

Spirituality and Professionalism Symposium, March 2010

Rosalie Dance, Ph.D.
Associate Professor of Mathematics
University of the Virgin Islands

A Teaching Perspective

Abstract

I will discuss two aspects of this topic as they relate to my practice. First, choosing a profession is one of the most important decisions we make in our lives. Making that choice based on my core beliefs was important for me, and choosing among the opportunities that came my way throughout my professional career using the same reasoning equally important. Second, as a teacher, recognizing that many of my students were not achieving their full potential due to factors that related to neither their mathematical ability nor, in some cases, their effort, I have tried to help students to strengthen their self-confidence and to find an inner calm in which to work.

.....

Symposium Panel Talk

There are deeply spiritual reasons for studying mathematics.

- Its beauty
Beauty nurtures the spirit. For those who see the beauty of mathematics, its study nurtures the soul.
- The power and efficacy of mathematics as a problem solving tool
Mathematics doesn't solve problems; we do. But if we know how to model our problem mathematically and to use mathematical methods to investigate it, we gain insight into the problem and efficiency in finding solutions.
Mathematics helps us understand
 - What happens when drugs enter the bloodstream
 - Populations – how they grow, what happens when limiting conditions come into effect
 - Epidemics – the spread of diseases
 - Declines in fish populations – how much of a fish population can you harvest every year and still have a stable population of them in the sea for the coming years?
 - Why diseases like sickle cell anemia and cystic fibrosis, which depend on recessive alleles, nevertheless have persisted
 - How arms races escalate to war or to economic collapse

If you want to make the world a better place, it helps to have mathematics in your toolbox.

- To enable you to empower others by teaching it
 - In our society, mathematics is highly valued, and those who can do it well are often held in high regard.
 - One of the best things we can do for another person is to give him the opportunity to acquire the skills and knowledge that permit him to take control of his own future. Learning mathematics does that; and a little bit more: knowledge of mathematics often earns the person immediate respect, thereby enhancing the degree to which the decisions made about her life are her own decisions -- lessening the probability that her paths will be blocked.

- This was why I made my choice of profession. I love mathematics for its beauty and problem solving power; but I teach it because this world needs changing and I truly believe that knowledge and skill in mathematics can greatly enhance a person's ability to control her own destiny.

But there is another side of this coin; of this respect that I claim for holders of mathematical knowledge. (An "evil twin", let's say.)

Mathematics is held in high regard for good reasons; its beauty and its problem solving efficacy. But there is also a notion in our society that mathematics is very difficult -- that only an elite few will be able to master it. This is a false notion, but so ingrained in popular culture that many, many students of mathematics have to first overcome anxiety, self-doubt, and stress in order to learn mathematics. And then they have to overcome all three again every time they need to show what they have learned on a mathematics test.

Happily, there are ways to do this. A key is mindful awareness. Mindful awareness can focus how we

- Deal with suffering
- (how we) Transform trials into wisdom
- (how we) Discover our path and our purpose
- (and) Interpret our personal connectedness to our community and our world.

I am a member of a network of educators, Kindergarten-University, who practice mindfulness and discuss mindfulness and its practice in our profession. www.mindfuled.org It is a network of educators encouraging each other to be explicit in helping students learn mindful awareness so that they can better become who they meant to become.

I offered a workshop earlier this semester to calculus students who suffered from stress in mathematics exams. Good students, intelligent people; but stressed.

We began by watching our minds the way you might watch the stage of a theatre – each of us tuning in to our own awareness for just 5 minutes. Then we thought about what we experienced; how much of it was related to anxiety or things we are stressed about, whether in the past or the future. Noting that something like what our minds did during that particular 5 minute interval occurs about 70,000 times a year, and multiplying the number of negative thoughts and feelings you had by 70,000 illustrates that our minds play a significant role in creating stress.

If we are able to become more aware of the negative thoughts and negative feelings (anxiety, self-doubt, stress) that enter our minds and recognize that they are *transitory products of mind*, we can just be with them, understanding that their primary significance lies in what we do with them. - Alternatively, we can develop ways to replace them with positive thoughts and feelings to help us live a less stressed and less anxious life.

We can use short periods of meditation as one way to respond to our negative thoughts in a healthy way. The breath can assist us in *being with* strong emotions, stress, lack of confidence, frustration, It can help us hold those feelings in our awareness without getting lost in them. So we practiced a short, guided meditation that we can all use to put ourselves back on track, regain our confidence in what we have learned and confidence in our skill in using it. Would you like to try it?

- Sit erect, shoulders relaxed, both feet on the floor
- Focus on your breath
- Coordinate your in and out breaths with the phrases of the meditation verse:

Bell

In/Out
Deep/Slow
Calm/Ease
Smile/Release
Present moment/Wonderful moment

Bell to end.

Students have told me about ways they have used this process:

- to create a beautiful sense of calm;
- to recreate their self-confidence;
- to re-establish their belief in themselves.

For myself, I try to practice my tradition of holding an issue or a person in the Light. This is based on visualisation instead of breath.

The purpose is the same: to create a sense of calm in a situation or in a person; to establish an environment that re-creates students' self-confidence and belief in themselves.

Holding students in the light. Holding an exam room in the light. Holding self, she who wants to facilitate learning, in the Light.

The meditation verse and the act of holding someone in the light are both processes to focus positive energy, calm, and strength where they may be wavering or nearly lost. Teaching and learning effectively are strengthened by focusing our inmost selves to enhance conditions for learning.