

BIG FISH II: THE LOST SCIENCE OF STORY-TELLING IN THE ENGINEERING CLASSROOM

Abstract

The author has used story-telling extensively in the engineering classroom. A consistent request from students in end-of-semester evaluations is to include more stories in subsequent offerings of the course.

At the American Society of Engineering Educators (ASEE) Conference in Chicago, Illinois during June, 2006, the author presented a paper on the lost art of story-telling. The 2006 paper focused on *why* and *when* story-telling might be effectively used in the classroom. Examples include illustrating important points, giving coherent meaning to seemingly divergent topics, aiding students in remembering content, or simply breaking up a long lecture.

After the presentation at ASEE 2006, several members of the audience approached the presenter asking if they could acquire the necessary skills to become a good story-teller. This led to an interesting conversation as to whether story-telling is an inherent skill (like being funny) or an acquired skill (like telling a joke). In this paper, the author assumes that good story-telling is an acquired skill. Furthermore, literature related to story-telling methods will be briefly reviewed and the science (that is, the process steps) of good story-telling will be explained. In summary, Big Fish I told *why* story-telling is important. Big Fish II will discuss *how* to tell a good story.

Introduction

“Our lives are at once ordinary and mythical.”

Natalie Goldberg²

“The role of the storyteller is to awaken the storyteller in others.”

Jack Zipes²

“Everybody likes to tell a story. Little children do it effortlessly. Great artists do it with native talent and years of practice. Somewhere in between stand you and I.”

Sylvia Ziskind.²

At the American Society of Engineering Educators (ASEE) Conference in Chicago, Illinois during June, 2006, I presented a paper on the lost art of story-telling¹. The 2006 paper focused on *why* and *when* story-telling might be effectively used in the classroom. Examples include illustrating important points, giving coherent meaning to seemingly divergent topics, aiding students in remembering content, or simply breaking up a long lecture.

After the presentation at ASEE 2006, several audience members approached me asking if they could acquire the necessary skills to become a good story-teller. Oddly enough, I did NOT know the answer to this fairly obvious question.

The basis of the question is whether story-telling is an inherent skill (like being funny) or an acquired skill (like telling a joke). The paper assumes that story-telling is an *acquired* skill and uses several excellent references to establish a basic process for developing story-telling skills.

The paper is partitioned into two main parts, in addition to the requisite introductory and concluding material. The two partitions that make up the body of the paper are based upon story *remembering* and story *telling*. The assumption is that the most difficult steps of storytelling are first, remembering something interesting to tell, and second, telling the story in a convincing manner.

But first, may I tell a story? Part of the reason that I became a college professor is that my Norelco Triple Header broke. I had worked in industry for about 20 years, but was always a ‘closet’ teacher. Although my day job was as a middle manager in the automotive industry, I taught whenever and wherever I could, and quickly realized that teaching was my true passion.

Anyway, back to my Norelco. It broke. Being both frugal and an engineer, I decided to fix it myself. I went to a local store to purchase the parts and was amazed at how expensive they were. In the same aisle as the replacement parts were shaving cream and blade shavers. I am somewhat embarrassed to say that I had never, ever blade-shaved by the age of 40.

To save money, I decided to try!

That night after tucking my children into bed, I closed the bathroom door and lathered up my face. As my palms began to sweat I realized that I was nervous. I was not a pretty sight when I emerged from the bathroom 45 minutes later, blood-soaked red tissues hanging from various locations on my face. However, I could claim a partial victory by learning a new skill. I am happy to say that with practice, I became a better and better shaver.

One might logically ask what my shaver has to do with teaching college. At the end of that year (as I do at the end of every year), I was mentally cataloging my major accomplishments for the year. The first major accomplishment that I could recall was learning how to blade shave. The second major accomplishment was ... there was no second major accomplishment! I decided that if I could not come up with a major *professional* accomplishment from that year, then perhaps it was time for a change. By the end of the subsequent year, I had left my job in industry for a full-time teaching position.

The lesson. It takes courage (and sometimes a little bloodshed) to acquire a new skill like story-telling. Also, sometimes it is life’s little events that have significant personal meaning and lead to significant life decisions (like career changes).

Basics from Big Fish I

“Story-telling is first for the benefit of the audience, and only a distant second, for the benefit of the story-teller.”

Jeff Doyle

“To say ‘The king died, and then the queen died’ is not a story. To say ‘The king died, and then the queen died *of grief*’ – now that is a story.”

E. M. Forster²

“We are all more complicated than we appear to be, even the ones whom everyone makes fun of or pities, and all we ask – all we need – is the chance to say our piece and tell who we are.”

Garrison Keillor²

First, let us review some basic dos and don'ts from the Big Fish I¹. They are:

- Do stick to the important parts of the stories. Many stories (and story-tellers) die a lingering death by adding too much attention to irrelevant details of the story. Unless the specific detail is highly relevant to the story (as in, it adds ‘texture’), the audience/students will lose attention.
- Don't confuse story-telling with newspaper reporting. It is OK to capture the essence of the story without complete accuracy in details. Using the earlier shaving story as an example, the actual brand of the broken shaver does not matter.
- Do watch the student's reactions. Some students do not want to hear stories. Some faculty are not natural story-tellers. Give it time, and work into it slowly. As with other teaching techniques, one should ease into any new approach to see if it fits her/his teaching style and the student's learning style. Also, do not give up after just one try. Give yourself some time to hone your skills (like learning to blade shave).
- Don't become a ‘Cap'n Jack’. As an undergraduate student, I had a college professor, nicknamed Cap'n Jack, who would tell war stories of the time he spent in the Vietnam War. He would often digress until we had spent a significant portion of the lecture listening to “war stories” that were horrifically interesting, but completely irrelevant.
- Do ask for student's inputs. As with other techniques, it is recommended that educators occasionally ask for student feedback. I ask at least once/semester if the stories are helping.
- Don't begin a story with “I was so drunk once that I ...” While stories about our personal lives are often relevant, there are places where we just should not go.
- Do be sincere. Telling stories from the heart are OK. Every semester, I tell my students how I met my wife (at the Cincinnati airport). The students (both men and women) love the story.

Additional Basics

Many of the following points come from excellent books by Maguire², MacDonald³, and Simmons⁴. Maguire focuses on personal storytelling, and is the source of many of the approaches mentioned in this paper. MacDonald focuses on telling folktales, and could be used to develop skills related to telling a different type of story (folklore, rather than personal storytelling).

One additional basic is related to how ‘big’ or ‘little’ a story needs to be in order to be worthy of retelling.

Big stories vs. Little stories. When we are asked to recall a story, often the first stories that come to mind are the ‘big’ stories of our lives – the birth of a child, when we met our spouse, the death of a parent, some major academic success. These stories naturally come to mind because they have had some significant impact in our lives.

However, please recall that the students must come first in our story-telling. Thus, it is quite likely that our students have not experienced many of the events that are so deeply meaningful to the story-teller. That is, most traditional students are not married, do not have children, and their parents are likely to be still alive. Telling a story about the birth of a child to a group of students is similar to telling a plumbing joke at fishing convention. Much of the audience will not understand the reference.

‘Little’ stories are quite the opposite. Little stories are carefully crafted, personal stories about experiences that are generally common to all of humanity. They are not epics, nor will they ever be a movie at the local cine-plex. However, your students can relate to them personally. Perhaps you lived a half dozen little stories already this morning. As an example, I told a story earlier about learning to blade shave. It is a universal reference that all men and women can relate to.

Little stories are more appropriate than big stories for the classroom. Little stories occur around us frequently. As I mentioned, I am sure that you have already lived some worthy, little stories today. In order to see the little stories, we just need to be keenly observant to the human condition. A comedian was recently interviewed on television. When the comedian was asked where her material came from, she replied, “I woke up”.

Another basic skill is related to accuracy. The question is how historically accurate does a story need to be before we should tell it to our students? I begin this discussion with the following quote:

“Think of storytelling as painting a picture, not taking a photograph.”
Donald Davis²

Accuracy. It is worth adding more detail to one of the points from Big Fish I. Story-telling is not the same as reporting news. With all due respect to James Frey and Oprah Winfrey and the Million Little Pieces debacle of a few years back, story telling is a recollection from our own perception, not a newspaper report of an historical event.

When in the process of story-telling, we should not be paralyzed with the need for accuracy. This does not mean that we have latitude to lie, but we do not need to re-create actual dialog and pin-point accuracy for our stories. We just need to be accurate with our perception and use that perception to make the story meaningful to the audience, our students.

Using the earlier shaver story, it does not matter whether it was my brother-in-law, mother, child, or I who was learning the new skill. It does not matter whether the skill being learned was shaving or painting a picture. The major lesson being communicated is that acquiring new skills takes some risk.

Remembering

“The present is only a moment and the past is one long story. Those who don’t tell stories and don’t hear stories live only for the moment, and that isn’t enough.”
I. B. Singer²

“When the student is ready, the teacher appears.”
Chinese proverb

The first potential difficulty for becoming a storyteller is remembering a story worth telling. The purpose of this section is to offer some techniques for vividly recalling memories.

We have established that little stories are more appropriate than big stories. We have concluded that we do not have to have complete accuracy in our memories (like a photograph), but we do need reasonable perception of our memories (like a painting). Now, let us dig around in the attic of our memories.

The first step is a set of exercises that encourage our memories. Many of these types of exercises are used in psychology. This paper will mention two general approaches, and specific exercises for each approach. The two families of methods are induction, where we start from the memory and work forward to its meaning; and deduction, where we start with an image or meaning and work backward toward a memory. The dictionary defines *induction* as the act of deriving general principles from particular facts or instances. In contrast, *deduction* is defined as inference by reasoning from the general to the specific.

Some excellent inductive methods mentioned by Maguire² are the use of *lifelines*, *images*, and *making stories happen*. Each will be briefly described below.

A lifeline is just that, a picture on a sheet of paper about our own life. Draw a straight line with hash marks indicating every 5 to 10 year increment. Next, draw branches on the lifeline when a significant event occurred. Now, spend some time recalling very specific details about each of the branches. Think about when you decided to go to Graduate school, when you met your significant other, or when your family moved as a child. With practice, it will become easy to remember some very explicit details to these personally significant events.

The second method is the use of images to bring back memories, where images are defined as photographs, pictures, and/or floor plans. An image is some pictorial or iconic symbol that has meaning to us personally. At first I did not think that this method would work well with me because I have no talent as an artist. In fact, my artistic development ended in about 2nd grade. Then I recalled that when I found out that my parents were moving after I graduated from high school, I drew a complete set of architectural plans for the house that I grew up in. I still have this set of drawings, and they bring back particularly strong memories of my growing up. As another exercise, draw a map of the neighborhood where you grew up. Recall every detail that you can – a tree that you once climbed, where your first ‘crush’ lived, and where your bus stop was.

The final inductive method is to make stories happen. Actually, this exercise is not so much recalling previous experiences as it is being conscious of new experiences as they happen. By that, we are often caught up in a situation that will clearly make a good story some day. We may (or may not) realize it at the time. But almost immediately afterward it is quite obvious that we have just lived a good story, one that bears retelling.

Frankly, I find this last method one of the most useful for me. As an example, I can recall almost getting into a fight in the church parking lot because someone refused to merge. After the accident, as the nice gentleman held both of my lapels tightly in his hands I smiled. While placing my hands in my pockets, I thought that this would make a great story someday.

Deduction works in the opposite direction as induction. In induction (the previously discussed method), we find our memories and then try to determine why they are so meaningful. In deduction, we begin with a perception or idea, and then look for a memory that matches.

An excellent method for deducing memories is to work backwards from a concept to a specific memory. As an example, consider the word ‘July.’ Simply close your eyes and come up with a memory related to that word. Perhaps you will be amazed at how detailed your memory is.

As other examples that may be appropriate for the classroom, consider the phrases ‘teamwork’ and ‘academic difficulty’. Each of us could come up with a story about each of these topics that may be appropriate when students are having difficulty working in groups for the first time, or after returning a particularly difficult exam, respectively.

Telling

“Storytelling is a vocal art. What makes a told story appealing to its listeners differs considerably from what makes a written one pleasing to its readers.”
Jack Maguire²

“Through stories, we reach across the rifts not only of gender and age but also of race and creed, geography and class, even the rifts between species or between enemies.”
Scott Russell Sanders²

The previous section focused on skills related to remembering the story. This section focuses on skills related to telling the story.

A first realization is that the skills required to tell a story are related to, but not the same as, skills related to writing a good story. Another realization is that, as scholars, we are generally trained and experienced in relying on the written word. So the question becomes, what is unique about stories that are told rather than written.

Preparing to tell the story. The first step in telling the story is to ensure that you know the story. Stories are told much better when they are not a memorized recitation. Also, every detail should not be written down. Instead, think of your story in terms of the key points, or ‘scenes’. Always remember, and if necessary, write down the key scenes. Story details may be altered, or skipped altogether, but the key scenes are the glue that holds the story together. Worded differently, the key scenes form the *storyboard*.

The appropriate time to tell a story must be chosen. I will sometimes tell a story at the beginning of lecture as a transition from social time between students to lecture time. I also tell stories when I feel that the students are beginning to fade. During the course of a 90 minute lecture, I may tell as many as three stories, but it is typically closer to one or two. The stories are not long or complex, and usually last only a minute or two.

If the students are particularly interested in the topic (and the topic is germane), then I may spend some additional time on the details. As an example, I spent a significant amount of time in industry prior to joining academia. Students are often interested in my experience using the techniques and methodologies discussed in lecture while I was in industry.

Finally, as stories become more a part of your classroom experience, it is important to have some *knapsack*² tales. Knapsack tales are generic tales that generally work in every situation. The details may be altered slightly to fit the circumstance, but the key scenes remain the same. These stories are typically used to break up the lecture, and may or may not, exactly fit the topic at hand. Some knapsack problems of mine are related to my brother’s Chihuahua and to my grandparents.

Telling the Story. The approaches below are mentioned by Maguire² in his excellent book *The Power of Personal Storytelling*:

First, prepare your listeners for the tale. An introductory sentence, like “I’d like to tell a story” lets the students know that there is a pending transition from traditional course material to a story. Similarly, end a story with a phrase or special emphasis so that students know that you are transitioning from the story back into the traditional lecture material.

Adding dialog between people helps to bring the story to life. Some books suggest adding distinctive vocal styles for each speaker in the story, but I personally have great difficulty with this approach. All of my accents and all of my vocal styles sound the same. So much so that it has become somewhat of a family joke in that all of my accents sound like a pirate – “Arghh Matey!”

Use body language, gestures, and postures to communicate the story. As an example, instead of saying “He scrunched up his face and said ‘Hi, my name is Joe’”, actually scrunch up your face (and possibly alter your voice) and say ‘Hi, my name is Joe’.

Vary the pace and tone of the story. It is human nature, particularly when first using story-telling to rush through a story. Brief pauses and varying pace may add emphasis to key points of the story.

When possible, appeal to all five senses. In my earlier shaving story, I mentioned that the tissues that were hanging from my face were red, and could have mentioned the silence of the household as I made my first attempt, or the mint-scented shaving cream. Any of these details will appeal to the senses and help your students to better ‘live’ the story.

Finally, it is essential to maintain rapport with your listeners. Always remember that the stories are told for their sake, not ours. If the students are rolling their eyes or otherwise not accepting the gift of the story then perhaps it is time to quickly conclude and try again another day.

This is a story about telling stories. I was invited to a fathers-and-children family camping trip during the summer of 2006. The plan was to camp under the stars and enjoy a canoe trip along a picture-perfect river in northern Michigan. We were invited by a dear friend, Jeff, who is a builder by trade and a professional story-teller by passion. As part of the camping trip, Jeff always tells a story around the crackling campfire on Saturday night.

Since I too am somewhat of a story-teller, I decided to risk telling the ‘warm-up’ story before Jeff told the ‘main-event’ story. As the youngsters leaned in to hear me tell my story, I burst forth with one of my proven favorite knapsack stories. When I concluded, I expected some laughter, or at least nodding heads of approval. I got nothin’. The kids around the campfire were expecting a completely different kind of story told much better by a professional. On the next camping trip, I will just sit back, listen, and enjoy.

The lesson. Picking the time and place of telling a story is important.

Summary

This paper is meant to complement my original Big Fish paper at ASEE, 2006 in Chicago, IL. Big Fish I motivated *why* to tell stories. This paper introduces *how* to tell stories. The paper is partitioned into a discussion of some basic skills related to storytelling, such as telling ‘little’ stories, rather than ‘big’ stories; and the need (or lack thereof) for historical accuracy.

Next, the main body of the paper is partitioned into two main sections: Remembering and Telling. These sections assume that some of the most difficult tasks related to story-telling are remembering stories worthy of telling, and then developing the skills worthy of telling the story. The skills related to remembering include both inductive and deductive techniques. The story-telling skills include preparation and actually telling the tale.

May I tell a final story? In fall semester, 2006 I was teaching an introductory programming language course that I had never taught before. I thoroughly enjoyed the students in the class, but was just as thoroughly bored with the material. About half-way through the semester, I recalled that I had not told a single story in the course (I was so concerned with my grasp of the course content that I had forgotten one of my teaching fundamentals.) After recalling how much I enjoy story-telling, I used this method for the remainder of the semester. Both students and teacher enjoyed the balance of the semester much more. It is interesting that story-telling actually brought the stress level down in the classroom, rather than ratcheting it up.

For most people, story-telling is an acquired skill, not an inherent skill. Like many acquired skills, one needs to learn it by practice. I hope that the exercises and skills discussed in this paper will assist any reader in becoming a story-teller in the classroom. With practice, story-telling might become another standard technique that an educator might use for the students' benefit.

By the way, did I tell you the story about how I met my wife? Well, I was at the Cincinnati Airport and ...

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