting me from his life.”

“No, lad. That’s not what he was doing,” Michael shook his head. “He was giving you a choice of what to do with your life. A choice he didn’t get in his own.” We sat in somber silence for a few minutes as the fire burned down. Finally Michael stretched and rose from his chair. “And thus endeth the lesson. Enough for one day, eh? And Ian?”

I answered without turning my gaze away from the glowing embers in the grate of the fireplace. “Yeah?”

He placed a gentle hand on my shoulder. “Good job, lad. Point to you.”

“Thanks,” I replied. Michael said something about starting supper, and after he walked out of the main room I roused myself to throw a couple logs on the fire. While I was surveying the results he came back from the kitchen.

“We’re enjoying bachelor hall tonight, lad. The sisters are staying in the village for the night to watch over the new mother.”

I thought about commenting on how much a person could save on cell phone charges by using telepathy but my heart wasn’t in it. As we ate and chatted about other things until time for bed, I tried to shake off the events of the day. It didn’t work. Every time I closed my eyes all I could see was an endless line of people waiting for a chance at a better life.
Atlas was the son of the Titan Iapetus and the water nymph Clymene. Atlas had three brothers: Prometheus, Epimetheus (the husband of Pandora), and Menoetius. Deucalion (referred to as Michael here) is the son of Prometheus. In Grant, M. (1962), p 113.

Atlas led the Titans in a revolt against the gods on Olympus. His brothers Prometheus, Epimetheus, and Menoetius betrayed the other Titans by forming an alliance with the Olympians. When the Titans were defeated, Zeus condemned Atlas to hold the heavens on his shoulders until a later time when Heracles freed him. In Grant, M. (1962), p 88.

In Europe during the Middle Ages when the water supply was often polluted, beer and wine were commonly drunk in place of water. Although many church leaders denounced drunkenness, they seldom criticized the daily use of wine and beer, as they were considered a necessity for maintaining good health. In Engs, R. C. (1987).

Trained as a goldsmith earlier in his life, Gutenberg’s greatest contribution to the development of movable type was to create molds into which he poured an alloy of lead, tin, and antimony. This durable alloy allowed him to print pages of acceptable quality. In Kapr, A. (1996), pp 123-130.

Gutenberg contracted with the church in 1452 to print indulgences. While no known examples of Gutenberg’s printed indulgences are in existence, and the number of indulgences he personally printed is unknown, it has been said that by the end of the fifteenth century over 140,000 copies of one single indulgence were printed. In The British Library: Treasures in Full, Gutenberg Bible (2004).

To finance his work on the inventing the printing press, Gutenberg borrowed money from many sources, including a local money lender named Johann Fust. In 1455 Fust successfully sued Gutenberg to recover his investment. In Scholderer, V. (1970), pp 14-15.
Although he is most famous for his two-volume Bibles, the first real books he printed were volumes of a Latin grammar written by Donatus, who was the teacher of St. Jerome. This grammar was one of the most popular teaching aids during the medieval period, and Gutenberg seems to have found it advantageous to publish many editions of it, not only as practice but also as a source of much needed revenue. There are twenty-four known editions of the text in Gutenberg’s earliest type, all preceding the famous Bible. In Jewels in her Crown: Treasures of Columbia University Library Special Collections (2004).

In Chaucer’s The Pardoner’s Tale we are told of a traveling priest who preaches against the sins of avarice, sloth, and cupidity, yet ironically confesses to making a living by selling fake holy relics and indulgences. In The Riverside Chaucer, 3rd edition, Benson, L. D. (Ed.) (1987).

A German-language Bible was published in 1466, using Gutenberg’s invention. Known as the Mentel Bibel, it was a literal translation of the Latin Vulgate. In Kapr, A. (1996), p 272.

The Reformation’s assault on the authority of the church in the late fifteenth century, fueled by complaints about its perceived excesses, moved to open confrontation in 1517 when Martin Luther called for a debate on the sale of indulgences. Thanks to the invention of the printing press, the views of the reformers quickly spread across Europe. In Smart, N. (1983), p 77.

Epimetheus, the brother of Prometheus (two of the titans who side with Olympus during the revolt), was told by Zeus to give a gift to each of the animals. So he gave good eyesight to the eagle, a keen sense of smell to the dog, etc. By the time he got to man all the gifts were gone. Prometheus felt that man should have a better gift than anything the animals received, so he took fire from the gods and gave it to man. Zeus punished Prometheus for the theft, and also decided to punish man because he was Prometheus’ favorite creature. To punish man Zeus ordered the gods to create Pandora, which they did, and gifted her with the infamous “box” before presenting her to Epimetheus. The two fell in love, and Hermes warned them not to open the box. One day when Pandora was alone she became curious and opened the box. The woes of the world escaped, but Pandora shut the box before it was empty, trapping Hope inside. Later she reopened the box and released Hope. This shows that there is always Hope when times are bad, but Hope has some catching up to do. Interestingly, the daughter of Epimetheus and Pandora was Pyrrha, the wife of Deucalion, which makes her his cousin. In Grant, M. (1962), pp 109-10.

The Ford Motor Company’s assembly plant in the Highland Park suburb of Detroit, Michigan, in 1913 was the home of the moving assembly line. In Watts, S. (2005), p 141.
Although Henry Ford is often credited with the idea of the moving assembly line, contemporary sources indicate that the concept and its development came from a number of Ford employees. In Bryan, F. (1993), p 214.

The steps Ford took to improve working conditions, such as the so-called “Five-Dollar Day,” made him a hero in the eyes of many who championed the cause of the working class. In Watts, S. (2005), pp 194-198.

Many of Ford’s employees were immigrants, and Ford wanted them to be integrated into what he saw as the proper American way of life: practicing personal hygiene, saving their money, not drinking or smoking, etc. Members of Ford’s Sociological Department were known to come to employee’s houses during their time off to see if they were following Ford’s lifestyle rules. In Watts, S. (2005), pp 201-03.

Over fifteen million Model T’s were produced from 1908 through 1927. In Watts, S. (2005), p 372.


Prior to the collapse of the stock market in 1929 unemployment in the U.S. was 3.2%. In 1933 it peaked at 24.9%. In London Economist (1937), p 50.

President Roosevelt’s New Deal policies were introduced in 1933, but it isn’t until January of 1935 that large numbers of people begin to see relief from the economic effects of the Great Depression. In London Economist (1937), p 9.
CHAPTER 6

The next morning I awoke shivering beneath my blankets. As I got dressed I was surprised to see my breath coming out in little foggy clouds. “I take it that winter is here,” I commented to Michael as I entered the kitchen and made a beeline for the coffee pot.

“Over a foot of snow so far, and more coming.”

“A foot? Wow. Is school canceled for a snow day?” I asked as I helped myself to a mug of coffee.

“Not likely,” Michael answered with a chuckle. “I think we can make it to where we’re going without the need for Malamutes and a sled.”

“Once more unto the breach then, as the bard wrote. And I’m guessing there’s probably no point in me asking where and when we’re going today?”

“The army training center at Fort Leavenworth, Kansas, to begin with,” Michael replied in a deadpan voice, catching me off guard. “In June of 1942.”

“Say what? Never mind, I’m sure it’ll make sense once we get there,” I said as he handed me a steaming bowl of oatmeal. I picked up a spoon from a rack on the cupboard and stopped. “Hey, Mike, how are you fixed for supplies? I mean, I’ve been eating and drinking your stuff and, well, I don’t want to be a burden…”

Michael started spooning oatmeal into his own bowl as he prompted, “Yes, Ian?”

I felt a little embarrassed for some reason. “Do you have enough food to make it through the winter?”

Michael finished filling his bowl before speaking. “Our visit to Chicago is still with you, isn’t it?”
It hit me then why I felt uncomfortable. “I guess so. It seems wrong somehow to take all this for granted when those people have – had – so little.”

“As a wise man once said, the poor will be with us always.”

“Does that excuse me from being bothered by what I saw?”

“Just the opposite,” Michael said with a shake of his head. “It was advice that we should all be more like your father and look out for those who depend on us.”

I thought about that for a second. Thanks, Pop. “You haven’t answered my question.”

“I haven’t, have I?” he chuckled. “Thank you for asking, lad. I’ve plenty to share, don’t worry.”

We finished eating, cleaned up, and trudged out into the snow. Along the side of the church and down the steps we went, and Michael opened the door into nearly blinding sunshine. As Michael walked through I noted with interest how his clothes changed from medieval garb to an army officer’s uniform.

“It’s like reaching though a pane of glass,” I said in fascination, forgetting about the snow swirling around my ankles as I stood for a moment moving my arm in and out of the doorway, and my sleeve went back and forth from off-white cotton to khaki.

“If that door shuts you’ll find your arm about sixty years and another world away from the rest of your body,” Michael said quietly. I quickly stepped through and joined him where he stood watching me. He chuckled at the look on my face and began walking. Glancing back at the door with a shudder as I followed, I saw that we had emerged from one of a row of Quonset huts, their curved galvanized iron sides reflecting the burning Kansas sun.
“That was so not funny,” I commented over the crunching of our shoes on the fine limestone gravel scattered across the tarmac.

“Live and learn, lad, live and learn,” Michael replied as we approached a large, hangar-like building. “And here we are.”

Following his lead, I saluted the private standing guard as we walked through a double door in the side of the building. When my eyes adjusted to the change in light I saw that we were standing at one end of an L-shaped hallway. We walked down the short leg of the L and through another set of double doors into the back of a large room filled with hundreds of soldiers sitting at classroom desks. The exterior windows of the rooms were covered, and the reason for that became apparent when the overhead lights went off and a film started on a screen at the front of the room.

“That is the largest classroom I’ve ever seen,” I whispered to Michael after a moment. “It looks like it holds more students than the largest lecture hall on our campus.”

“It is a rather large building. Why do you suppose your government is using this facility for training instead of using it to build tanks or planes?” Michael asked.

“Planes aren’t much good without men to fly them, and crews to maintain them. And if it’s 1942, then my country just got into the war last December. The government had to train millions of soldiers as quickly as possible.” A thought hit me. “Ninety-day wonders, I remember my Dad called the officers.”

“Not to their faces, I’d imagine,” Michael said with a grin.

“No, probably not.” I agreed.

Speaking of officers, one looked over at where we stood whispering and put his finger to his lips. Michael nodded and led me back out into the hallway. We walked past the
outside doors and around the corner to an office with an inside window where we could observe the training hall in privacy.

“It’s wager time again,” said Michael. “As you said, they had to train a military force as quickly as possible. How would you suppose they solved that little problem?”

“They applied technology?” I answered sarcastically.

“I should take half a point away for your attitude,” Michael said in response. “Try again.”

“Would I be correct in assuming that this scene is being played out at military bases all over the country?” I asked after a moment of actually thinking about his question.

“And in classrooms at hundreds of colleges and universities,” Michael added with a nod.

My little light went on again about then. “Your question yesterday about building cars one at a time or building them many at a time wasn’t so rhetorical, was it?”

Michael smiled and said, “Why is that?”

“This is an assembly line. I bet they’ve applied the same solution to the problem of educating thousands of troops as Ford did to the problem of how to mass produce cars.” I looked back out at the soldiers. “You wouldn’t want to start a training program of this size without some serious planning and analysis.”

“Quite right.”

“You’d have to determine learning objectives and develop materials – so you’d need subject matter experts. You’d also need to develop assessment tools, including diagnostic placement tests of student abilities. Ongoing formative evaluations would have to be
performed, and the results of those evaluations used to improve the efficiency of the training.”

“As a matter of fact, you’d need a complete instructional design system,” I said as I turned to face Michael, “That’s what’s going on here, isn’t it? An example of the first large-scale instructional design system.”

“Spot on, lad. The seeds were sown during the last few decades, but this is where it all came together.” I earned a thump on the back. “Point to you.”

I thought aloud about the textbook description of traditional instructional design. “Instructional design is a self-correcting, systems approach that seeks to apply scientifically derived principles to the planning, design, creation, implementation, and evaluation of effective and efficient instruction.”

I shook my head. “I feel like I’ve seen this movie, and I don’t like how it ends. What happens when these people are dumped out in the street after the military doesn’t need them anymore, like what happened during the Depression?”

Michael shook his head. “Different times, different results. Awareness of social issues like unemployment was increased thanks to Depression-era programs like the Works Progress Administration. After this war is over your government will provide funding for many veterans to get college educations, something those people couldn’t have paid for on their own.”

I glanced back at the hundreds of soldiers in the classroom. “That’s a relief. I was afraid our next visit would be another Chicago-like stop.”

“Not today.” Michael raised an eyebrow. “You recognized what’s going on here rather quickly. Any ideas why that was?”
“Well, I guess it’s because this is really what I teach. I try to get across to my students how to design lessons that incorporate technology, as well as how to use that technology.”

“How to use technology, eh? That’s interesting.” I gave him a look. Great, now he’s picked up the sisters’ habit of being cryptic. “So, anything else here you’d like to see?” I shook my head and Michael turned toward the door. “Then it’s time for us to move along.”

We left the training building and walked back the way we came until we reached the Quonset hut. Michael opened the door and he chuckled as I quickly stepped through ahead of him. “A wee bit nervous, are we?”

“Just erring on the side of caution,” I replied as I checked to make sure all my parts were still attached. I noticed our clothes about then. “Hey, we’re wearing jeans and tee shirts. We must be close to my time.”

I pulled the bottom of my shirt out a little so I could better read the, what to me was upside-down, writing on it. “Glitch-kickers Computer Corps? This is one of my old shirts from high school. And yours has an Atari logo… what’s up with that?”

“As always, we’re just fitting in with the locals,” Michael replied as he started walking.

“By dressing like nerds?” I decided it was time to look around. We had come out of a house in what looked like a suburban area, with nearly identical ranch-style tract houses lining both sides of the street. Quonset huts to ticky-tacky houses, not much of an improvement to my mind. There were palm trees in many of the front yards and my nose picked up the tang of salt air. I chuckled when I spotted a fire hydrant painted to look like a
miniature Uncle Sam. “Heh. I haven’t seen one of those since I was a kid. That was during the bicentennial…”

I noticed a weight on my left wrist and realized that I was wearing an old-style LED watch. Hey, that’ll help. Mashing the buttons on the sides, the display finally lit up ‘04/07/76’ in glowing red numbers. I grinned at Michael. “This is 1976, isn’t it?”

“That was cheating, lad,” Michael commented. “Any idea as to where in 1976 we are?”

“Well, let’s see. So far you’ve taken me to witness watershed events in instructional technology such as writing and printing, the industrialization of education, and just now modern instructional design. Therefore it’s not too big a stretch to think we’re here to see the birth of another technology.” Michael just smiled but didn’t say anything, so he must want something more.

I jerked a thumb toward the yard we were walking past. “We’ve got palm trees here, and I can smell the ocean, so I’d guess we’re somewhere temperate and near a coast. That narrows things down a bit. I can’t think of any big technology breakthroughs related to education that took place on the east coast in the 1970s, so we must be in California. Given all that, and the way we’re dressed, I’d say we’re in Silicon Valley.”

“Very good. What you smell, however, is the San Francisco Bay. The Pacific lies over the hills to the west of Los Altos, which is the name of this pleasant little community.”

“Los Altos? That doesn’t ring any bells for me. Xerox is in Palo Alto if I remember right, and Apple is in Cupertino…”

“Not yet,” Michael interjected. “At this point in time, the entire company is right over there.”
“Huh?” I looked across the street to where he was pointing to see two guys who looked like they were in their early twenties standing outside an open garage door. They were dressed in tee shirts and jeans like we were, with the addition of long hair, beards, and leather sandals. A somewhat older third guy – more in keeping with what television depicts as the stereotypical “geek” than the hippy-ish “nerd” like the first two – was climbing out of a car that had just stopped in the driveway. As we got closer I could hear the thinner of the nerds arguing with the geek, while the other one stood nearby with an uncomfortable look on his face.

“C’mon, man, we really need you here,” the thin nerd exclaimed, waving his arms around. “You can’t just walk out on us now.”

“You’re out of your mind, you know that?” the geek replied angrily. “If those things don’t sell, how the hell are you planning to pay back that loan? You’ve put all our necks on the line, not just yours.”

“They’ll sell, they’ll sell like nothing you’ve ever seen before,” the nerd replied, almost bouncing up and down with excitement. “You’ve got to think different, man. We’re starting a revolution here. People want a revolution.”

The unhappy nerd walked over to meet us as we came up the driveway. “Can I help you guys?” he asked.

“We heard about your mobo from some friends who saw the Homebrew demo you guys did,” Michael answered with a friendly smile. “Care if we take a look?”

Mobo? Where have I heard that word before? Oh, back in tech club in high school. It’s nerd-speak for computer motherboard.
Nerd two pushed the hair out of his eyes as he looked over at the argument in progress and sighed. “Anything to get away from this mess. C’mon.” We followed him into the garage, which evidently made the other two decide to take their discussion out into the yard.

“There it is,” he said, pointing to a green circuit board surrounded by wires and cables on a wooden workbench, “the Apple Computer.” I could hear the low-pitched whine of a power supply fan, and a cursor was slowly blinking on a nearby black-and-white TV. “It’s got room for 8K of RAM, so there’s plenty of memory for programs. This one even has a BASIC interpreter loaded in 4K of ROM.”

As what I was seeing sank in it hit me that I was standing in the Mecca of the computer world, the Jobs’ garage in Silicon Valley. That meant the skinny guy out in the yard arguing was none other than Steve Jobs himself, and the guy giving us the demo had to be Steve Wozniak. The founding fathers of the PC industry, and this garage was where it all began. This is way beyond cool, my inner voice exclaimed, and I had to agree. On the other hand, the DVD player back in your apartment is a more powerful computer than what you’re looking at now.

“Uh, 8K of RAM, huh? Far out,” I commented, trying not to jump up and down in excitement at getting a personal demo from the Woz. “And BASIC, too?”

“Sure. I wrote the interpreter myself,” Woz replied, and started typing on a keyboard attached to the motherboard by a ribbon cable. 10 PRINT “HELLO WORLD” appeared on the screen. He input the RUN command and looked at us with a smile as the greeting repeated itself. “It doesn’t have any floating point operations yet, but I’ll get around to that soon.”
I tried to think of something complimentary to say about this machine from the Pleistocene era of computing that wouldn’t create a temporal anomaly. “It kicks butt on the Altair. You have to program the 8800 by flipping switches.”

“Yeah, and the 8800 costs a lot more once you add things like memory and interface cards,” Woz said. “We have all that built into the motherboard. And you don’t have to solder it together.”

“How much are you selling them for?” I asked.

Woz looked at the open doorway of the garage. The geek disagreeing with Steve Jobs had climbed back into his car and Jobs was talking to him through the driver’s side window. “That’s the problem,” he said with a sigh. “You know the Byte Shop in Mountain View?”

No, not really, I said to myself. “Byte Shop” sounds like the name of a computer store, and they were like Masonic lodges for the tech nerds of the ’70s. If I say “no” he might think something is wrong, but if I say “yes” and don’t know the owner, I’m sunk as well. Think, McFly, think. Wait a minute. Why not go with the truth? What was the name of the computer place I hung around in high school?

“We’re not from the Valley. The Glitch-kickers,” I pointed at the name on my tee shirt, “meet at the Computer Emporium over in Sherwood Glen.” Which was all true, except the Glitch-kickers haven’t formed yet, that store isn’t yet open, and Sherwood Glen is a shopping center in another state. Details, details.

“Hey, that’s cool,” Woz shrugged, my response evidently being good enough. “The thing is, we started Apple so we could sell a few mobos to our friends in the Homebrew Club, you know, make a few bucks to buy some new hardware. And just to build this
prototype I sold my HP calculator and Steve had to sell his van. But after our demo at the last club meeting,” he cocked a thumb at Jobs, “Steve talked Paul Terrell at the Byte Shop into placing an order for fifty complete machines.”

“What’s wrong with that?” I asked, thinking that in just a few years these two would both be millionaires from selling hundreds of thousands of Apple computers.

“What’s wrong is that we don’t have the money to build five machines, let alone fifty,” Woz replied in an exasperated voice. “Or at least we didn’t before Steve leveraged a loan against the order. That’s why Ron is so upset.”

“Who’s Ron?”

“The guy in the car. Ron Wayne, our third partner,” Woz answered. We turned to stare at the confrontation in the driveway. Jobs and Wozniak had a partner? What the heck? I don’t remember hearing anything about them having a partner.

“It looks like Ron’s leaving. I should get back out there to calm Steve down.” Woz shut off the television and we headed for the door.

“Oh, hey, Woz?” I asked as we walked.

“Yeah?”

“So how much are you selling them for?”

“Oh, right. Six hundred and sixty six dollars, and sixty-six cents. 666, get it? Steve’s idea of a joke. You know, Apple, Garden of Eden, Satan and all that?” Woz said with a shake of his head.

I forgot what that kind of money meant in 1976, and reacted to his answer in twenty-first century terms. “That’s all? Heck, if I had my checkbook I’d take one now.”
“You hear that?” Steve Jobs yelled over the sound of the just started car engine. “The first guys today who show up and we’ve got a sale. C’mon, Ron!”

To my horror Ron shut off the motor. “Okay, Steve. You’ve convinced me. I won’t quit. If the Apples sell that fast, we should be able to pay everyone back in time.”

Michael put a hand on my arm. “Hey, look, is that the time? We’ve got to go. Thanks for the demo,” he said with a nod at Woz. “Be seeing you.” Still holding my arm he practically dragged me down the street without saying a word. When we reached the house where we’d arrived earlier he opened the door and led me through.

I was freaked. All the way back to the house, the phrase “what have I done?” was on auto-play in my brain. When Michael took me through the door I completely expected to find myself in the passageway below the church. To my surprise we stepped out onto another sidewalk, still dressed in same clothes. To my further surprise Michael was laughing.

“Oh, lad, the look on your face,” he said between guffaws. “I wish I had a camera.”

“What’s so funny?” I asked angrily. “Don’t you get it? I just changed history. For all I know they never succeed as a business, or never invent the Macintosh or the iPod, or – dammit, why are you still laughing?”

“How am I doing in the ‘make Ian’s jaw drop’ contest?” Michael forced out, nearly bent over from laughing so hard. “You can’t change history, lad. It’s already happened. It’s in the past, water under the bridge, or over the dam. Choose your own analogy.”

I was stunned. “But, but you warned me about not knocking the garbage man into the Euphrates when we were in Ur.”
“No, lad. I simply agreed with you that drowning your own ancestor would be a bad thing. I never said you could actually do it.”

“But that Ron guy, what I said made him stay,” I protested.

“How do you know?” Michael asked.

“’Cause I’ve never heard of him before!”

“Who made you an expert?” Michael asked. “Just because you haven’t heard of him doesn’t mean you changed anything. Ron Wayne is going to resign and sell back his 10% share of Apple in a less than a week, just like he always has.”

“But we were there,” I continued before being interrupted by a weather-beaten older man.

“Excuse me, could you guys spare some change?” Michael pulled a five from his pocket and handed it to him. With a quiet “thanks” the man took the bill and shuffled off.

“Where are we?” I asked in confusion, it finally sinking in that we were standing outside an office building in a downtown area.

“Seattle.”

“Seattle?” I echoed back dumbly.

“Sure. I wanted some good coffee since we were in the area. C’mon.” Michael started along the sidewalk. “You look like you could use a little caffeine as well.”

I rubbernecked like a tourist as I fell into step beside Michael. There’s the Space Needle, and a couple blocks over I saw a track for the monorail. Okay, fine, it’s Seattle. I took a deep breath.

“Coffee sounds good,” I commented, “but don’t change the subject. Are you saying that what just happened in Los Altos didn’t change history?”
Michael shook his head. “Not a bit. Like I said, you can’t change the past. What was, was.”

“What if we hadn’t gone there? Or if I hadn’t said anything?” I asked, desperately trying to figure this out.

“Not possible. You and I have always visited their little setup, and Mr. Wayne has always hung about and helped assemble computers. At least for a few more days.”

“And I suppose we’ve always been in Ur, Strasbourg, and Highland Park?” I asked skeptically.

“Now you’ve got it,” Michael replied.

“But… oh, never mind.” I didn’t ask any more questions all the way to the Pike Place Market.

Once there I followed Michael as he wound his way between the shoppers at the stalls before stopping at an open café area. From one of the nearby vendor stalls I could hear a radio playing *Afternoon Delight. You gotta love the seventies. Maybe we’ll hear some Captain and Tennille.*

Michael pulled a few dollars from his pocket and handed them to me before sitting at a table with a view of the Puget Sound. “Here you go, lad. Uncle Mike’s feet are tired, and I believe it’s your turn to get our refreshments. I’ll have a triple espresso.”

Here I go where? I thought as I took the money. I turned around and there was the twin-tailed mermaid, large as life. I looked back at Michael. “You’re kidding? We’re in Seattle and you take me to a Starbucks?”
“This happens to be the Starbucks, my lad. They won’t go national for another decade,” he replied. “I haven’t heard any complaints about their coffee from you back at the tor. By the way, don’t let me forget to get a few pounds of beans while we’re here.”

After the shocks of the last hour, it felt like the gears in my head were turning but the teeth just weren’t catching. I blinked a couple times, did my best guppy impression, and went for our drinks. Upon my return I sat down across from Michael. “You win. Can we start this conversation over?”

He gave a little chuckle. “Certainly, lad. Where would you like to begin?”

I looked out at a ferry crossing the sound. “Are we in Seattle to visit Microsoft?”

“No,” Michael answered. “At this point in the game, Gates and company are still in Albuquerque writing software for that Altair computer you mentioned earlier. Besides, they didn’t really impact education any more than the folks who copied Gutenberg did.”

“Then why are we here?”

He hoisted his cup in answer. “Cheers.”

“Cheers,” I replied automatically and took a sip. “Okay, fine, Starbucks sells a decent cup of coffee. But what’s the real reason we’re here?”

Michael raised an eyebrow. “Ever heard of Lloyd’s of London?”

“Huh? Yeah, sure, they’re a famous insurance company.”

“Do you know where they started out?”

I shook my head. “In London?”

“In a coffee shop,” Michael replied with a grin.

“You’re kidding me.”
“Not a bit. In the seventeenth century a great deal of trading went on in London’s coffee shops. The owners of sailing ships would meet there to discuss their business with the buyers and sellers of their ships’ cargoes, the bankers who financed the journeys, and the insurance speculators who gambled that the ships wouldn’t be lost at sea.” Michael took another sip before continuing. “Not only was modern insurance born over a cup of coffee, so was the idea of the stock exchange.”

I thought about that for a second. “That’s because a load of grain from the colonies might be worth more or less when it arrived in port than it cost to buy from the merchants who sold it, right? Just like in Ur.”

Michael raised his mug. “Spot on.”

I took a look around. “So what does this have to do with Starbucks?”

“How do you think Starbucks got so ubiquitous?” he asked in response.

“I’m not sure,” I shrugged. “It was like one day I’d never heard of them, and the next they were on every corner.”

“Was there any shortage of places to buy a cup of coffee in the 1980s and 90s?”

“Not really. You could get one anywhere.”

Michael nodded. “What they did was create the perception that getting your coffee at Starbucks was somehow better than buying it somewhere else.”

“So,” I mused aloud, “they weren’t just selling coffee anymore. They sold Starbucks.”

“Those early British coffee houses were the places to be seen if you were in business,” Michael replied. “The owners of Starbucks resurrected this idea. They turned the experience of getting a cup of coffee, freshly made by a barista, into a social event. Their
first stores were placed in the business districts of major cities, and marketed as an upscale venue to the ‘movers and shakers’ of the corporate world. Selling the actual product, coffee, became secondary to selling the perceived image of the Starbucks brand.”

I looked again at the image of the twin-tailed mermaid on the wall. “And those roots in shipping explain the logo. I never would have guessed.”

“Let’s talk for a bit more about Apple,” Michael said after a moment. “Why do you think their computers are so omnipresent in education?”

His change of topic pulled me away from my contemplation of the Starbucks sign. “Um, first ones on the market? I don’t think the IBM PC was available until early 1982.”

“I’m sure Calliope won’t mind if I tell you a little story,” said Michael. “Many companies were in competition with Apple in the early years of the industry, but from 1977 until 1981 the Apple II was the best-selling microcomputer – or, as we’d say today, personal computer – on the market. In late 1981 IBM entered the fray by announcing their PC. In response Steve Jobs took out a full-page ad in the Wall Street Journal that said, ‘Welcome, IBM. Seriously.’”

“Seriously?” I quipped.

“Seriously.”

“Knowing how things turned out, I’m detecting a strong odor of irony here.”

“Quite strong,” Michael replied. “On the face of it, Apple had every reason to be arrogant. The IBM PC used older technology than the Apple II; had no color or sound; cost twice as much; and was only marginally faster. What Mr. Jobs didn’t count on was one simple fact: this machine came from IBM, which was synonymous in people’s minds with the word ‘computer’ at the time.”
“I remember an old cliché: ‘Nobody ever got fired for buying an IBM.’ So what
you’re saying is that Apple’s machines weren’t perceived as,” I finger-quoted, “‘real’
computers?”

“Right. And because of that the IBM PC sold like coffee in Seattle,” said Michael,
rubbing a thumb over the Starbucks logo on his cup. “For the first few years PCs were sold
primarily to businesses – and as you can imagine, that’s where the serious money is. Within
a year of IBM entering the market Apple found itself in second place, and falling behind
fast.”

“What about the home market? And education?” I asked.

“Before 1983 those markets weren’t yet a factor, although that would quickly change.
No, as 1983 began our Mr. Jobs was thinking hard about how to compete with IBM. The
Apple II was already less expensive than the IBM PC, so there was nothing he could do
there. And his two products that were aimed at the business market flopped. The Apple III,
introduced in 1980, had serious hardware and software problems. His next attempt would be
in January of 1983 when Apple debuted the LISA, the first mass-marketed computer to use a
graphic user interface.”

“I remember reading about the LISA. Didn’t that thing cost about ten grand? You
could buy three PCs for that price.”

Michael nodded. “And that’s when Jobs decided, as you noted earlier, that the real
problem was one of perception. To solve that problem he had to either change people’s
perceptions, or take a different approach.”

“Are you talking about marketing, like ads and such?”
Michael shook his head. “Yes, but not in the way you mean. Apple continued to run conventional advertisements in magazines and on television, but Jobs saw the issue as running deeper than that. In his opinion, people thought of IBM in the way they did because they’d grown up with them since the dawn of the computer industry. The approach he chose was to have the next generation grow up with Apples instead.”

I saw where Michael was going with this. “And so Apple’s problem became how to reach that next generation – in other words, children.”

“Spot on. In 1983 Apple released an updated version of their flagship product, called the Apple IIe, and Jobs announced what he called the ‘Kids Can’t Wait’ program, which was to put donated Apple computers in every school throughout the state of California. Other states followed suit by choosing Apples instead of other brands to purchase for their schools.”

“Which would lead to most educational software being developed for Apples,” I continued for him, “and schools buying more Apples, and parents buying Apples for their home computers… all of this happened, and answers your question as to why Apples are ubiquitous in education. But Jobs failed in his main goal. IBM-compatible computers are – will be – more prevalent in the general market.”

“Many things brought that about. Steve Jobs’ – shall we say, mercurial – personality led to him being relieved of his management duties in 1985, and Apple’s new management didn’t share his subversive and long term approach to marketing. They looked at education as a niche market, like desktop publishing or graphic design. While they were always friendly to education, they didn’t see it as a garden in which to grow future customers. In addition, IBM allowed other companies to copy the design of their computer, and soon the
personal computer became defined as any machine compatible with IBM’s, which the Apple IIe and Macintosh were not.” He drained the last of his coffee while I thought about what he’d said.

“Mike, that’s interesting and stuff, but… what’s the point?” He simply looked at me in response, so I went on. “You know what I mean. Is this one of those classic life lessons along the lines of you shouldn’t draw to an inside straight, don’t tug on Superman’s cape, and never get involved in a land war in Asia?”

Michael looked pointedly at the bottom of his empty cup, and then raised his eyes to catch mine. “What was the net result of the ‘Kids Can’t Wait’ program?”

We were obviously back to our drink wager. “It made Apples popular in education?” I ventured.

“Oh, too bad; that’s not the answer I was looking for,” Michael chuckled, sounding like a game show host. He held out some money. “I’ll have a mocha this time.”

I sighed, took the money, and obediently traveled to the counter. A few minutes later I was back with mochas for each of us. “So what was the net result?”

He raised an eyebrow. “In one sense, it gave you a job.”

“Excuse me?” I replied, not expecting that answer.

“Before that program, computers in schools were as rare as honest politicians. If you found one, it was as likely to be an Atari or Commodore as an Apple. What brand or model they were didn’t really matter, as there weren’t enough of them around to have a major impact. But in 1983, when Apple donated over nine thousand of them at once, everything changed.”
I thought back to my talk with Jeff and Bill at Dugan’s about the early days of computers in schools. Was that just last week? It seems longer ago than that. “I was just talking about this with some friends. From what I’ve read those were crazy times, full of promise and experimentation.”

Michael chuckled. “You make it sound like the ‘60s, only instead of ‘tune in, turn on, drop out’ you’ve got ‘plug in, boot up, log in.’ Regardless, why do you think that was?”

I slurped some whipped cream off the top of my drink. “It’s obvious, isn’t it? Every academic journal is full of articles about what powerful tools computers are for learning and teaching.”

“You may think that now, but we’re talking about the early ‘80s. What proof was there back then to support that statement?”

I thought about that for a moment then shook my head. “No idea. I know there was research being done on how best to use them, but it was still too early to see any real results. Researchers talked about how the computer has the potential to help out in practical areas such as educational assessment and diagnosis. But even back then, due to the limitations of hardware and software, they felt the promise of computers was still unfulfilled by reality. Kinda like Alice said in Through the Looking Glass, it was always jam tomorrow, never jam today.”

“Let’s review the last few days, shall we?” Michael proposed. “What was the solution we saw in Ur to the accounting problems of the grain merchants?”

“Literacy, I guess.”

“Which we defined as…?”

“A form of technology.”
He nodded. “And in Strasbourg, what was the solution to the church’s problem?”

“The printing press – more technology.”

“Highland Park, and Fort Leavenworth?”

“The moving assembly line, and the industrialization of education. Technology, technology.”

Michael sipped his mocha. “And the solution to education’s problem in 1983?”

“Com – ” I started to answer then cut myself off. “Wait a minute. Education didn’t have a problem. Apple did.”

“You’re learning to keep your eye on the ball, lad,” Michael said with a grin. “Go on.”

I nodded in thanks for his compliment, but my mind was busy sorting out the sequence of events. “Apple convinced the California schools that there was a problem: kids needed computers to learn. To solve this ‘problem’ the schools eagerly accepted the free computers from Apple and, as you said, other schools began buying computers because obviously their kids needed them, too. It’s like computers in education were initially a solution in search of a problem.”

“How do you think it was so easy for Jobs to bring the schools around to his point of view?” Before I could answer, Michael continued, “Let me put that another way. What was the popular perception of computers back then?”

“Well, I know there were folks skeptical of their de-humanizing effects. You’ve got songs from groups like Jefferson Airplane that talk about that.”

“True enough. But what about how computers were presented in the mainstream media? What’s a popular movie that has a computer in it?”
I thought for a second. “Well, Stanley Kubrick’s *2001: A Space Odyssey* comes to mind. HAL gave me the willies as a kid. So?”

“What are some of HAL’s abilities?”

“Well, the astronauts could talk with it, and it was intelligent – psychotic, but intelligent… Wait a second.”

“Yes, lad?”

“That’s it, isn’t it? People didn’t know enough about what computers were really like, so they based their perceptions on what they saw in the movies and TV.”

Michael smiled. “Remember the Clarke quote I gave you a few days ago? ‘Any sufficiently advanced technology is indistinguishable from magic.’”

“And that’s what they thought they were getting in the classroom wasn’t it, magic boxes that could think. But Mike, even in my time computers can’t think. They’re just glorified adding machines.”

And then the personal side of this hit me. “Are you saying that this ‘gave me a job’ because people in my field have spent the last twenty-five years trying to find problems in education for computers to solve?”

“Not completely, but it does put things in an interesting light, doesn’t it lad?”

“I don’t know,” I replied, sipping more of my chocolate/coffee mix. “I’m actually feeling a bit like I just found out that I’ve bought some beachfront property in North Dakota.”

Michael leaned forward suddenly. “Then you’re missing the point. What have we been talking about the last few days?”

“The history of instructional technology. Why?”
He ignored my question. “Would you say education has been improved because of
the technologies we’ve seen, such as literacy, printing, or computers?”

“Well, sure, but what I’ve learned in the last few days is that improving education
wasn’t the primary motivation of those pushing the technology.” I ticked my answers off on
my fingers. “The grain merchants, the Church, Henry Ford, and Apple all used technology to
make money. The two examples that weren’t aimed directly at making money, the
Efficiency Movement folks and the military, were more interested in the means of education
rather than the ends.” I shook my head. “It’s almost like any benefits to education because
of technology were an unintended effect.”

“So, because of why computers were introduced into education, would you say their
use is no different than the use of any other technology?”

Well, duh, of course it’s no different. You just teach procedures, remember? I started
to repeat to Michael what my inner voice had just said, then stopped. “Actually, I think it is
different. Computers aren’t a single function tool like a hammer or screwdriver. They’re
multifunction tools that do whatever chore they’re programmed to do. That means they
aren’t any better or smarter than the people who wrote the programs, and they definitely
aren’t some magical silver bullet that will cure all of education’s ills, but… I said a few days
ago that the value of a technology comes from how it’s used, right?” Michael nodded but
didn’t say anything.

“But what about the question of why a technology is used? That has to be more
important than how.” My little light blinked on. “That’s why you asked me why I teach
instructional technology, isn’t it? I’ve spent years researching how to use computers in
learning and teaching, but that’s not the right question. I need to be looking at why we use
computers, or any other technology for that matter. Just learning about technology on its own isn’t the answer.”

Michael cocked his head to one side. “But do you think it makes you a better teacher for having learned about technology?”

You asked me that question just after we met, I thought, but now I think I know the answer. Before I could say anything Michael sat back with a smile.

“I know, lad, you don’t want us immortals listening to your thoughts,” he said.

“You’ll have to forgive me. Ever had fresh cod?”

“Huh? I’m not following you…”

“Fresh cod – for dinner tonight. I think a hearty celebration of your matriculation is in order,” Michael said as he got to his feet. “We need some potatoes to fry up into chips. How does that sound?”

“Um, sure, fish and chips sound good.” I tossed our used cups and followed him up to the Starbuck’s counter. After he placed his order for coffee beans with the barista I asked him a question. “Mike, you’ve lost me again. Matriculation? We don’t have any more visits to make, or anything?”

“Not with me,” Michael replied. “You see, I have a slight advantage over other teachers. I can tell when you’ve comprehended the material, and when it’s time to move on.”

“But I don’t feel ready,” I protested in confusion.

He placed a finger in the middle of my forehead. “You have what you need here,” he said before moving the finger to the left side of my chest. “Only you will know when you have what you need here, Daniel-san.”
I chuckled automatically at the *Karate Kid* reference. The feeling of mental whiplash from another of Michael’s sudden changes of topic was still there, but I realized that I did feel as if a weight had started to lift. “Thank you, Mr. Miyagi.”

*Sweep the leg, Johnny,* came unbidden to my mind. *Dude, you’ve always been more in tune with the Cobra-Kai than with Daniel-san.* Uh-huh, and who won that match in the movie? My inner voice didn’t reply.

2 (page 157) It’s a commonly held belief that Apple’s operation started in Steve Jobs’ parents’ garage, but it only moved to the garage when they ran out of room in Steve’s bedroom. In Linzmayer (2004), p 8.

3 (page 157) Steve Wozniak always meant to finish his BASIC interpreter by adding in floating point operations but never did. Eventually this would lead to Apple contracting with Microsoft for rights to use a version of their BASIC. This contract would later aid Microsoft in landing the contract with IBM to provide an operating system for their PCs. In Linzmayer (2004), p 4.

4 (page 159) Steve Wozniak originally designed and built the first Apple for his own use, but Steve Jobs recognized its potential and convinced him that they should go into business selling them to their friends in the Homebrew Computer Club. Because Woz had been friends with Jobs for years, he insisted on bringing in a third partner to break any tie votes. Jobs convinced the 41-year-old Ron Wayne, with whom he had worked at Atari, to join as a 10% partner and the three of them formed Apple Computer on April 1, 1976. In Linzmayer (2004), p 6.

5 (page 159) Years after the introduction of the Apple I, because of criticism about the negative connotations of the “666” price, Steve Jobs would claim that he based the price of the first Apple on a simple calculation of 30% profit margin over its cost to build. In Linzmayer (2004), p 7.

6 (page 161) Ron Wayne was so upset by Steve Jobs taking out a loan that he sold back his 10% share of Apple for $800 on April 12, 1976. Had he kept his investment, by the year 2000 his shares would have been worth over 500 million dollars. In Linzmayer (2004), p 10.

7 (page 169) “The computer has the potential to do much for us in terms of educational assessment and diagnosis. We have probably only begun to realize this potential. Most of the problems and dissatisfactions experienced to date are due to limitations in hardware and software. Trends in these areas are promising, especially in terms of improved hardware at decreased costs.” In Willis, J. W., Johnson, D. L., & Dixon, P. N. (1983), p 223.
CHAPTER 7

Calliope and Urania joined us for my final evening around the fireplace in the great hall after Michael and I returned to the tor from Seattle. True to his word, Michael made the best fish and chips I’d ever tasted, which we washed down with glasses of a nicely dry Sauvignon Blanc. The hours passed quickly as the muses asked us about the various places Michael and I had traveled, nodding approvingly to my and Michael’s responses. Of course they had a good laugh at my expense when Michael related the story about my reaction to our visit to the Jobs’ garage in Los Altos. And I wasn’t surprised when they merely shook their heads and replied “you’ll see” to my questions of what was next in our travel plans. I could only grin and bear it. Cultivating an air of amused mystery was definitely a part of their job description.

The next morning the sisters and I bid a heartfelt farewell to Michael. After extracting a promise from the muses to visit more often, and telling me to be good, he stood and waved until his stocky figure disappeared from sight as we carefully wended our way down the snow-covered tor. At the stables behind the Glastonbury inn the sisters’ horses whinnied softly in greeting when we entered, while mine continued its campaign of aloof intimidation. Following the main road back to the outskirts of town, we took a fork near the mill and reentered the forest.

For the next few days we traveled along a path that followed the bends and turns of the river. The muses continued to be secretive about our destination, so I spent the journey looking at the scenery and trying to stay warm while thinking back on what I’d experienced on my trips with Michael. During our evening meals Calliope entertained us by reciting
snippets from Homer’s lost tales. You can’t imagine how many times I wished for a tape recorder. Oh, well. If wishes were fishes, etc.

I made a pleasant discovery during this part of our trip. The first evening out from the tor when we were setting up camp, I found an unused composition book along with a few pencils in one of my saddlebags. When I asked Calliope where they’d come from she just gave me one of their trademarked enigmatic muse smiles. After a moment I came up with the idea to begin documenting this magical mystery tour for posterity.

Calliope had been correct in her earlier comment about my riding skills, by the way. By the afternoon of the second day I realized that I almost felt comfortable on horseback, or at least was no longer lame after a few hours.

On the morning of the third day I began to hear a roaring sound in the distance, which grew louder as we traveled. Within an hour the road led into a clearing where this little mystery was quickly resolved. The river at this point dropped about twenty meters over a sheer cliff, and what I’d been hearing as we approached was the sound of a waterfall near the road. We took a few minutes to enjoy the scene.

“Is it not beautiful?” Urania asked.

“What did you say?” I yelled. “I can’t hear you.”

“We can’t talk here,” Calliope called out. “It’s too loud.”

“What?” I pointed to the waterfall. “It’s too loud. We can’t talk here.”

“She said – oh, never mind,” Urania said, shaking her head. “We should go.”

“What?”
In response the muses turned their horses away from the waterfall to lead the way up a series of switchbacks that wound to the top of the cliff. Our little exchange near the waterfall had me chuckling to myself as we rode up the path.

When we reached the summit I saw that we were at the foot of a long valley. Farms dotted the landscape as we continued along, and just after lunchtime we entered a small village. A small group of the locals were waiting for us near the center of town.

We dismounted in front of a building with a sign bearing a picture of a black rabbit with a feral look in its eyes. While Urania gave instructions to the stable boy for the care of our horses, I turned to Calliope. “Let me guess. The Wild Hare?”

“Very good.” She smiled, then held up a hand as I opened my mouth. “Now don’t ruin it by getting all pedantic on me about the need for visual symbols when most of the populace is illiterate. Who do you think came up with the idea?” Just before turning to enter the inn she punched me gently on the arm. “Don’t teach your grandmother to suck eggs.”

I chuckled to myself at the idea of her as a grandmother. In my opinion both of the sisters barely looked old enough to get into a campus town bar without an ID.

“So what’s the plan, Stan?” I asked as I followed the muses inside. “Does Michael have a brother for us to visit here?”

Urania frowned. “Who is Stan?”

“He is being facetious again, Una. There is no Stan,” Calliope explained with a shake of her head. She turned to look at me. “But you are not far off in your guess. We are here for you to meet another with the blood of Olympus in his veins.”

“And who would that be?”
“Me, if you not be wanting someone else,” said a deep voice from off to our left, and I turned to look. The ground floor of the inn was laid out as I had expected, with a large fireplace on one wall, and seating provided at half a dozen wooden trestle tables. A large man sitting near the fire waved us over.

“I don’t get up so easy these days,” he said as we approached. “This cold raises heck with bad knees. Fire helps some, hey?”

What cold, I wondered. It’s gotta be over eighty degrees in here.

Urania and Calliope both bowed before taking a seat. “Ian, meet Hephaestus, artificer to the gods.”

I followed the muses lead and bent forward from the waist before taking his offered hand. “It’s an honor to meet you, sir.” Hephaestus had the upper body of an NFL linebacker, but I noticed that his legs were as thin as a boy’s. I couldn’t tell what color his hair was. It looked black at first glance, but streaks of red and gold glinted when the light from the fire hit it just so. Scars from old burns covered his cheeks, giving his face a gravel road texture.

“Don’t call me sir, I work for living,” he replied, a grin playing across his pocked face. “So you’re my nieces’ latest project, hey? What’s your field?”

“Field? Well,” I said with a shrug. “I’m a professor of instructional technology back home.”

He leaned forward, the glow of the fire reflected in his eyes. “Technology, hey? What kind? Does it click? Does it clank? Does it – move?”

“I, uh, well.” I looked to the sisters for support but they just smiled. No help there.

“I use computers, mostly.”
“Computers? The devil you say. Ha!” Hephaestus turned suddenly and placed a hand on Urania’s knee. “Computers. That’s it, isn’t it? That’s why you’ve brought him to me.”

Urania calmly reached down and removed his calloused hand. “Yes, Uncle. We thought Ian should see your computer.”

“You have a computer?” I asked in confusion.

“Ah, hey, you bet I do,” he nodded vigorously. “Built it myself. Big as field. Big as house.”

*Boy-howdy. This guy must own a whole block in crazy town.* I couldn’t agree more, I thought in response. Before I could blink the immortal blacksmith turned to grab my arm. Pain shot straight up to my shoulder.

“Crazy, hey? Crazy, yes, but who isn’t, hey?” He burst out laughing. “Don’t need be crazy to live here, but it helps, hey?”

“Uncle, please be gentle. Ian is our guest, and mortal,” Urania said, placing her hand over his. “He teaches children, just as you do.”

Hephaestus closed his eyes and took a few deep breaths, then opened them again.

“You teach with computers, hey, like me?” he asked after a moment, releasing his grip on my arm.

“Yes, sir, I mean, yes Mr. Hephaestus,” I replied hastily.

“Let me help you up, Uncle, and you can show Ian your computer,” Urania said.

“You want to see?” He grinned. “Thank you. I would like that.”
Calliope reached over next to the fireplace where a pair of crutches rested against the wall, the forearm kind with arm braces. While Urania supported her uncle’s weight, Calliope handed the crutches to Hephaestus who slipped his arms into them with a sigh.

“One day I’ll get around to building something better. One day, hey? But for now, let’s see computer. Come, it is by river. Has to be, you’ll see.”

“We’ll meet you there in a minute,” Calliope said. “You two go ahead.” Urania walked next to her uncle as he hobbled out of the inn.

I turned to Calliope. “I assume you’re gonna warn me to watch out for wacky old Uncle Hephaestus.”

Calliope shook her head. “No, Ian. What I want is for you to be patient with him. Cut him some slack, as they say in your world.”

I frowned as I examined the latest addition to my collection of bruises. “Okay, sure. Whatever you’d like. But… what’s wrong with him? He doesn’t seem to be all there, if you know what I mean.”

“He is broken,” she replied. “His body was broken when Zeus threw him from the heavens. His heart was broken when his wife Aphrodite put cuckold’s horns on him. And this led to his mind being broken, as you witnessed a moment ago.”

“His mind was broken just from his wife cheating on him?” I asked. “You gods aren’t as tough as you look.”

Calliope gave me a look and, using her muse voice, began to recite:

_**Eros, who is Love, handsomest**_

_Among all the immortals,_

_Who breaks the limbs’ strength,_
Who in all gods, in all human beings
Overpowers the intelligence in the breast,
And all their shrewd planning.\(^2\)

I found myself shivering as she delivered the final line. “Um, yeah. You know, if he’s in that bad of shape, I can’t believe you folks let him work with children.”

Calliope shook her head. “The innkeeper should not have allowed Hephaestus to sit alone by the fire. It reminds him of long-ago days at the forge in his cave on Olympus, and all that he has lost.” She turned toward the exit. “Apollo and some of my sisters found him in his wandering and made a place for him here. He is much improved from what he was, believe me. And he would never harm a child. They are more precious to him than the most intricate device.”

I looked over at her as we walked. “He sure got exited when I mentioned technology.”

She nodded. “Technology is like food and drink for him. He is the ultimate artisan, and brilliantly innovative. Wait until you see his computer.”

“He’s really built a computer?” I asked incredulously. “Exactly how many bear skins and stone knives did it take to complete that project?”

“Bear skins? I don’t understand.” Calliope was obviously confused by my reference to the classic *Star Trek* episode where Spock was credulous of his ability to fix a tricorder using only the technology available on Earth in the 1930’s.

“No disrespect to your uncle, but what I mean is that his building a computer seems rather incongruous, considering the local level of technology.”

Calliope gave me a smile. “As Hephaestus said, you’ll see.”
When we reached the river I beheld what looked like a plumber's nightmare. Water pipes snaked across an area the size of a basketball court, running through numerous valves and water wheels. Holding tanks dotted the landscape, varying in size from about a liter to what I guessed to be many kiloliters. I was stunned, to say the least. Woz would love to see this.

“Well, what do you think?” Hephaestus asked. “It is something, hey?”

*It certainly is. It’s – something.* Urania elbowed me in the ribs. “Be nice,” she said *sotto voce.* Doggone mind-reading muses. “So, um, how does it work? What are all the parts of your computer?” I asked, more as a conversation starter than anything else, as I massaged my side.

“Computer has many parts. Many, many parts. There, see, that is Central Processing Unit, where real work is done.” Hephaestus pointed to the densest cluster of pipes, valves, and waterwheels. “And over there are memory areas.”

I stared at the tangle of wooden pipes. “Memory areas?”

“Both long-term and short-term,” he said with a nod. “Long term memory I call read-only memory, or ROM. It contains instructions and data that computer can only read and not change. Like carvings in iron, hey? Held in ROM are instructions that tell computer what to do when it starts up. It also contains interpreter, which is special program that tells computer how to perform instructions we give it.”

I noticed that his grammar improved as he warmed to his topic, and he stood a little straighter. Calliope was right; Hephaestus was growing stronger from just talking about technology. However, his use of the definite and indefinite article was still rather hit and miss.
“Short-term memory is called random-access memory, or RAM,” he continued.

“RAM contains instructions and data that are changeable by the computer, but what is in RAM is emptied when machine is shut off.”

I was impressed; this was starting to sound just like an electronic computer back home.3 “What about input and output? How do you tell your computer what to do?”

“This is input area over here. See grids of pipes and valves?” He pointed to a number of vertical ladder-like assemblies plugged into a series of pipes that ran horizontally into the heart of the computer. “These are input arrays. Each array, or card, is made up of eight columns by eighty rows of pipes. At each intersection of pipes there is valve. When valve is open water can pass though it. Closed valves block flow of water. By setting valves in certain combinations input is given to computer, either instructions or data.”

I shook my head. “I’m a little confused. I still don’t see how these cards, as you call them,” I waved a hand at the array of pipes and valves, “provide input to the computer.”

“Let’s take it step by step, hey?” Hephaestus pointed with one of his crutches. “We call each of these valves a bit, short for binary digit. Open valves are considered ‘on’, and closed ones ‘off’. Each group of eight we call a byte.”

“Bits and bytes, huh? You’ve been looking at computers from my world, haven’t you?”

He turned to me with a grin. “Many years. Been watching you make machines for many thousands of years. Used to live there in long ago, hey?”

Let’s not bring up any bad memories, I decided quickly. “So, by using the on or off states to represent binary values, you perform binary logic operations, right?”
Hephaestus nodded. “That is correct. Using eight bits, computer can represent in binary any decimal value from 0 to 255.” He gave me a mischievous look. “You said you are professor of technology, hey?”

“Educational technology, yeah,” I replied.

He pointed to one of the rows of bits. “Look at byte here, hey? See on and off settings? This byte is set to binary value of 10110011. Tell me, human professor, what is corresponding decimal value?”

“Well, let’s see, it’s been a while since I’ve done this… to convert binary to decimal you start by adding the values from right to left, and each place is a power of two, starting with zero. Two to the zero power is one, two to the first power is two, two to the second is four, etc. That means 10110011 is 1 + 2 + 0 + 0 + 16 + 32 + 0 + 128, which adds up to, um, 179.” I shook my head. “This was a bit of fun, but what’s the point of reviewing my math skills?”

“Words made with binary numbers are good for computer, on and off easy for them, but take too much time for people to read. You just prove that. People read words made of letters and decimal numbers. Alphabet, hey?” He chuckled. “Good Greek word, alphabet.”

I looked again at the row of bits. “In my world we use special codes to translate numerical values into the letters of the alphabet, the numbers zero through nine, and special characters such as arithmetic operators, parentheses, commas, periods, and so forth.”

“We do same.” He pointed to one of the cards. “See first four bytes here? They spell out initial instruction in this program. One byte, one character. Now, in our code decimal values 65 to 90 represent upper case letters of alphabet, A = 65, B = 66, and so forth. You follow?”
I responded with a nod and he went on. “To make easy for you, I tell you that first four bytes are 76, 79, 65, and 68. What is word they spell?”

Counting on my fingers from A = 65, I translated the four characters. “The first instruction is ‘LOAD’, right?”

“Right again, professor man. And look here. This is last step.” He pointed again to the four bytes. “Computer can only understand binary, remember? So we convert decimal numbers to 01001100, 01001111, 01000001, and 01000100.”

“Pretty neat,” I commented. “I never would have guessed you could do all this with pipes and cups.”

“I made armor for Zeus himself,” Hephaestus replied proudly. “This is little nothing.”

“It is quite the machine, Uncle,” Calliope interjected before he got too wound up. “But where is the output? How do you get results from this computer?”

“Output cards on other side of the computer. Come see.” The four of us walked the thirty meters to the other side of Hephaestus’ contraption. “Output cards different from input cards. When the computer is started, all output bits are off. During execution of program computer displays results by pressure turning bits from off to on where needed. What ends up on output cards can be copied onto paper, or output cards can be removed from machine and saved.”

“This is pretty cool,” I commented. Hephaestus frowned. “Cool is a compliment in my world. Um, you said something about a central processing unit, the CPU?”

“CPU is here in middle. Everything goes through it.” We walked back toward the middle. “CPU full of special RAM, only used by CPU. Program instructions and data come
in,” he pointed at the input cards, “flow through CPU, and come out there,” pointing at the output arrays.

To me, the CPU looked like a nest built by giant sparrows. Pipes, cups, and valves in a big tangled ball. “This looks kinda complicated. How do you keep everything synchronized?”

“Wheels within wheels. Wheels go round and round. Look there.” Hephaestus raised one of his canes to point at a series of water-wheel devices near the CPU. Attached to the various wheels were many gears and levers. “This is machine within machine. It is how computer is synchronized.”

“With all the gears and levers, it looks like the inside of a clock.”

He nodded. “It is clock of computer. When it turns, it coordinates functions by making sure all parts work together. I show you now, hey?”

Hephaestus took us around to the river-side edge of the entire apparatus. “Water is pumped from river into large tank; giving us motive force to run machine. I pull big lever here, water flows from tank into network of pipes to clock. See clock wheels? Round and round. Each turn wheels make, water moves through computer.”

As the water computer got going I finally understood what Hephaestus was talking about when we first met. This machine certainly did click, clank, and move – maybe he wasn’t so crazy after all. Just a little excitable, as witnessed by the way he was waving his crutches around to point out what was going on right now.

“Information flows with water. Goes from input here, yes, to CPU, to output array.” He turned with a broad grin to where I stood with the muses. “Is genius, hey?”
“Is genius,” I replied with a smile. “I’m impressed.” He let the machine run for another minute before pushing the power lever back into place.

“I’ve got another question, Hephaestus,” I stated.

“Anything, you ask away.”

“I’m not sure how to put this… I’m amazed at your inventiveness in overcoming your lack of electricity to build your computer, but just what do you do with it?” I asked sheepishly.

He frowned. “I just show you what it does. Do I need show you again? Human professor maybe not so smart as I thought.”

“I don’t think that’s what Ian meant, Uncle,” Calliope interjected. “He wants to know what you use the computer for.”

His face lit up. “What it used for? Told you earlier. I have new job here in this village. Am teacher now, hey?”

Before he could continue some of the townspeople approached us. “Excuse us, Lord Hephaestus. If you’re done with your demonstration, it is time for the afternoon group to work with the machine. Is that a problem?” one of them asked.

“You bring students, I teach them, hey?” he replied with a vigorous nod.

As we had been talking a group of about twenty children had gathered near the computer. With Hephaestus lending them a hand, the students now began arranging valves on the input cards in accordance with written notes they carried, clearing the settings on the output cards, and performing other tasks to prepare the machine for use. While they worked Calliope began to explain to me the purpose behind the children’s activities.
“In conventional school environments in your culture, teachers introduce students to a subject, provide them with some facts and procedures, and test them for retention. Students are given few opportunities to relate what they are learning to a real-life situation in a way that demonstrates their understanding of the subject.” Calliope pointed in the direction of the children working on the computer. “Students need to be able to use their knowledge. Real understanding comes from making connections between things; we facilitate that by allowing the children to make connections between principles and practice.”

Where have I heard something like that before, I wondered, then smiled as I remembered my chat with Bill back at Dugan’s. “I think I see. It’s like a friend once told me: you’re not just giving them a fish so they can be fed for a day, you’re teaching them how to fish so they can be fed for a lifetime.”

“Exactly,” Calliope agreed. “The children are encouraged to try things, just to see how they turn out. They then correct and adjust in order to achieve the desired outcome. This village is trying to create a learning environment that supports and stimulates the students by allowing them to designate their own avenues of investigation and solve the problems that arise. The children are creating their own understanding by working with the computer. In other words, they learn by doing.”

I watched the children as they scurried around the machine, laughing and calling out to each other as they worked. With the sun shining down and the sounds of the children near the bank of the river, it seemed like an educational idyll. “This is like nothing I’ve ever seen. Look at them; they’re actually having fun learning. I wonder why more teachers don’t do something like this.”
Calliope shook her head. “It is my experience that in many schools, teachers are viewed as merely technicians, whose job on the educational assembly line is to break knowledge up into bite-size chunks and feed that knowledge to the students.” Hephaestus set the machine into motion about then, so we backed off a few meters in order to hear each other speak.

“Think of what Michael showed you at the automobile factory,” Calliope continued when we were far enough away. “Change, if it occurs at all, is something that happens slowly over time so it can be carefully assimilated into the system. The bright spot is that those teachers who advocate and implement improved teaching methods are often moved into administrative positions. There they can influence school policies on curriculum and teaching procedures.”

“You make it sound like schools are designed to resist change – what if the system sucks them in once they are in a position to change it?” I asked.

“That is a danger,” Calliope replied with a nod. “The structure of most schools, with their regimented schedule and testing-dependent curriculum, is designed for the convenience of the system and not for the needs of the students. As teachers gain more experience they internalize this structure and help to reinforce the status quo. Wanting to effect change can cause an internal struggle in the teacher between following the laid-down procedures and their desire to help students fall in love with learning.”

As we spoke I continued to watch the children work. “These students certainly seem to have fallen in love with what they’re doing.” Oh my stars and garters. Don’t tell me you’re starting to buy into the Hallmark philosophy. And why not, I replied to my little
voice. This certainly doesn’t look like any class I’ve ever taught. *That’s because they’re awake*, was the sarcastic reply.

“That’s partially because the learning relationship is reversed,” she replied.

“What do mean, reversed?”

“Exactly that. Very often when children work with computers the computer is used to provide lessons of appropriate levels of difficulty, to provide feedback, and to dispense information. In a way, the computer controls the child.”

“Sure, I’ve seen lots of computer-assisted courses that work like that,” I agreed with a nod.

“What’s different here is that the children are telling the computer what to do. And in programming the computer, they embark on an exploration about how they themselves think.”

“They think about thinking? How does that happen?”

Urania gave me a look. “You know what the term ‘debugging’ means.”

“Sure. It means to go through a computer program finding and fixing errors, or ‘bugs’ as they are known.”

She arched an eyebrow. “I was not asking a question.”

“Huh? But you said… oh.”

“What my sister was getting at is that in most educational environments students are evaluated on whether they solved a problem correctly or not,” Calliope said. “Do they know how to solve a quadratic equation, for example. Learning to program a computer isn’t like that. It isn’t a question of getting a problem right or wrong, but one of learning to fix a problem, or determining whether the problem can be fixed.”
“I think I get what you’re talking about now,” I said as I looked over at where the children were working. “By learning how to ‘debug’ programs children are learning problem-solving skills that they can use in other parts of their lives. That’s what you meant by them thinking about how to think.”

The computer had completed running the children’s program, and they were busily examining the output and comparing it to their notes. While they were doing this, Hephaestus stood to one side watching their activity and answering the occasional question.

“So,” I wondered aloud, “what subject are the children working on today?”

“They’ve been tracking the harvest yields of various types of grain and correlating the data against soil conditions,” Calliope answered. “They’re hoping to help farmers in the area increase crop production through the use of appropriate fertilizers and irrigation methods.”

I turned to her with a bemused expression. “Um, wow. Crop production? I was expecting you to say they were studying math or something like that.”

“What they grow in this valley feeds many of the surrounding communities,” Urania replied. “If we can help farmers get more out of their fields it benefits everyone.”

Calliope and Urania were both smiling at my reaction. “I did say we were helping the students apply what they were learning to real-life situations,” Calliope said. “And you can’t get more real-life than helping feed your neighbors.”

“No, I guess not.”

“And in the process, the children are learning mathematics, problem-solving skills, meteorology, agronomy, business – and they’re having fun doing it.”

“They certainly appear to be.” I looked over at Urania. “So, muse of science, are you working with the children as their crop expert?”
“No, not really, although I do have some experience in that area helping your ancestors after the great flood,” she said with a small upturn at the corners of her mouth. “This machine, and more importantly what the children are doing with it, represents a revolutionary new idea in farm practice for the people of this valley. My involvement is in communicating the benefits of this new practice and helping to diffuse this innovation throughout their society.”

With a ‘be right back,’ Calliope took that moment to leave us and walk to where Hephaestus was talking to some of his students. Urania pointed toward the children, who I saw were now preparing the machine for another run. “The information the students are processing is meaningless if the farmers do not become familiar with it, examine its benefits, and then adopt the new practices suggested by the data.”

“How do you go about doing that?” I asked.

“The first step will be to talk to the farmers themselves. We will be doing that tomorrow.” Urania shrugged. “Farmers are like any other group or organization: within the group there are those who are open to change, those who resist change, and those who fall in between the two extremes.”

“I don’t know, farmers can be a special breed,” I commented, thinking back to summer afternoons in my teens spent putting up hay for our neighbors. “Getting them to try something new could be a challenge.”

“I am no stranger to a challenge,” Urania said, gently punching me in the arm. “We did take on the task of helping you.”

“Hey, now,” I said with a chuckle. “So, what happens tomorrow?”
“First, I will inform them that the innovation exists and what it is for. Second, I will present data that will show them that adopting this innovation would be to their benefit. Following that will be their decision to adopt or reject the idea of adopting the innovation, based on the first two steps. Some of the farmers will then put the innovation into practice. And lastly is the confirmation that they were right to adopt.” Urania shook her head. “People are social animals. They need reinforcement from others that the decision they made to adopt was the right one.”

“I’m guessing that attending your presentation is part of my education as well,” I commented.

“Educating you? Stranger things have happened.” Urania grew serious. “Ian, you have been shown much about the dangers of misusing technology. It is now my turn to show you what benefits the proper usage can bring.”

The children’s machine was shuddering back into life as Calliope rejoined us. “I’ve spoken to our uncle. He will be joining us on our journey upriver tomorrow,” she said over the growing din. “I’m going back to the inn to rest for a time. This noise is starting to give me a headache.”

“I will join you,” Urania said. “The noise is more than I care for as well. Also, I would like to prepare some notes for my presentation. Ian, what about you?”

I shook my head. “I think I’ll hang out here for a while. I haven’t had much time to myself since we started this little trip, and I’d like to see what the kids come up with.”

“Please try to not fall in the river while we are away,” Urania said with a wry smile, and they turned to walk back into the village. I chuckled to myself for a moment before returning my attention to the children and their machine.
1 (page 179) Hephaestus is the master artisan to the Olympian gods, “who is skilled in crafts more than all the sons of heaven.” In Grant, (1962), p 89.

2 (page 182) Section of Hesiod’s poem describing Eros in Grant (1962), p 97.

3 (page 184) I loosely modeled the functioning of their water computer on the 6502 microprocessor used in the Apple II computer.

4 (page 189) “The learning of a dead subject requires a technical act of carving the knowledge into teachable bites so that they can be fed to the students one at a time by a teacher, and this leads straight into the traditional paraphernalia of curriculum, hierarchy, and control.” In Seymour Papert’s The Children’s Machine, (1993), p 65.

5 (page 189) “Learning-in-use liberates the students to learn in a personal way, and this in turn liberates teachers to offer their students something more personal and more rewarding for both sides.” In Papert (1993), p 65.

6 (page 190) “School tries to make the teacher into a technician; in most cases a sense of self resists, though in many the teacher will have internalized School’s concept of teaching.” In Papert (1993), p 55.

7 (page 190) “Real teachers have mixed positions. Everyone who has grown up in our society has internalized something of School’s way and teachers are no exception… The result is that when they try to implement change they often undo in subtle ways with the left hand what they have wrought with the right.” In Papert (1993), p 79-81.


9 (page 191) “But thinking about learning by analogy with developing a program is a powerful and accessible way to get started on becoming more articulate about one’s debugging strategies and more deliberate about improving them.” In Mindstorms, (1980), p 26.

10 (page 194) Description of the innovation-decision process in Rogers (2003), p 169.
CHAPTER 8

Our journey upriver to the farming village the next day was nothing to write home about – if you consider spending a few hours passing through some of the most beautiful country outside of a national park boring. Many of the trees along the river were still colored in the reds and golds of autumn, and I spotted a few deer that were grazing in the harvested fields. Even my horse seemed to be in a good mood for once, as it more than once playfully nickered at the donkey drawing the covered tinker’s cart Hephaestus was driving.

As we approached the village the muses began to appear anxious for our trip to end. The reason soon became apparent when we arrived. Calliope and Urania leapt from their horses to greet with hugs the tall smiling woman waiting for them near the edge of town. Hephaestus in his cart continued on with a wave.

“Pyrrha, is good to see you again,” said Urania.

“And you as well,” Pyrrha replied warmly. “I was looking forward to spending time with you at the tor, but oft-times duty calls, as you well know.” She turned toward me as I dismounted. “And you must be Ian. Michael has told me all about you.”

He has? I thought before remembering their telepathy. I reached out to shake her hand but she sidestepped and encompassed me in a hug. “Um, nice to meet you,” I said awkwardly as I realized that she was at least twenty centimeters taller than me. I tried to picture her and Michael standing together and was amused by the image, her tall and slender frame next to his short and solid one.

We took our saddlebags from the horses and a boy led them away to a barn for feeding and a rubdown. “This is a rather fortunate turn of events where Ian’s education is
concerned,” Pyrrha said to Calliope as we walked along the cobbled street. “The local farmers have called a town meeting to debate whether or not to accept the new technology brought by Hephaestus and Urania. They invited me to sit in and I’ve received permission for you to attend as well.”

“Why would they have a problem with...?” I started to ask before thinking about my travels with Michael. “Oh. They’re concerned about the possible consequences.”

Pyrrha gave me a gentle push on the shoulder, sending me sideways a step. “Michael did say that you have a tendency to open your mouth before engaging your brain.”

I regained my balance and smiled up at her. “I’m going to spend some time in the gym when I get home. All the attention I’ve received from you immortals on this trip has me feeling like the proverbial ninety-eight pound weakling.”

The ladies chuckled at my comment and Calliope reached over to squeeze my bicep. “More like a ninety-six pounder, if you ask me.”

“Yeah, yeah, pick on the human,” I muttered in jest as the ladies proceeded to lay on more friendly taunts about our disparity in strength.

A few minutes later we reached the center of town, where the townsfolk were queuing up to enter an open amphitheater. Broad steps descended past granite seats laid in concentric half-circles to an open dais at the bottom of the bowl. On the platform a few men and women stood talking next to a long stone table. I guessed that these people would be the leaders of this assembly.

The muses were welcomed by some of the townsfolk as we walked toward seats in the back of the bowl. As we settled in I saw that where we were sitting would give us a good
view of the proceedings. Pyrrha, Urania, and Hephaestus continued on down the steps to sit at the front table with the meeting leaders.

One of the men seated at the front picked up a wooden mallet and rapped it on the table’s stone surface. “Now that all the principals involved are here, let us call this assembly to order.” The chatter in the audience died away. “On this day my wife and I will perform the duties of She and He Who Speak For Many. Are there any objections?”

He waited a moment after this proclamation for any response from the crowd before continuing. “We thank you for your trust.” He-Who-Speaks cleared his throat then continued, “Today we welcome the presence of two of the Bright Ladies,” Calliope and Urania stood momentarily in acknowledgement, “the Lady Pyrrha,” who nodded toward the speaker, “and Lord Hephaestus. The assembly recognizes the Lady Urania.”

Urania stood and, after thanking the community for allowing her to speak, proceeded to share with them the story of the water computer. Occasionally she called on Hephaestus to highlight the educational value of the crop reports developed by the children. At the conclusion of her presentation Urania thanked them again and took her seat.

“You are both welcome,” He-Who-Speaks replied. “I declare this portion of the assembly to be closed.” He nodded to the woman sitting next to him and set down his gavel. She gave a small nod in return as she picked up its twin from in front of her.

“At this time I open the floor for discussion,” She-Who-Speaks announced. One of the women in the audience raised a hand. The chairwoman pointed to her with the gavel. “You may speak, Mistress Erin.”

At the lead table Urania suddenly sat up straight in her chair. “What’s wrong?” I whispered to Calliope. “Who is that woman?”
“That is not a woman,” Calliope quietly replied as Urania remained frozen in her seat. “And her name isn’t Erin. That is our step-sister Eris; the goddess of strife and discord.”

“My friends, thank you. Thank you for allowing me the opportunity to share my humble thoughts with you today.” I looked back to the front as Erin/Eris stood and, shaking loose long curly hair as dark as night that fell past her waist, began addressing the crowd in a clear contralto voice. “Our visitors would have us believe that the issue before us today is whether or not their innovation can help us to raise more crops. I am willing to accept that as a given – although ultimately, irrelevant. We already grow enough food for our needs with some left over to sell to our neighbors.” She paused for a moment to survey the crowd. “No, the issue today concerns how this new technology will utterly destroy the society we have built in this valley for generations.”

The room erupted in noise and shouts, with some people supporting Eris’ statement and others deriding her. Pyrrha sat back and looked at the goddess of discord through narrowed eyes. She-Who-Speaks banged her gavel and called for order until the room returned to silence. “Mistress Erin, please explain yourself.”

“The technology I speak of is their new educational method,” she said while gesturing toward Hephaestus and Urania. “Education is not a tangible object that you can hold or give away to another person; it is a technique, a process if you will.” I found myself nodding in agreement with her before Calliope placed a hand on my forearm and gripped it tightly.

“A process,” she repeated for emphasis, “that people perform under the guidance of parents, teachers, and other mentors. Education is the mechanism by which a society reproduces its values, and the most important aspect of this technique is the forced orientation toward it. It is a social force directed toward a social end.”
Eris paused to look around a moment before continuing. “We as a society have a vested interest in seeing that future generations get an education; an education that serves the needs of our society and that is seen as the right education. That is because education is a technique that functions to maintain the status quo.”

The woman seated next to Eris stopped knitting and called out, “Just the man keeping us down, eh sister?”

“As you say, Madame Rhamnousia,” Eris said in agreement.

“That is not good either,” Calliope said in a soft voice. “That is Rhamnousia, one of the aspects of Nemesis.”

“Nemesis? The goddess of divine judgment?” I whispered back.

Calliope nodded. “Her role is to punish those who commit the sin of hubris, or over-reaching pride.”

While we were whispering, Eris had resumed addressing the audience. “Children are educated to become precisely what society expects of them. They must have social consciences that allow them to strive for the same ends as society sets for itself. Education has always had this goal in mind. Without education, whether formal or informal, the values of each generation would be lost when that generation died.”

“Social conformism must be impressed upon the child: he must be adapted to his society; and he must not impair its development. His integration into the body social must be assured with the least possible friction. Individualism is sacrificed at the altar of efficiency.”

As Eris spoke the noise level in the room slowly began to creep back up. She started shouting to be heard over the tumult. “Education is a technique that adapts people, not a
technique that people adapt to their own use. And the use of technology in education is one way of making that technique more efficient."5

Throughout the rising tide of cacophony the chairwoman had been trying vainly to reestablish some semblance of order. Finally at the front table Urania stood to say, “BE STILL.” in a voice that I felt as much with my bones as my ears. The din immediately ceased.

Eris crossed her arms. With a small smile she looked knowingly at Urania and said, “What they have brought us today is not a technique for improving education, but a part of the mechanism for training children to be in thrall to a technological society. Education will no longer be an unpredictable and exciting adventure in human enlightenment, but an exercise in conformity and an apprenticeship to whatever gadgetry is useful in a technical world.”6 Urania’s face flushed with embarrassment and she abruptly sat down.

Oh my great Aunt Sally, she dissed a muse. That’s gotta leave a mark.

With a smirk of triumph Eris concluded, “Only two possibilities are left to us: either we remain what we are, and are at last tossed on the social rubbish heap; or we adapt ourselves to the new technological organism. And that, ladies and gentlemen, is what will destroy our society beyond repair.” Almost as if she expected a round of applause, she waited a moment before sitting down.

The buzz in the room began to grow again. As I looked around, I saw Urania sitting with a look of shock on her face, as if in her wildest dreams she had not expected this sort of response to her presentation. Pyrrha whispered something in her ear then leaned forward.

“If I may, Madam Chairwoman,” she said.

“By all means. The chair recognizes the Lady Pyrrha.”
“We are here today to talk about the use of technology in education. Technology has always been a part of education,” Pyrrha began, “from students taking notes by writing on clay tablets up to today’s discussion of computers. Each technological advance has had its proponents who believe that the latest invention will be one that will change the face of society for the better.” She then gestured toward where the goddess of strife sat with folded arms. “And each innovation has its accompanying critics who question the value of this purported change.”

“So, with what options are you left? Is Mistress – Erin – correct that your children are doomed to becoming serfs that serve the needs of a technological society?” She looked toward where I sat at the back of the theater. “To steal a phrase from a cultural icon from the outside world, Captain James T. Kirk, I don’t believe in the no-win scenario.” I snorted in amusement. Bill Shatner would be so proud.

“You are all aware of the story of Prometheus, whose theft of knowledge led to millennia of sorrow for humanity,” she began. Many people in the audience nodded knowingly at their neighbors, and some looked askance at Hephaestus. “However, some of you here today may not know the story of my family. I am the daughter of Pandora and Epimetheus, the brother of Prometheus.” That set the tongues to wagging again, but the chairwoman was quickly able to restore order and Pyrrha continued her tale.

“Af…
saying that this was my mother’s dowry from Zeus. One day when Pandora was alone she became curious and opened the box. Out flew Hope.”

“That is not so,” cried Eris, jumping to her feet and pointing at Pyrrha. “It was the woes of the world that were released by your accursed mother.”

Pyrrha calmly shook her head. “The woes of the world have been with us always, my friend. Those who think otherwise have been taken in by the whispered gossip told by Prometheus after his release in an effort to ameliorate his legend.” Eris sat back down, muttering to herself.

“As I say, when the box was opened out flew Hope. In a panic my mother searched her house from top to bottom for Zeus’ gift. When my father returned home he asked Pandora what distressed her so. She sorrowfully explained what had happened and apologized for their loss. In response to her tale Epimetheus merely smiled and nodded toward his wife’s heart. When she followed his gaze she was amazed to see that Hope had been there all along.”

Pyrrha paused for a moment. “My parent’s gift from Zeus was a message to all of us. I tell you this tale to remind you of something that we often forget: Hope may often appear to have flown away, but it can always be found if we simply take a moment to look for it.”

She took a sip of water before continuing. “Hope is itself a form of technology, a way of empowering the individual to resist overwhelming odds. Technology has a powerful bias toward amplifying personal autonomy and individual problem solving. That is one of technology’s greatest strengths. It is also its greatest weakness.”

“When we consider the use of technology in education, we must bear in mind that any problems that education cannot solve without technology, education cannot solve with it. I
personally believe that the use of this new device, this ‘computer’, in education should be a means to an end, not simply means in and of themselves. This end, as stated by our visitors, is the improvement of education. My addition to their argument is that I believe technology can be adapted to the use of humanity, not humanity to the use of technology. Having some degree of power is infinitely preferable to being completely at the mercy of others.” Pyrrha smiled at Eris. “And that is what gives us hope.”

“Bah.” The sweet persuasive tone of voice from earlier turned to a growl, Eris stood up again to rebut Pyrrha. “One thing here is clear to me: for you people, technology exists because it is technology. You do things because you can, not because you should. Your technological golden age will be because you will it to be. Any other answer is superfluous.”

At this point another individual spoke. “May I add something to Mistress Erin’s rather – impassioned – argument?” he asked.

The chairman looked to Pyrrha. “I am done,” she said. “Thank you.”

“The chair recognizes our friend, the teacher Chiron.”

“Thank you,” the person identified as Chiron said as he slowly rose. For a second I confusedly thought he was sitting on a horse. Then I realized he was a horse – at least from the waist down. Just when I thought I’d seen everything on this trip, along comes a little something new.

He cleared his throat before he began. “As you all know, I have been an educator for a very, very long time.” A few of the villagers chuckled at his comment. “Since leaving the outside world and coming to this community some years back, I have listened to quite a number of visitors who seek to improve the education of our youth by improving what are
called ‘learning technologies.’ As Mistress Erin said, the question before us today is to consider the impact this innovation in educational technology will have on our society. Lady Urania, please tell me: why do you embrace this new technology?”

Urania looked caught off guard, apparently not expecting to be put on the hot seat. “Because it makes learning more efficient and more interesting,” she answered after a moment.

“Her answer is: to make learning more efficient and more interesting.” Chiron looked around. “Such an answer is considered entirely adequate to those who believe in a technological society, as efficiency and interest stand on their own and need no justification. It must be pointed out, however, that this answer does not address the question ‘what is learning for?’”

His comment reminded me of Michael’s first question to me about why I teach technology. I felt like I had started to reach an answer for Michael, but Chiron had raised an issue that I hadn’t given much thought to. I made a mental note to see if Pyrrha could introduce me to this guy.

I turned my attention back to what Chiron was saying. “Efficiency and interest is a technical answer; an answer about means, not ends, and it offers no pathway to a consideration of educational philosophy. Indeed, it blocks the way to such a consideration by beginning with the question of how we should proceed rather than with the question of why. It is probably not necessary to say that, by definition, there can be no education philosophy that does not address what learning is for.” He looked to the chairwoman before sitting back down. “Thank you for allowing my contribution.”
“Thank you, Chiron,” She-Who-Speaks replied. “You have raised a valuable point. Does anyone else have something to add?” She looked around the room for a minute, but there were no takers.

“Very well, then. The Lady Urania and Lord Hephaestus have told us of the advantages we could gain from using this new educational tool. Our friend Chiron has reminded us to look below the surface when asking why we should incorporate this new piece of educational technology into our society. And Mistress Erin feels that it is already too late to ask that question: our society is doomed simply because the technology exists.” She looked to the side at He-Who-Speaks, who picked up his gavel again. “Let us reflect this evening on what we have heard here today. We will convene again tomorrow at the first hour past noon.” Together they rapped their mallets on the table three times before announcing, “We declare this meeting adjourned.”

As the people filed out of the amphitheater I waited with Calliope. Pyrrha and Urania spoke for a moment with Hephaestus before joining us.

“So, what happens now?” I asked.

“They will continue to meet and discuss the issue until they have arrived at a decision,” Pyrrha replied. “It may take them all winter.”

“Are we coming back for tomorrow’s session?”

Urania shook her head. “Hephaestus is staying until there are no more questions for him. We are leaving tomorrow after breakfast.”

“I will watch over Lord Hephaestus while he is here, and accompany him on the first leg of my journey home,” Pyrrha added.
I turned to Pyrrha. “If it’s possible, I’d like to meet Mr., um, Chiron. Could you arrange that?”

“Certainly, Ian,” she replied. “Come with me.”

Chiron and Eris were standing partway up the steps, evidently still discussing the ramifications of the visiting elders’ presentation. The older woman Calliope had identified as Rhamnousia was standing quietly to one side of Eris, her knitting needles flashing in the sun.

As we approached I had a chance to see more of Chiron’s appearance. Just like the classic images of centaurs from Grecian vases, he seemed to be human from the waist up while possessing the body and legs of a medium sized horse. Unlike those images, he wore a shirt much like mine over his human part. A long kiltish garment was draped over his hindquarters and hung down to his knees.

“Lady Pyrrha, I’d like to thank you for sharing the story of your family with us today,” Chiron said as we approached.

“You are most welcome,” Pyrrha began before Eris interrupted her.

“You, I knew would be here,” she snarled. “But what are two of the nine doing here? They are not wanted – or needed.”

Pyrrha opened her arms as if to embrace Eris. “Ah, sweet discord. How good it is to see you again.”

Eris spat on the ground near Pyrrha and stepped in my direction, suddenly looming over me. “And who is this mortal?”

Pyrrha placed a protective arm across my shoulders. “Master Chiron, Mistress Discord, I’d like to introduce you to Dr. Ian Hlaford. Ian is a professor of education visiting from the outside world.” I felt a bit intimidated standing between Pyrrha, Chiron, and Eris.
Like I mentioned before, Pyrrha stood a bit over two meters in height, and Chiron and Eris were only a few centimeters shorter. At around 1.9 meters tall myself, I wasn’t used to looking up at people. And this Rhamnousia woman was creeping me out.

“It is good to meet you, Dr. Hlaford,” Chiron said as we shook hands. “What is your area of expertise?”

For a moment I forgot about where I was and gave him a sheepish grin. “Lately, I’m not so sure about the expertise part, but I teach educational technology classes.”

“Mon Dieu, another technology zealot,” Rhamnousia muttered, turning to look at me. “That is all we need.”

“Excuse me?” I asked. Before I could react she grabbed my hand, and I felt a moment’s dizziness as she looked into my mind.

“Ah, hello there,” she whispered. *Hello yourself,* my little voice replied. What’s up with that, I wondered in confusion.

Rhamnousia released my hand as a twisted smile formed on her face. “Eris, I have other places to be. Good day, ladies,” she said with a sneering emphasis on the last word. She gave me a look from beneath straggly grey locks. “We will meet again.” The goddesses of discord and divine retribution turned and, giving a wide berth to the muses, quickly left the amphitheater.

“Shouldn’t she have said ‘be seeing you?’” I commented after they were out of earshot. “I hate to judge somebody by first impressions, but… I’m pretty sure that Rhamnousia woman is a few sandwiches short of a picnic.”

“Ultimately, she serves our father. Civility, however, isn’t a part of her job description,” Calliope commented.
“Eris serves only chaos,” Urania said with a shudder, breaking her silence. “She is born of the void, and to the void she would send us all.” Calliope placed an arm around her sister’s waist.

“But my Lady Urania, without discord we would not have alternate points of view. Thesis, hypothesis, synthesis: the eternal golden braid,” Chiron said amusedly, his tail flicking from side to side.

“There is only truth,” Urania snapped in response. “On all sides.”

Chiron tilted his head to the side, a confused look on his face. “Have I done something to offend you, my lady?”

“My sister is the servant of order and harmony,” Calliope explained. “Eris is an abhorrence to her.”

“Alas. I have let my hunger for debate override my compassion for others,” Chiron’s tail stopped moving. “I humbly apologize.”

“Speaking of hunger, Chiron my old friend,” Pyrrha said after Urania gave a brief nod in response to Chiron, “if you have no other plans, would you care to join us for dinner? Ian has been subjected to my husband’s cooking for the last week, and I would like him to experience at least one meal that was not boiled or fried beyond recognition.”

“Hey, I enjoyed his cooking,” I protested in Mike’s defense.

“You see?” Pyrrha asked. “His brain is obviously starved.”

“I would be honored,” Chiron said with a small bow. “Thank you.” We climbed the arena’s steps and turned in the direction of our guest cottage. “So, Dr. Hlaford, let’s get your two-pence worth. What would you advise that we do with this new technology?”
“Please, call me Ian. Um, to be honest, I’m not sure. What I saw of the students in
the other village working with the computer impressed me. I’m not sure I’ve ever seen
children so excited about learning.”

Chiron grinned. “It sounds like that sentence should have a ‘but’ at the end of it.”

“Yeah, maybe it should. During my visit to your land I’ve seen things that, well,
messed with my preconceptions about how technology is used in education.” I looked up at
him. “And your question about what learning is for has added to that.”

“In my opinion, it is the most important question. How would you answer it?”

I thought for a moment before answering. “I was taught that the purpose of education
was to prepare children for adult life.”

“And what sort of adult life are we talking about here?”

“Well, preparation for a career, good citizenship, that sort of thing.”

“Both laudable goals. And both fit in with Mistress Discord’s statement about how
education is a social technology that allows a culture to pass its values on to the next
generation.”

“I don’t see that as a bad thing. I learned from Michael that –”

“Excuse me,” he interjected. “Michael?”

“Deucalion’s persona in Ian’s culture,” Pyrrha answered.

“Ah, I see. Please, go on.”

Why didn’t he just read my mind for the answer, I wondered. I gave Chiron a look.

“You’re not an immortal.”

He laughed. “Sorry, no. Despite its length, like yours my span of days is bounded by
a sleep.”
“I just assumed… well, anyway, one of the things Michael taught me was that teachers have a responsibility to our students to prepare them for life.” I looked off into the distance as Karen and Frank came to mind. “I haven’t done a very good job of that up to now.”

“It sounds to me like you have taken Deucalion’s side in his struggle against his father,” Chiron commented.

“Struggle?” I asked. “What do you mean?”

“You are familiar with the tale about why Deucalion made Avalon his home, right?”

“Um, sure.” I thought back to what Calliope had told me when we first arrived at Avalon. “Something about a fight between Michael the archangel and Lucifer.”

“My people know it as a great wrestling match between Deucalion and his father, Prometheus. Different peoples’ ways of recounting the same event. Regardless, one thing the tales leave out is that in a more than metaphorical sense the battle continues to this day,” Chiron stated.

I looked to the side where the muses were walking with Pyrrha and whispered, “I don’t know about an ongoing battle, but I do know that Urania has a serious hate for Prometheus because of him giving the technology of fire to humanity.”

Chiron followed my gaze. “Why do you think that is? Did any consequences arise when Prometheus gave your ancestors this technology?”

“Well, geez, it changed everything. As Calliope told me, humanity went so far off the rails that Zeus had to intervene with a flood and start everything over.”

Chiron nodded. “Whether you believe in the flood myth or not,” he said with a smile at Calliope, who was looking over at us, “who paid the ultimate price for that technology?”
“Not Prometheus. I mean, yeah, he was punished for a while, but later Zeus let him off the hook – literally.” Urania growled. “Sorry. At any rate, I’d say it was humanity that paid the price. The culture that existed before the flood was wiped out to the point where they only exist in myth.”

I hadn’t thought about it in days, but about then I noticed my sword in its scabbard slapping at my thigh as I walked. I pulled it out a few inches, the bright steel shining in the sun. “And this is proof that in some ways, we’re still paying that price,” sliding the blade back into place with a click.¹

Chiron raised an eyebrow at my example. “Is there anything positive that came from that technology, or was it all blood and destruction?”

“Excuse me,” Pyrrha interjected, “but would either of you like something to drink while we prepare dinner?” I’d been so engrossed in our conversation that I hadn’t noticed that we’d reached the cottage where we would be staying with Pyrrha.

“Do you need any help in the kitchen?” I offered.

“Thank you, but no. This is my treat, and it will give you two a chance to continue your conversation,” she replied. “Besides, I’ve heard how much you enjoyed my husband’s ale. Care to try some of the local product?”

I grinned. “We’ve just met, and yet you know me so well. Yes, please.”

Chiron looked up at the sky. “The sun appears to be over the yardarm, so I wouldn’t say no to a cold beverage. Thank you, Lady Pyrrha.”

We followed the ladies into the cottage, Chiron’s hooves making clopping sounds as he walked across the wooden floor. A few minutes later we came back out to sit beneath the shade of an oak that was in the yard. “Cheers,” I said.
“To your health,” Chiron replied as he folded his four legs to settle on the grass.

I took a long swallow. “This is interesting. Do I taste berries?”

“And honey. This is our harvest brew, made with fruit from our communal orchard,” Chiron explained. “What do you think?”

I took another drink and grinned. “I think I should go back in and get a pitcher.” One of the ladies must have heard my thoughts, because before I had a chance to stand up Calliope was coming out the door carrying a stoneware pitcher, glistening beads of condensation running down its sides. “You know, this is the first advantage I’ve seen to this whole telepathy thing. I could get used to this.”

Calliope held the pitcher over my head. “Would you like to drink this beer, or wear it?”

“Sorry, sorry,” I chuckled. “Thank you very much for the beer, ma’am.”

“Ma’am? Let me remind you that I am an unmarried woman. Miss, if you please.”

“Miss, right. Sorry. Thank you, Miss Calliope,” I said with amused politeness. She handed me the pitcher with a smile and went back inside.

“You seem rather comfortable with the Bright Ladies,” Chiron commented. “Most people are rather nervous in their presence.”

“You should’ve seen me when I first met them. But yeah, you’re right. I do feel more relaxed when they’re around.” I looked over at the cottage. “Maybe it’s because I’ve realized that underneath all their mystery they’re teachers, just like us.”

“Speaking of teachers, where were we? Oh, yes, I remember. Can you think of anything positive that came from Prometheus’ gift of metallurgy?”
“Well, sure. His intent, according to the muses, was to improve agriculture. In my opinion that’s sure happened.” A quick image of my hometown from 1913 entered my mind, superimposed over my childhood memories. “I grew up in a farming community. My neighbors would’ve been lost without metal farm implements. So, yeah, I guess there are both winners and losers where technological change is concerned.”

“That is why our community is holding these hearings about the new farming techniques that your companions brought us today. We want to be on the side of the winners in this change to our lives.” He chuckled. “Winners, despite Eris’ contention that the very fact that the technology is changing things has made us losers.”

“She may be the spirit of discord, but she has a good point. Things are going to change, whether you embrace the change or not.” I took another drink before continuing. “I’ve seen what effect computers have had in my world, just in the last decade. They’ve gone from being exotic tools used by businesses and government to becoming ubiquitous devices that have reached into all aspects of our lives.”

“I’m not surprised. Using a technology forces you to reorient your ways of thinking to conform to the limits of the technology.”

I chuckled. “Michael and I talked about this when we first met. We have a cliché in my world that when you have a hammer, everything looks like a nail.”

“Deucalion, or Michael as you call him, is a wise man. Technology shapes your outlook on what is capable with it, and causes you to disregard ways of thinking and doing that aren’t a part of it.”
I thought about that for a second before commenting, “On the other hand, computers are rather versatile tools. The children in the other village are using them to collate crop reports, and you’d be hard pressed to do that with a hammer.”

“From what you’ve said about computers in your world, it sounds like they can do much more than produce crop reports.”

“Oh, sure. We use them to do all sorts of things that were impossible before. For example, students use computers every day to send words, pictures, and video – um, moving pictures – around the world in an instant. In conjunction with that are ways in which computer-based communication networks are used as an educational tool by students. They provide access to distant experts, enable collaborative learning and mentoring relationships – there are even virtual communities out there.”

Chiron arched an eyebrow. “Virtual communities?”

“Just like a real community, but with its citizens interacting through computer networks,” I answered. “You should see some of them. They look and sound so real you almost feel like you’re having a comprehensive, realistic experience.”

He snorted. “You ‘almost feel’ like it’s real?”

“Yeah, well, it sounds a little lamer than it really is. Part of that is because they only address two senses, sight and sound. But because they require a certain suspension of disbelief, and focus your concentration, they are powerful learning experiences – students become psychologically immersed in what’s going on and what they’re learning.”

I shook my head as I thought about it. “Yeah, thanks to computers, students take courses without ever stepping into a classroom. Musicians and artists use them to entertain us, doctors use
them to diagnose patients – they’ve even allowed us to send men to the moon and take
detailed pictures of all the planets.”

“Men on the moon? What a world you live in.” Chiron gave me an inquiring look as he refilled his mug. “I am curious. From what the Lady Urania was saying, the computer that she described was rather large. And yet you speak of them in your world as almost being portable in size. And omnipresent.”

I nodded. “Many of them are inexpensive, too. Back home I have a computer with full networking capabilities, either through a cable or wireless, that I can hold in one hand and cost less than a week’s salary. And it’s partially because they’re portable that we’re doing more things with them.”

“What do you mean?”

“Well, look at your meeting this morning. In a way, your village is the passive recipient of the knowledge produced down the river. All you can do is reject it or accept it, right?”

Chiron nodded. “According to Mistress Erin, that is true.”

“Thanks to the portability of computers and devices that have computers in them, no matter where they are students have an increased ability to actively participate in their learning, by allowing them to have access to those learning communities and resources I mentioned a minute ago.”14

“What would happen to your world if all the computers quit working?”

“Wow. That wouldn’t be good.” I shook my head as I tried to picture it.
“Computers are too thoroughly a part of things. We’d survive, but in the short term I imagine there’d be mass confusion, starvation, and probably war.”
“Then despite their versatility they are like all other technologies. Technologies do not change things in an additive fashion, but in an ecological way.”

“Ecological? What do you mean?”

Chiron held up his mug. “What happened when our brewers used fruit juice when they made this beer? Do we have just beer plus juice?”

Raising my mug, I swished a mouthful of liquid around before answering his question. “No, it’s a combined taste.”

“Exactly. The beer and juice together have created a new flavor. That is what I mean by ecological change. Once they are combined, there is no way to remove the juice and have just beer.”

I considered the contents of my mug in a new light. “Then maybe you shouldn’t accept those computer-generated crop reports. If you do they’ll become a part of your society that you can’t easily excise.”

Chiron nodded. “That is the foundation of Eris’ argument. Now that the computer exists, things have changed whether we embrace the change or not. It is already too late to put that particular item back in the box, so to speak.”

“Oh man, I’m sorry.” I gestured with my free hand. “This is such a beautiful place. And now it’s ruined.”

“Not ruined, my friend. Changed. That is where the Lady Pyrrha is correct as well. There is always hope.”

“Hope?” I grimaced. “Sir, I’ve seen how technology can change things. On my world we suffered through a decade-long crisis during my father’s childhood, thanks to technological change.”
“I am sorry to hear of your people’s suffering,” Chiron nodded in sympathy, “but let me ask you: did those who suffered have the ability to control the technology, or did the technology control them?”

I thought about our visit to Ford’s factory. “It controlled them,” I replied.

“And that is what the Lady Pyrrha was telling us. While technology always brings change, we are forewarned by virtue of knowing this. Do not worry, we will endeavor to control this new technology and not let it control us.”

“I wish you the best of luck,” holding out my mug in a toast. Chiron clinked his mug against it.

“Thank you,” he replied. “I will keep my fingers crossed.”

We drank in silence for a few minutes, enjoying the quiet of the afternoon. Chiron looked over at me. “Ian, you still haven’t answered my first question.”

I thought back. “Oh, right. What is learning for?” Shaking my head, I refilled my mug. “Other than my earlier comments about citizenship and preparation for a career, I don’t know.”

“Perhaps I can help with that.”

I looked up. Pyrrha was walking toward where we sat, carrying a mug. “The daughters of Mnemosyne are watching over our meal as it bakes, so if you gentlemen don’t mind I thought I’d take the opportunity to join your conversation.”

“That would be great. Thanks.” Chiron and I moved over a bit to make room for Pyrrha to sit with us in the shade.

“So Ian,” she began while smoothing the wrinkles from her skirt, “your response to Chiron’s question has to do with citizenship and learning a trade.”
I nodded. “Yeah, based on my own training as a teacher, and what I’ve seen so far on this trip.”

“We should clarify our terms, then. His question has to do with learning. Your answer relates to the purpose of education, and goals of educational systems.” She shook her head. “These are not always the same.”

“But aren’t schools where we go to learn?”

“Not always.” Pyrrha tilted her head to the side. “Where did you learn to swim?”

“You’ve been talking to the sisters,” I said with a chuckle. “I learned to swim at summer camp when I was a kid.”

“Was your summer camp a school?”

“It wasn’t called that, but the counselors did teach us how to do things, such as basket weaving and swimming. But it wasn’t the only place kids could take swimming lessons. Some of my friends who came from the city had pools at their schools.”

“Do you think your friends experiences in learning this skill in a school setting was the same as your experience from learning at camp?”

“I’d guess not. For one thing, they probably didn’t have to rinse algae out of their trunks every day.” I grinned as a childhood memory came back. “Or worry about having their toes nibbled by fish.”

Pyrrha smiled in response. “Would you agree then that the same skill, in this case the ability to swim, could be learned with completely different learning experiences?”

“Sure.”

“So we’re agreed that one difference between the two is the learning experience itself. Did your camp counselor grade you on your ability?”
“In a way, I guess. We weren’t allowed to go out to the diving platform, for example, until she was confident that we’d be safe.”

“What about your friends who learned in a school setting?”

“I’m sure they were given grades. We are talking about schools,” I replied with a grin. “They thrive on organization and rules. You have to document student performance somehow. At camp, things were a lot less structured.”

Pyrrha raised an eyebrow. “Then what was your learning to swim for?”

“I just wanted to have fun at the lake.” It started to sink in what Pyrrha was really talking about. “You’re saying that even though my city friends and I learned the same skill, because of differing experiences our goals for wanting to learn how to swim might not have been the same. Furthermore, because of their experiences in learning they may get turned off and not want to ever go swimming for fun.”

She nodded. “Schools deal in organized bodies of knowledge and prepared ways of presenting information. Their goal is reproduction of a society’s traditions and values. This is separate from a discussion of what learning is for.”

“Eris said something like that earlier at the town meeting.” I took a drink while I thought about the presentations there. “So should we throw out organized education and just hand students the freedom to learn what and how they want?”

Chiron chuckled. “Now there’s an idea. Let’s just drop children into a room full of your world’s computers and lock the door for a few years. I imagine that would save us quite a sum in teacher salaries.”
I chuckled then shook my head. “Sounds like fun, but somehow I don’t think that would work out very well. I think all you’d find when you opened the door was a room full of kids who were good at playing games on the computer.”

“And I am sure they wouldn’t thank us for the experience once they grew up,” Pyrrha added.

“It wouldn’t look good on a job application,” I agreed before having a sudden pang. Frank, again. That sucked the humor out of the scenario.

I sighed and tried to get back on topic. “Okay, taking this to its basics, schools were created as places to learn. Michael showed me a school from thousands of years ago where goal was learning about buying and selling grain. Later, he took me to a school where military recruits were trained to be soldiers. So I’d say that what is taught in a school depends on what those running the school want.”

“What is the goal of the school downriver where Lord Hephaestus teaches?” Pyrrha asked.

“Crop reports?” I began then shook my head. “No, that’s just a byproduct of what they were doing. If I understood correctly what the sisters told me, what he’s after is for the students to create their own understanding of what they’re learning.”

“What happens when the students make mistakes, or when the results aren’t what they expected? Are they punished, or given bad grades?”

“No, they just fix the mistakes and try again.”

Chiron leaned over for the pitcher. “Then in this case, if not to generate crop reports, what is their learning for?”
“They’re…” I began then my little light went on. “They’re learning how to learn. He’s helping them learn how to think analytically about a problem and how best to solve it. In the process they’re learning how to think critically about both the subject matter and the learning process itself.” I broke out in a smile. “That’s why they looked like they were having so much fun.”

“Could they have done this without a computer?” Chiron asked.

I thought about that a second. “Sure. It’s just a tool. But like you said before, technology use shapes your way of thinking. What you get from a computer is only as good as what you put into it; what we call in my world garbage in, garbage out.”

Pyrrha chuckled. “Now there’s an image.”

“Yeah. But my point is that, since computers by design require you to think analytically to get valid results, they lend themselves to teaching that skill.”

“Are you done with the pitcher?” Pyrrha interjected. Chiron nodded and handed me the pitcher to pass on. I glanced at its contents.

“It’s still full,” I said in surprise.

Pyrrha smiled. “Wedding gift from Dionysius.”

“That is way beyond cool. I don’t suppose he runs a little shop where I could get one of those?”

“Not that I know of,” she chuckled.

“Ian, if I understand what you were saying a moment ago,” Chiron asked, “should we change our educational system over to one of exploration, based on the desires of what the children want to learn?”

“I wasn’t serious,” I replied in surprise.
“You were joking, but you did say that teaching our children to think like computers helps them to become better learners, and becoming better learners is important.”

I started to answer, but nothing came out for a moment. “Put that way, no. That’s more of an extreme than I meant. But… what I saw the children doing downriver was a wonderful learning experience for them.”

“Then should education only serve the needs of society?” Pyrrha asked.

“That’s too far the other way,” I replied with a frown. “Hang on a second. I’ve got an idea forming, but I need to talk it through.”

I took the ever-full pitcher from where it rested next to Pyrrha and refilled my mug. “I’m starting to think that there needs to be a balance, not an either-or proposition. What learning is for depends on whose needs are being met. Therefore, education needs to serve both the needs of society and the needs of individuals.”

I looked at Pyrrha. “Societies are living things. Education is the mechanism by which they reproduce, right?” She nodded. “So we need to take that into consideration when we decide what subjects to teach, and how best to teach those subjects – including what tools we use.”

“But like any living organism, change is necessary for growth. And growth comes from within; in this case, from individuals.” I turned to Chiron. “As we talked about earlier, technology use introduces change. Always has, always will. But if that change allows for new learning experiences for individuals that can be a good thing. Educational technology doesn’t have to be a zero-sum game, where one side gains at the expense of the other. A synergy can be created, where by being aware of the process, the total can be greater than the
“sum of its parts.” I realized I was sitting forward in excitement and forced myself to lean back against the tree. *If you start singing Kumbaya I’m gonna hurl.* Ah, shut up, you.

Pyrrha smiled. “And growth inevitably leads to hope.” She looked toward the cottage. “Dinner is nearly ready. Let’s go in.”

A few hours later I was sitting in an overstuffed chair near the fireplace trying to keep my eyes open. As promised, Pyrrha’s cooking was more flavorful than Michael’s bachelor fare, and I had helped myself to seconds and thought seriously about thirds. After our feast Chiron had thanked Pyrrha for her hospitality and returned to his cottage. Calliope and Pyrrha were still sitting at the table, visiting and catching up on family news. Forcing myself to my feet, I mentioned to the ladies on my way to the door that I was going to get some fresh air and they waved in acknowledgement.

Outside I stretched and took a few deep breaths to clear my head. The brightness of the moon caught my eye and looking up, I noticed that the constellations were the same as they were back home. As I stood trying to spot the Pleiades I heard a noise. It was Urania, standing in the dark beneath our shade tree from that afternoon. I walked over to her.

“Hey, Urania. What’s up?”

“Nothing,” she replied. “I merely needed a few moments alone. I should go back inside and help plan the next stage of our journey. Enjoy the evening.” She turned toward the house.

“You had a hard time today,” I said to her and she stopped. “If I had your powers I would’ve been tempted to do something rash.”

“It is good then that you are not me.”
I looked at her standing alone. “And who are you, Urania? Why do you help people like me?”

“I am who I am, Ian,” she said softly. “It is not just a job or profession for me. I have no choice.” She sighed, and reached out to rub her hand across the bark of the tree. “Even this simple plant has more choice in what to do with its life than I.”

“C’mon, it can’t be that bad. Everybody has free will.”

“Do they really, Ian? Everybody?” Urania turned suddenly and grasped my upper arms. “Calliope showed you her true self. Look upon mine.”

*You had to open your big mouth.* Before I could say anything I felt a painful tearing sensation deep in my chest. My point of view swam for a moment then cleared as it left my body and streamed upward into the sky. The moon flashed past and my attention was forced briefly on its orbit around the earth. Eagerly my thoughts examined and deduced all the variations in the lunar cycle until the entire system was expressed in mathematic perfection. I turned my astral senses in pursuit of another problem to solve. Although the other planets were too far away to see, I could feel their positions and motion. There was a sense of order and rightness to their movements, and their endless fall around the sun sped up until I could hear the whirring of their passage through the ether.

This still did not satisfy the need within me, this hunger to know how it all worked, and I raced past streaming photons until the entire galaxy was shining at my feet. Dark matter filled the voids between stars clustered in a strained dance of attraction and repulsion. I could sense the tidal maw of the black hole at the galaxy’s center drawing millions of star systems into a spiral wave of death that would not end until entropy had reduced their
existence to cold atoms of hydrogen. From my vantage point I fed on knowledge of stellar mechanics until my soul felt like it would burst, and yet I needed more.

Reveal your secrets, I screamed into the darkness as I dove into the gaping singularity hiding behind torrential shells of radiation at the center of the Milky Way. Forces strong enough to crush stars pushed at me until, so far inside that space warped like a Klein bottle, I was flung out on a jet of shrieking neutrons. At my new scale I was able to discern the buzzing haze of electrons and quickly noted their mass, number, and categories.

Molecules found each other in sticky protean clumps, twisting as they joined into an endless helical staircase. I raced through the spirals, examining the pattern and variety found on every amino acid tread and riser. Rhythmic thunder crashed in the distance, and I swam through the circulatory system until reaching the heart. Swirling upward with a magic cargo of life-giving oxygen toward the brain I touched and looked and questioned and prodded and heard Urania’s voice say, “And there you are.”

I blinked as the events of my journey through macro and micro space receded and rebounded through my mind like the half-remembered fragments of a dream. The only thing keeping me from crumpling to the ground like a load of dirty laundry was Urania’s grip on my arms. “Una? Wha, uh, whoa,” I finally managed to get out after a minute. “Where, I mean, what was that… force, that urge I felt?”

“That was me,” she replied, releasing me to stand on my own. Turning aside, Urania bowed her head.

“That was… ,” I started before feeling my stomach do a slow roll. I bent over to put my hands on my thighs and took a deep breath. After a moment I tried again, “That was you?”
“That is what I embody and share with others. Do you see now why I have no choice? That hunger for knowledge and understanding does not just fill me: it is me.”

“Why the space trip?”

“You were looking at the stars. I thought you might be curious.”

“Oh,” I replied numbly. “Um, thanks.” My stomach felt better so I took a chance on standing up again. “Your revelation to me still doesn’t explain why you think you have no free will.”

“I am a muse, Ian. My very existence is to guide and teach, to help humanity to learn. But what did I bring here today? Nothing but ‘an exercise in conformity and an apprenticeship to whatever gadgetry is useful in a technical world.’”

I finally thought I knew what was going on. The goddess Eris’ criticism from earlier is bothering her. “Urania, you need to shake that off. That was just Eris trying to assign to you the motives and mistakes of others – she was trying to cause problems. It’s what she does, remember?”

“It is what she does, and this is what I do.”

“Okay, yeah, you did come here to support an innovation in educational technology, but I’ve never heard you say that we should worship technology for its own sake.” Urania didn’t say anything, so I kept going. “Look, if I’ve learned anything over the last week or so, it’s not the technology itself that’s the issue: it’s why you do the things that you do with the technology that matters.” I put my hand on her shoulder. “And that is a choice.”

She didn’t reply, but she also didn’t pull away. I looked at Urania standing by herself and was struck by a sudden impulse. “Hey, Una,” I said, and when she turned I wrapped my arms around her for a brief hug.
“What was that for?” she asked in a stiff voice when I let go.

“You looked like you could use it,” I replied with a shrug.

I could tell she was thinking about making a snide comment before a small smile crept across her face. “Thank you, Ian,” Urania said finally, before giving me a gentle punch in the shoulder. “Now let us go back inside and never speak of this again.”

“No problem,” I said returning her smile. “What are friends for?”
1 (page 199) Depiction of Eris, the Greek goddess of discord and strife, taken from Grant (1962), p 87.

2 (page 199) Is each generation of children doomed to becoming serfs that serve the needs of a technological society? According to Jacques Ellul: “Only two possibilities are left to the individual: either he remains what he was, … and is at last tossed on the social rubbish heap, whatever his talents may be; or he adapts himself to the new sociological organism.” In The Technological Society, by Jacques Ellul (1964), p 334.

3 (page 199) Education qualifies as a form of technology, according to Jacque Ellul. What is problematic about education for him is within its nature: “The most important aspect of this technique is the forced orientation toward it. It is a social force directed toward a social end.” In Ellul, J. (1964), p 347.

4 (page 200) Society has a vested interest in seeing that future generations get an education; an education that serves its needs and that is seen as the right education. For those in the dominant group of society (i.e., upper-class whites and males), education is a technique that functions to maintain the status quo: “Children are educated to become precisely what society expects of them. They must have social consciences that allow them to strive for the same ends as society sets for itself. … The keyword of the new human techniques is, therefore, adaptation.” In Ellul, J. (1964), p 348.

5 (page 201) “Social conformism must be impressed upon the child: he must be adapted to his society; he must not impair its development. His integration into the body social must be assured with the least possible friction.” In Ellul, J. (1964), p 347.

6 (page 201) The aspect of technology in education that has Ellul concerned is not that it is a technique for improving education, but that it is part of the mechanism for training children to be in thrall to a technological society: “Education will no longer be an unpredictable and exciting adventure in human enlightenment, but an exercise in conformity and an apprenticeship to whatever gadgetry is useful in a technical world.” In Ellul, J. (1964), p 349.

7 (page 204) “The attitude of the scientists, at any rate, is clear. Technique exists because it is technique. The golden age will be because it will be. Any other answer is superfluous.” In Ellul, J. (1964), p 436.

8 (page 204) The centaur Chiron was the teacher of Achilles, Heracles, and other Greek heroes. In Grant (1962), p 183.

9 (page 212) “Idea number one is that culture always pays a price for technology.” From Five Things We Need to Know About Technological Change, a speech given by Neil Postman at NewTech ’98 in Denver, Colorado, March 17, 1998.
(page 214) “That there are always winners and losers in technological change is idea number two.” From Postman, N. (1998).

(page 214) “The third idea, then, is that every technology has a philosophy which is given expression in how the technology makes people use their minds, in what it makes us do with our bodies, in how it codifies the world, in which of our senses it amplifies, in which of our emotional and intellectual tendencies it disregards.” From Postman, N. (1998).


(page 215) “Immersion is the subjective impression that one is participating in a comprehensive, realistic experience. Immersion in a mediated, simulated experience (such as a virtual environment or an augmented reality) involves the willing suspension of disbelief… The capability of computer interfaces to foster psychological immersion enables technology-intensive educational experiences that draw on a powerful pedagogy: situated learning.” From Dede, C. (2005).

(page 216) “In a few years, high-performance computing and communications will make knowledge utilities, virtual communities, shared synthetic environments, and sensory immersion as routine a part of everyday existence as the telephone, television, radio, and newspaper are today.” From Dede, C. (2000), p 90.

(page 217) “Here is the fourth idea: Technological change is not additive; it is ecological. I can explain this best by an analogy. What happens if we place a drop of red dye into a beaker of clear water? Do we have clear water plus a spot of red dye? Obviously not. We have a new coloration to every molecule of water. That is what I mean by ecological change. A new medium does not add something; it changes everything.” From Postman, N. (1998).

(page 218) “And fifth, technology tends to become mythic; that is, perceived as part of the natural order of things, and therefore tends to control more of our lives than is good for us.” From Postman, N. (1998).

(page 219) John Dewey, in *Experience and Education* (1938), describes education’s goals thusly: “The main purpose or objective is to prepare the young for future responsibilities and for success in life, by means of acquisition of the organized bodies of information and prepared forms of skill which comprehend the material of instruction.” p 18.

(page 220) “… First, that young people in traditional schools do have experiences; and, secondly, that the trouble is not the absence of experiences, but their defective and wrong character – wrong and defective from the standpoint of connection with further experience.” In Dewey, J. (1938), p 27.
In what I have said I have taken for granted the soundness of the principle that education in order to accomplish its ends both for the individual learner and for society must be based upon experience – which is always the actual life-experience of some individual. I have not argued for the acceptance of this principle nor attempted to justify it.” In Dewey, J. p 89. My argument here is the acceptance of this concept in light of education’s various goals, and technology’s role in supporting this concept.
CHAPTER 9

Early the next morning after saying goodbye to Pyrrha and Hephaestus we continued to follow the river as it led us up into the hills. Thick gray clouds covered the sky as we rode, and mist began to gather in low-lying areas. Even the trees had a washed out, lifeless look to them that discouraged conversation. Lunchtime was focused on the necessities, and we soon resumed our way.

Late in the afternoon we rode into what remained of a small city. Block after block of burned-out houses and shops, like the rotted and blackened stumps of teeth, were on either side of us as our horses picked their ways though rubble-strewn streets.

“What is this place?” I asked. “And furthermore, what happened to it?”

“This city no longer has a name,” Urania replied. “Once, however, it was a great center of technology, revered and respected throughout the region.”

“And now it has a sort of ‘should’ve seen this place before the party’ feel to it.” I chuckled. “This can’t be good for the tourist trade.”

I was mildly surprised by what Urania did then. She simply looked at me and sighed. I was expecting some sort of biting retort at the least.

Calliope called out, “Look, the city commons is up ahead on our right. Let’s set up camp there before it becomes fully dark.” As we turned our horses that direction she remarked to me sotto voce, “Need I remind you again about her lack of a sense of humor? And your general lack of intuition as to when it is apropos to make jokes?”

“Just whistling past the graveyard, if you know what I mean.” Echoes from our horses’ hooves sounded oddly muted as they bounced off the crumbling buildings we passed. I couldn’t help shivering. “I’ve got a bad feeling about this place.”
It didn’t take us too long to find a clear spot on the commons to set up camp. After supper we huddled around our campfire warming ourselves with some of the coffee that Michael had packed for us. I mentioned again to Urania my curiosity about this place.

“Ian, I cannot tell you for certain what happened here,” she replied. “The exact details are unknown to any who were not here at the time. And the stories of any who were here at the time are a mystery as well, for no remains of the inhabitants have ever been found.” I followed Urania’s gaze as she looked about the abandoned city center. Light from our fire was reflected from the shards of broken glass that tenuously hung in a few windows.

“What is rumored, however, is all too familiar.”

After a moment I asked, “And that is?”

“That they fell prey to the same condition that struck down Atlantis and Icarus – over-reaching pride. Hubris. In plain terms, their reach exceeded their grasp,” Urania explained. “In this place they faced the demons of their own creation. You can see the result.”

“Is that why we’re we here? Another object lesson in the dangers of misusing technology?”

The sisters looked at each other before Calliope shrugged. “No, not really. It’s just a, let us say, convenient place to rest for the night.”

I looked around. “I’m not sure how much rest I’m going to get here. It’s not exactly your basic Red Roof Inn. I’m getting more of a Bates Motel vibe, if you know what I mean.”

Urania suddenly yawned, then looked startled. “Excuse me. Perhaps it would serve us better to continue our discussion after a night’s rest. Good night.” She stood up and moved to where her blankets lay, a few yards from the fire.
“Calliope, do you mind if I ask a, well, sort of personal question?” I whispered after Urania had settled in to her bedroll.

Calliope was busy preparing her own sleeping arrangements. “Not at all, Ian. What is it?”

“I’ve noticed that you both sleep, but I assumed that was for appearances’ sake. I mean, you’re not… well, you’re not human.”

“That is true,” she said, her mouth turning up slightly at the corners, “we are not human. But like all living things, we do sleep, and obviously eat just as you do. What is your question?”

“It’s just that Una actually looks – well, tired. Is she okay?”

I knelt next to Calliope as she sat down on her blankets with a sigh. “We are both tired, Ian. Our work keeps us busy, and it has been some time since we took a holiday. Perhaps when our journey is complete we’ll, as you say in your world, grab some down time.” She gave me a small smile and gently squeezed my hand. “Good night, Ian. Be well.”

Light from the dying fire cast dancing shadows around the city square as I made up my own bed. More than once I thought I saw eyes watching from the broken windows of the buildings, and I told myself it was just reflections from the fire. What had the people of this place done to cause this, I wondered again, trying to guess at what technological creation had raged out of control here. Also, what was up with the muses? They certainly weren’t acting like their normal selves, whatever normal is for demigoddesses. At some point my mind settled down and I managed to fall asleep.
When I awoke it was still dark, and my bladder was painfully reminding me of all the coffee I’d consumed just before bedtime. I climbed out of my bedroll quietly, so as to not bother the sisters as they slept. After a moment’s reflection I grabbed my sword belt. Call me crazy, but there was no way I was wandering off into this necropolis without at least the illusion of protection from the things going bump in the night. I made my way toward one of the ruined buildings and found a private spot to pay rent on my coffee.

I was just retying my sword belt when I heard a voice softly call my name. I looked around and heard it again.

“Psst. Hey, Ian,” came from around the corner of the building, away from the campsite. “Dude. Over here.”

Dude? I’ve haven’t heard anybody use that particular appellation since my adventure began. I walked around the corner looking for my late night visitor and had to stop for a moment to let my eyes adjust to the sudden moonlight.

“You just gonna stand there or what?” came from the shadows. “Come on; it’s not like we’ve got all night.”

“Who’s there?” I asked.

“Shouldn’t I have said knock, knock first?” was the reply.

“Man, that joke’s bad enough to be one of mine,” I commented.

“That’s because it was.” Stepping out from behind a broken column was a man wearing a light colored cotton shirt above blue canvas trousers that were tucked into dark leather boots that turned down at the knee. He had about a week’s worth of beard going and a dimple in one cheek. I recognized his face immediately. I should; I’ve been shaving it since I was fourteen.
“Not gonna do this,” I said after a moment.

“Do what?” Not-me asked. “Not have a little heart-to-heart with yourself?”

“No, I’m not gonna have one of those stupid science fiction doppelganger moments,” I said, shaking my head and backing away a step. “You’re some weird test the sisters came up with.”

“The muses have nothing to do with my existence,” Not-me chuckled. “Here, I’ll prove I’m you. Remember kissing Heather Wilson after the football game our senior year? We couldn’t tell anybody because if her boyfriend found out –”

“Scott would’ve pounded the snot out of me.” I slid my foot another step back. “I’m not convinced. Half the folks I’ve met on this trip have been able to read minds.”

He sighed. “So you don’t believe I’m you. Fine. I can deal with that. But can we at least talk for a minute?”

I thought about it for a moment. “Okay. We’ll talk. For a minute.” I can always yell for the sisters if I get in trouble, I told myself. “So talk.”

“They’ve really gotten to you on this trip, haven’t they,” Not-me said with a lopsided grin.

“What do you mean?”

“You used to have things all under control. Go to work, hang out with Jeff and Bill, play some softball each summer – it was a pretty good life.”

“I’ve still got that life – assuming I make it home,” I replied.

“No you don’t. That life only works in an Ian-centered universe. They’ve taken it away from you with all this talk of caring about students and proper uses of technology. As if somebody like Frank is worth your time.”
I got upset at that. “Hey, you’ve got to admit, what I did to Frank was pretty crappy.”

Not-me shrugged. “Whatever. Next semester there’ll be another Frank to take his place. You know it. And you know what you’ll do. But that’s not the point.”

“Yeah? What is the point?”

“By kidnapping you these two quote, Bright Ladies, have ruined your life. Your head is filled with their touchy-feely nonsense. If you accept their way of thinking your old life is gone. You’ll be wasting all your time trying to help the un-helpable. And if you resist them then you’ll never get home.”

He may be blessed with my good looks, I decided, but I really didn’t care to listen to him anymore. “I think I’m about done with this conversation.”

“Oh yeah?” Not-me dropped his arms to his sides. “A couple last things then. Here’s what I think you should do: smile and nod to the muses, say whatever they want you to say to fit in and go along. Be a good little professor smurf. Then when you get home you can forget all about this little fantasy of theirs. Sound like a plan, Stan?”

I finally recognized the source of what he was saying. You’re my inner voice, aren’t you, I thought. My doubts and fears. I listened for a second but there was no answer. I relaxed just a little. That’s okay, then. This had to be something the muses cooked up.

“No dice, pal. You’re right about one thing: my life would be easier if the muses hadn’t shown up in it. But they did. And they’ve shown me that I’ve got responsibilities that I’ve neglected.”

Not-me smiled. “That your final answer?”

Despite the situation I chuckled. “I’m starting to understand what’s so annoying about my constant pop-culture references. Regardless, yes, that’s my final answer.”
“Sorry you feel that way. Oh well, I had to try.”

Woo-hoo, I passed the test. I started to turn, then thought of something. “Didn’t you say you had a couple last things? That was only one.”

“Oh, good catch,” he replied. “Here’s the rest. Not that it was necessary, but thanks for confessing your crime. Lady Rhamnousia was hoping that you would.”

“Lady Rhamnousia? You mean the old woman from…” My voice trailed off as with a soft scattering of loose gravel the shape of the goddess of divine retribution formed from within the shadows. She stepped forward to place a wrinkled hand on my alter-ego’s shoulder.

“I promised that we would meet again, mortal man,” Rhamnousia hissed. “And now you will taste my justice.”

This can’t be good, I realized, breaking out in a cold sweat. “Uh, justice? For what? You punish hubris, right? I haven’t committed hubris.”

“But you have,” she replied with a crooked smile. “I saw it in your mind back at the village. Hubris is the sin of excessive pride. And you have been so full of pride that you neglected your sworn duties as a teacher.”

“Hey, I said I was sorry,” I exclaimed, “and I am. Ask Michael; I mean Deucalion. Ask the sisters. Ask anybody. Read my mind, I don’t care. You’ll see –”

“Sorry? Sorry belongs to Mercy, and she isn’t here just now,” Rhamnousia said with a chuckle like fingernails on a chalkboard. “Enough words. Nemesis?”

“Yes, my sister?” Not-me replied, head bowed.
“Nemesis? Who is – ,” I started to say before more trivia from my classical lit classes kicked in. Oh no, No, NO. Nemesis is the unstoppable executor of the gods’ justice. This is so very, very, not good.

“Punish him.” Releasing him, she faded softly back into the darkness.

Not-me looked up to face me slowly, a really nasty smile spreading across his face as he pulled his sword. “You ready, freddy? Because, as they say, *en garde*.”

“Sister Mary Joseph,” I cursed in fear as I pulled out my own weapon. I took a deep breath to yell for the muses and barely got my sword raised in time to block a swing that would have taken my head off. I swung wildly in return and only kept from losing a hand by twisting my arm around sideways. “Are you sure we can’t just talk some more? I really don’t want to hurt you.”

“Oh, good one,” really-Not-me-because-he’s-the-avatar-of-divine-justice replied. “Is that your plan? Make me laugh so you can get in a lucky swing?”

“No, not at all,” I replied before trying to block another of his swings. This one was a feint on his part, because as soon as my sword went for his he easily stabbed me in the thigh. My leg went very cold, and very hot, all at the same time. His sword made a juicy sort of sound as he pulled it out, and I threw up just a little bit in the back of my mouth. About-to-be-the-death-of-me stopped for a moment, my blood running slowly down his blade to create a dark Rorschach pattern on the flagstones. Through the pounding in my ears I managed to finish my sentence. “It’s just that I realized that I’m a pacifist at heart.”

His grin got even wider. “Let’s take a look at what’s really in your heart, shall we?” he said and rushed forward. I tried to turn and run but my wounded leg folded under me as
soon as I put my weight on it. Nemesis tripped over my feet as I sprawled backwards, and my sword disappeared up to the hilt in his stomach as he fell on top of me.

“Nice move,” he whispered, his eyes inches from mine. “By the way: you’re punished.” His eyes widened for a moment as a shudder ran through his body then he relaxed.

I couldn’t seem to get a grip to push him off and, as I seemed to be having some trouble catching my breath, I gave up and shut my eyes for a minute. Maybe I’ll just rest a bit before trying again, I decided. Yeah, that’s the ticket. After a while I heard a noise. I opened my eyes to see that familiar faces had moved into my line of sight.

“Hey, Una, Callie, ‘sup.” The weight of Not-me had narrowed its focus to my stomach, so I tried looking in that direction. What I saw had me confused. My twin was nowhere to be seen, but what I could see was a sword driven nearly to the hilt through my abdomen. A sword very much like mine, as a matter of fact. It was effectively pinning me to the ground like a bug on piece of cardboard. “Oh, that’s gonna leave a mark,” I muttered aloud.

“Just lay still,” Calliope said to me, one hand supporting the back of my head and the other brushing stray hairs back from my face. “Una, you need to hurry. His eyes are dilating, and I’m having trouble finding a pulse.”

“If you think you can do better, perhaps next time you can be the embodiment of science and I will tell the pretty stories,” Urania tersely replied as she examined my stomach. I noticed that her hands were beginning to take on an orange glow against the darkness. “Keep the sword if you like, Ian,” she muttered in a mocking tone. “Not the best advice you’ve ever given to one of our charges.”
“He was only supposed to confront his inner fears,” Calliope replied. “How could I have known that our little professor would nearly be killed by them?”

Urania bared her teeth as she worked. “I smell Eris’ hand in this. And Rhamnousia. When I tell Father what they’ve done…”

“Callie,” I whispered.

“What is it, Ian?” she replied gently.

“Do you think I’ll ever play the piano again ‘cause I never could before and that’d be cool… hunh…” My attempt at humor was cut short by a sudden spasm that hurt, well, pretty much everywhere. When it passed there was a bitter, coppery taste in the back of my throat.

“His wounds cannot be mended in time; there is too much damage,” Urania snapped, the glow from her hands fading in and out. “You must send him on. Now.”

“To where?” Calliope asked anxiously as she cupped her hand across my forehead. “We aren’t close enough to home to send him there and – wait, I know. Ian, hold on just a little bit longer, you’re… almost… and there we go.”

* * *

“Eight bells, mister. Hit the deck.”

I snapped instantly awake. That phrase was etched across thirteen years of my memory. It was what greeted me at the beginning of every day during the school year while I was growing up. There was only one little problem. The voice saying it belonged to my father. And he had shuffled off this mortal coil and joined the choir invisible a few years back. “What the – ” I began as I looked up.
“Hey, now. That isn’t the sort of language I raised you to use,” my father said with a grin. “Let’s get you on your feet.”

Without thinking I took the hand he was offering and stood up. “Where are the muses?” I started to ask before it hit me that I was actually holding my father’s hand. In an instant I had him in a bear hug. “Pop! You’re alive!”

My father chuckled as he returned my hug. “Yes and no.”

“Yes and no?” I pushed back and took a second look. The man whose shoulders I was holding was my father – only without the gray hair, wrinkles, and slight bend to his shoulders thirty years of factory work had given him. He was wearing his favorite cowboy boots and hat, faded Levis, and a white tee shirt, looking much like he had when I was a kid. This was definitely not the elderly man we’d laid to rest just a few years ago.

“You should take a picture; it’d last longer,” he remarked with a grin and a raised eyebrow.

I pulled him close for another fierce embrace. “It’s been a while since I’ve heard that one. Never thought I’d hear it again.” I let go of him to look around.

“Nice ride you’ve got here.” We were standing next to the wheel on the rear deck of a small galleon, maybe about thirty meters in length. The ship was rolling gently as it traveled, the horizon lost in a heavy fog. Above us was a featureless gray sky.

“Don’t get too attached to the place,” he replied as he pulled a Swisher Sweet cigar from his shirt pocket and planted it unlit in the corner of his mouth. “You’re just passing through.”
Passing through? Just a minute ago there was a sword passing straight through my gutty works. I pulled up my shirt to check. Not a mark. And no appendix scar, either. I thought about what that, and seeing my father again, must mean. “Is this Heaven?”

“Nope, and it’s not Iowa, either,” he replied with a grin.

“We’re in the other place?” I asked as I looked again at the water.

“Other place? Hell?”

“Um, yeah. I am dead, aren’t I?”

“Not if I have anything to say about it,” he said forcefully as he adjusted our bearing.

“And since you’re still my son, I do.”

I turned back to him, confused. “What do you mean?”

“First off, you’re here in spirit only. Your body is still back with the muses. They needed to store your essence somewhere while they patched you up. If you had stayed with them and things went wrong, well, I’d have a permanent first mate here on the Jennie Belle, if you know what I mean.”

I’m a spirit? I looked at my hands. They seemed solid enough, but I’d take Pop’s word for it. His next comment pulled me out of my reverie.

“And second, you’ve made a mess of things, boy. Treating your students the way you have.” His hazel eyes glared at me from below the brim of his hat. “I’d take my belt to you if I thought it’d do any good.” He shook his head. “But I know you. It wouldn’t. That’s why I put the word out.”

There’s another phrase I hadn’t heard in a while. Putting the word out, to farm folks from his generation, meant getting the neighbors together to lend someone in trouble a hand.
It’s another one of those Midwestern things. “Are you telling me that you’re responsible for the muses coming to get me?”

“Somebody had to do something, now didn’t they?”

“But, you… Pop, they’re Greek goddesses. Not exactly what I learned about when you taught Sunday School.”

“You learn to keep an open mind after you walk into the light,” he grinned around his cigar. “I joined the order of Neptune when I was in the Navy, boy. Gives me some juice in these parts.”

I couldn’t help laughing. “You know, in the face of the last couple weeks, this is the icing on the cake.” I squeezed his shoulder. “Thanks, Pop. It’s, well, the trip has been educational to say the least.”

He gave me a broad smile. “That was the idea.”

I took a deep breath and tasted the salt in the air. “Where to now? Are we going to fight some sea-serpents, or visit Atlantis?”

“All those years of school and you’re still not the sharpest tool in the shed.” He shook his head. “No, your destination is over there.” He pointed with his cigar off toward the bow. “That’s where your body is, now that Urania has got it fixed.”

I looked in the direction he indicated to see the shape of a somewhat familiar mountain through the fog. “We’re sailing up Olympus?”

“You’ve already done that,” he replied, “before you got here. No, I just wanted the chance to tell you that I’m proud of how you came around. You’ve got a strong heart, boy. Don’t forget that.”
Perversely, the fog was getting thicker as we drew closer to the mountain top. I could barely make out my father’s face. “I love you, Pop.”

“Same here,” he said gruffly. “Try not to be such a jackhole in the future, would you?”

“How did you hear about – ?”

“Look over there, boy: it’s a bunny.”

“Huh? Where?” I turned in confusion to see what he was talking about, and felt a sudden push in the small of my back. I flipped over the rail of the ship to fall toward the water.

“Be seeing you,” I heard just before I hit.

* * *

“Ian? Are you sleeping?”

I’ve always thought that was a rather pointless question. If you’re awake, the only answer is no. And if you’re asleep, well, you didn’t hear the question anyway. While I was trying to think of a way to say yes without lying, I heard a door open.

“So, are you planning to sleep the whole day away?” Rustling noises came closer, and I felt someone sit on the edge of my bed. My bed? Say what? I opened my eyes.

“Una? What are you doing here?”

“What am I doing here? Why should I not be here? This is my home, after all.”

I blinked a few times while I tried to process that information. The feeling of comfort from talking to Pop on his ship was still in the front of my thoughts. “Sorry. For some
reason I thought I was back at my parents’ house. Never mind.” I looked around the room. “Wow. Nice place. You could park your father’s magic jet in here.”

“Nonsense; it is not that large – oh, you were using sarcasm in an effort to be humorous. I understand now.” She reached over and tousled my hair.

“Una, you recognized a joke.” I pulled myself up somewhat in the bed, and used the headboard as a backrest. “Congrats. At this rate you’ll be making them yourself in no time.”

“I’ll believe that when I see it,” came from the door as Calliope entered the room. “My sister wouldn’t know funny if you dropped a truckload of bananas in front of a circus full of clowns.”

“I don’t know about that, Callie,” I replied, thinking about my conversation with Urania in Chiron’s village. “I think she has depths that could surprise you, even after all these years.”

Calliope glanced over at her sister, who simply smiled at me then looked away. “I sense that there is a story here that I’m not familiar with.”

“Hey, no mind-reading,” I protested. “Let’s just let this be my and Una’s little secret, okay?”

Calliope gave me the raised eyebrow. “Are you sure you’re not feverish from your wounds? You weren’t exactly in the best of shape when we found you in the ruined city.”

My experience in the collapsed building came back to me in a rush. “Yeah, well, at least I’m here and not there. Speaking of which,” I said with a wave at my surroundings, “as I am here, I take it our little adventure is over? Did I pass?”

“With flying colors. Thank you for being a good student.”
I shook my head. “It’s me who should be thanking you, even if your final exam did almost get me killed. I haven’t felt this excited about teaching since, well, since I got into teaching.” I sighed. “The ironic part is that I probably don’t have a job to go back to. I’ve been gone forever; I’m sure my department has assumed that I’ve abandoned my position. Or died. Or something.”

They both broke out laughing. “Oh, Ian,” Urania said, “have you learned nothing about us while you’ve been here? What would be the point of helping you, and then leaving you unable to use what you have learned?”

My hopes started to rise. “Are you saying that I’ll still have my job when I get back?”

“Not only your job,” Calliope replied, “but you can still make that presentation at the conference in Orlando. Michael isn’t the only member of the family who can travel into the past. Father’s chariot can travel to anywhere and any-when we choose. We’ll have you in Florida just a few hours after we left the outside world.”

I couldn’t help pulling a near-quote from Dickens. “The spirits did it all in one night,” I laughed. “At any rate, when do we leave?”

“That depends on you. How do you feel?”

“Not too bad, actually.” I lifted the sheet for a quick peek at my abdomen. The only evidence of my mishap was a thin faded pink line. “Considering that I was well on my way to being a shish cabob not that long ago.” I raised my arms above my head and stretched, luxuriating in every little pop and crack from my joints – and in the fact that I was alive to enjoy the sensation.
“I feel great, actually. So let’s go. I feel like I’ve got a lot to do back home, and I’d like to get at it.” I started to climb out of bed then quickly pulled the covers back up when I noticed how I was, or rather wasn’t, attired. “Um, actually it might be best if you ladies would point out where my civilian clothes are, and then give me a bit of privacy.”

Urania arched an eyebrow. “Who exactly do you think placed you in that bed?”

“Yeah, well, I wasn’t here for that, remember? I was off visiting family.” I maintained a solid grip on the blankets. “Clothes, now, please. Muses, shoo. Scat.”

* * *

True to their word, the clock at the Orlando airport when we landed indicated that Urania and Calliope had brought me back to the same day as when we originally left. I had briefly thought about having them take me directly home, but upon consideration I decided that it wouldn’t be fair to cause extra work for the conference planners by skipping out on my presentation.

I was a little surprised that after all I’d been through because of their meddling in my life, I still wasn’t quite ready to say goodbye to them. They told me not to worry: they’d see me later and this time I didn’t mind hearing the phrase. A quick hug apiece and I was on my own.

It wasn’t the highest point of my career when the audience at the conference realized my presentation consisted primarily of obvious truths and buzzwords, and began to move toward the doors in ones and twos. Yet another thing that I need to make up for, I realized.
The following Friday afternoon I was sitting at my desk, about fifteen minutes after the end of my introductory tech class. I was just looking at the clock when a tentative knock came at my office door. I opened the door to Frank, standing nervously on the other side.

“You, uh, like asked for me to drop by?” he asked nervously.

“Please, come in,” I replied as I walked back to my desk where his note was laying in plain sight. “We need to get something cleared up.”

“So, Frank. I take it you didn’t see the humor in my little joke last week?” I leaned back against my desk with my arms crossed. “Or don’t you think professors should be allowed to pick on their students?”

Frank was nearly sweating now. I imagined that he was picturing his grade for this class swirling slowly around the drain. “That’s all right, Dr. Hlaford. It was no big deal – I never should’ve left that note, I’m like, really sorry.”

*There you go, he’s really sorry. Tell him that’s not good enough.* Huh, I wondered in surprise. I thought you were gone.

“Frank, I’m afraid that I can’t accept your apology.” *Atta boy! Now tell him he’s gonna flunk.* I pushed away from the desk and stood directly in front of my student. “Because you were right: I was a jackhole. What I did was wrong, for any number of reasons, and I have no excuse. Please accept my apology, and my promise to be a better person in the future.” *You’re apologizing? What the heck are you doing?* What I should have done over a year ago, I thought in reply. I’m not paying any attention to you. Now shut up.

Frank’s eyes looked like they were ready to pop right out of his face. “You’re, like, sorry? But, you’re, you’re a professor.”
“And you’re a student. I’ve realized lately that in the grand order of things, you rank much higher than I do.” I stuck out my hand. “I’m very sorry. My job is to help you learn, not to amuse myself at your expense. And speaking of helping you,” I continued as we shook, “I think we need to talk about your attendance. Care to tell me why showing up for my class is so low on your priority list?”

Frank looked at the floor. “It’s just that, well,” he paused for a moment before hesitantly continuing, “like, dude, it’s just so boring.”

I sighed. “Yeah, it has been, hasn’t it?”

His head snapped up, a surprised expression on his face. “Huh? I mean, you think so too?”

“I’m afraid so. At least the way I’ve been approaching the subject. But I plan to fix that.” I picked up my class list and looked at Frank’s entry on it. “Your major is Political Science, right?”

“Yeah, with an emphasis in American government,” he replied with a nod.

“And you’re in the secondary education track,” I continued, noting an entry next to his name. I looked back up at him. “You’ve missed a lot of work over the semester, but I’m willing to make a deal with you.”

“Sure, Dr. Hlaford,” he replied eagerly.

“Call me Ian. I remember that one of the topics this semester that you did show up for was how to build web pages. What I’d like for you to do is create a semester project for me instead of taking the final exam.”

“I don’t have to take the final? Sweet!” he exclaimed before adding cautiously, “um, what sort of project?”
“This sort.” I handed him a few sheets of paper that I’d been preparing since my return from Olympus. “Here’s the problem: I’ve spent the entire semester dumping technical information on you and the rest of the class, without showing you how this knowledge can be used as a tool that can be used in your future career as a teacher. That’s one of the reasons class has been so boring.”

Frank pointed to a paragraph on the handout. “That’s what you mean here by authentic learning, right?”

“Right. These should be skills that are useful to you outside of the context of my class. So in your case, what I’d like you to do is create a website that you could use as a high school civics teacher.”

“Use it how?”

“On the second page you’ll find the project guidelines. First you’ll need to create a lesson plan for a sample lesson in what you plan to teach.” I arched an eyebrow. “Perhaps an examination of free speech rights within the 1st Amendment would be a possibility.”

Frank looked at his note on my desk and shook his head with a small grin, which I returned.

“Regardless of the lesson topic you decide on, you’ll also need to read the materials that I’ve just placed on the class website that discuss various options for using the web as a teaching tool. The last step is to design and build your own web pages.”

“And that’s it?” he asked.

“Pretty much. I’ll need you to document each step of the process, justifying the choices you make, and you’ll want to look over the grading rubric on the last page, but yeah, that’s about it.” I tilted my head to the side. “Sound like a plan, Stan?”
“You bet, Dr. – I mean, Ian.” Frank opened his backpack to put away the assignment then paused. “Did you do this just for me?”

I shook my head. “You were sort of my inspiration, but I’m giving this choice to the rest of your class when they get back from Thanksgiving break. I just felt that I owed it to you to give you a head start on things.”

He zipped up his backpack and slung it over his shoulder. “Thanks, man. I won’t let you down.”

“You’re welcome. Now get out of here before you’re late for wherever you’re going. Oh, and Frank,” I said before he was completely out the door, “if you have any questions about this project, you just let me know. Okay?”

“Sure thing.” His face broke into a smile. “Catch ya later, dude.”

I watched Frank for a moment as he blended into the flow of students in the hallway. With any luck, I thought, his future career as a burger flipper has just faded away. And my career as a jackhole in the eyes of my students had gone with it.

Less than an hour later I walked into Dugan’s and, after getting a Guinness from Mary, sat down with Jeff and Bill.

“Hey, Ian,” Bill said with a nod before giving me a second look. “Whoa. How the heck did you grow a beard so fast?”

“My beard? It’s not that long. Is it?” I rubbed a hand across my chin. When I decided to keep my soup catcher when I arrived in Orlando, it hadn’t occurred to me that it might surprise folks who’d seen me without it just a week earlier by their reckoning. “I don’t know. Must’ve been something about the change in location that agreed with me.”
“So how was the conference?” Jeff asked. “How did your presentation on ‘improving teaching methods’ go?”

“Well, they didn’t throw things and boo, but they probably should have.” I shook my head in chagrin. “I deserved it; I wasted their time and my own.”

Bill looked at me with concern. “You okay, bro? You sound a little down.”

“Just the opposite, actually. My little trip did me a world of good. Although it did reinforce something I said last time we were here.”

“Yeah,” Jeff asked cautiously. “What’s that?”

“That I really didn’t have a clue about what I’ve been doing when it comes to how best to use technology in education,” I said with a chuckle.

“Why is that amusing?” Jeff asked.

“Because now I know why I felt that way. I was so focused on the technology that I’d forgotten to ask the question that really matters.”

“You’d forgotten why we do this,” Bill commented. “The students.”

“You are correct, sir,” I replied in an Ed McMahon voice as I raised my glass to him in acknowledgment.

“You mean like that trick you played on your student?” Jeff asked. “I still can’t believe you did that.”

“That was a symptom of a larger problem,” I replied. “I just didn’t realize it at the time. But I’ve apologized to him, which is a start on that front.”

Jeff smiled. “Good for you.”

“Sounds like there’s more to it than that, though,” Bill said.
“There is.” I took a moment to enjoy my stout before going on. “When we talked before about our field I was stuck complaining about the procedural stuff, like teaching our students how to develop multimedia and build websites.”

Bill nodded. “Don’t remind me. You were quite the cynic.”

“That’s because in many ways I felt my job was to train students to use technology. It never occurred to me that my real job should be helping students learn ways to get involved in their own education. Technology is just one means to that end.”

Jeff blinked a few times, set down his beer and looked over at Bill. “I think there’s been some mistake. This isn’t the same Ian that we sent off to Orlando last week.” He turned back to me and arched an eyebrow. In a stereotypical Midwestern drawl he said, “I wonder if maybe some ex-Soviet spies done transmographed his brain or some such thing.”

“I think it was just too much time in the Florida sun,” Bill chuckled. “So, you think our students should get involved in their own educations. How do you recommend we get started on that?”

“By going beyond teaching our students how to use a piece of technology or performing a procedure, to asking them to answer the question of why the use of a given technology is appropriate.”

Now it was Bill’s turn to set down his beer. “And by addressing that question,” he began, “they’ll become critics of their own education and of the technology that they use. I see where you’re going here.”

“You’d want them to establish the historical and social context for each technology,” Jeff offered as he got a thoughtful look on his face. “And ask them to discuss who won, and who lost, when that technology was introduced.”
“Oh, and they should look at what things changed, and to what degree,” Bill replied.

I sat back with a smile as they took off throwing ideas back and forth: ideas that I had literally paid for in blood. Oh, well. I guess that’s why I had needed the muses’ intervention and they hadn’t. Like Pop said, I’m not always the sharpest tool in the shed. But with some help I get there eventually.

“Hey, guys?” I interrupted after a couple minutes. They both turned to look at me.

“Yeah?” Bill replied.

I pointed to the pitcher on the table, now empty, and raised my glass, also empty.

“Care if I jump in with you on the beer? I’ll get the next one.”

Jeff looked confused. “Did Mary run out of Guinness?”


Bill looked at me for a moment then at Jeff. “If it wasn’t ex-Soviets, maybe it was space aliens who kidnapped him and warped his fragile little mind.”

“What is your fascination with space aliens, anyway?” I muttered to myself with a chuckle as I picked up the pitcher.

“Huh?” Bill asked.

“Just thinking about something a friend once asked me.” I turned toward the bar.

“Be right back.”

After getting back to my apartment later that night I decided to relax in front of the television for a few minutes before heading to bed. Surfing through the channels, I surprised myself by stopping on a channel showing *A Christmas Carol*. I was just starting to drift off
when Fred’s wife turned to face directly into the camera. “It looks like you had a good day today, Ian.”

“I believe that I did, Una. Thanks,” I replied, stifling a yawn as I sat up a little. “By the way, that’s a cute dress. The Victorian style suits you.”

“Now, Ian, be nice,” one of the female party guests said as she turned to the screen. “You chose the movie, we’re just trying to fit in.”

“I’m just kidding, Callie. It’s great to see you two. Although I was hoping it would be in person.”

“And why is that?” she replied.

“I’m, well, trying to get my life, and my career, straightened out. And I’ve discovered that my little voice of doubt is still around,” I sighed. “It would be nice to know that I’m headed the right way.”

“Did your conversation this afternoon with Frank go well?” Urania asked.

“Yeah, I think so.” I replied after a moment.

“And there is your answer. You will know when things are going the right way, as you put it. You don’t need us anymore.” She smiled. “However, we will be watching.”

“We should be going, Ian,” Calliope said. She arched an eyebrow and smiled. “Be seeing you.”

“Goodbye Callie,” I replied with a chuckle at the familiar phrase. “Be seeing you too.”

“Ian?” Urania said softly. “Could you come a little closer?”

I got to my knees in front of the television. “Yes, Una?” I asked.

“Give me your hand,” she replied.
I held my hand out toward the television and was only slightly surprised when she reached through the screen and took it in hers.

“I don’t think you need this anymore,” she said as warmth flowed from her hand to mine.

When she let go I sat back on the carpet with a thud. I looked at my hand and saw that my scar from the beach was completely gone. I started to say something, but on the screen Fred’s wife was receiving advice from Uncle Ebenezer that she should answer “tight as a drum” when it came her turn at Similes, and I was alone again in my apartment.

I sat where I was until the end credits began to roll. When I turned off the television and got to my feet I noticed a flat box wrapped in glossy paper sitting next to me on the floor. It was labeled, “An early Christmas gift.” I carried the package into the bedroom and laid it on the comforter.

After getting ready for bed I picked the package up again. I hesitated for a moment, and then tore away the paper. What was revealed inside the wrapping was a framed picture of Michael and Pyrrha standing before their home on the tor, with Calliope and Urania next to them. In the clouds above the tor I could make out the shape of a three-masted sailing ship. I cradled the picture in my hands for a minute, looking at each of their smiling faces, before setting it on my nightstand.

“Gods bless us, every one,” I said to nobody in particular as I turned out the light.
REFERENCES CITED


