

## **Teaching Philosophy Statement**

### **Frankie Stewart**

Just over thirty years ago I accepted a short term, or so I thought at the time, teaching position in higher education and happily have never looked back. I discovered a profession and my career vocation in one. I consider myself extremely fortunate to have discovered an occupation in which I continue to relish the challenge of imparting knowledge and understanding to the next generation of engineers and am always gratified with the rewarding satisfaction experienced when I achieve that goal. To this day I find myself engaged and energized by the topics I teach and my ambition is to engender that interest and enthusiasm into my students and their learning experience.

Plato once said '*All learning has an emotional base*'. This statement is supported by my own reflection of my undergraduate studies. I recall that my peers and I always appreciated professors who displayed genuine interest in their courses, who had enthusiasm and passion for the course material and who respected their students as individuals and who were sincerely concerned that the students engaged with the subject and effectively understood the topics covered in the course. This awareness has always underscored my approach to teaching, firstly at an organic level when I started out and later at a more conscious level as I was exposed to formal educational research literature. Indeed when I finally decided to pursue PhD studies late in life it was the exploration of students' emotional competencies and their relationship to academic and workplace achievement that spoke to me and sustained my interest and motivation to persevere with the degree. I am delighted to say I completed my journey on the PhD road and graduated in 2013.

Therefore I consciously strive to provide an engaging, stimulating and caring environment in all my courses. I endeavour to build a rapport with my students which promotes a relaxed, mutually respectful classroom atmosphere where thoughts, questions and discussions are continually encouraged. I start each course by having students write their first names on tent cards and displaying them to me during class. I always attend the smaller laboratory sessions of my courses and so when the classes are large I use the laboratory periods to gain familiarity with the individual students. After two to three weeks I am able to call upon many students by name which is appreciated and often acknowledged by them.

I purposefully stop and encourage students to ask questions to make them realize that teaching is a two way street and they must also invest in the learning process. Once a relaxed, respectful learning environment is established where students realize that questions are welcomed and addressed I find I do not have to prompt so much for them to engage.

Engineers have long been recognized as distinctly active and extremely visual learners when compared with a general student population. They like to process information input by trying it

out, usually when working with others with whom they can then discuss their observations and conclusions. They prefer material to be presented to them visually in pictures, diagrams or videos rather than in a written textual form. Being cognizant of these facts, I ensure that my lectures contain multimedia instructional materials interspersed with active exercises. In addition, in all my courses I have a laboratory component so that the specific subject theory is also reinforced through active engagement. In the laboratories the students interact with the physical hardware and software where they are then applying the theoretical in a hands-on experience which significantly improves the learning and understanding process. They always work in teams in some laboratories so they can help each other and confer on their respective understanding of what is happening and why. Additionally, I always attend the laboratory periods of my courses and consciously move around and engage the students with questions about what they are doing and why. By doing this it is my intention to reinforce the particular theory points, ensure that they understand the how of the physical application and the why of the resultant system actions.

Over the years with increasing knowledge and awareness of pedagogical theory, and in particular the more recent significant increase in the scholarship of engineering education, I have continually reflected and reassessed my instructional methods. I find that I have and continue to favour the problem based learning (PBL) approach. It is crucial that students develop critical thinking and assessment skills as they progress through their undergraduate studies. In all my upper year courses I consciously pose problems by providing a general outline as to the solution or system design functional requirements and then hold back (which I acknowledge as an educator can be hard) and wait for the students to ask clarifying questions and request additional information as they progress a system assessment, proposed solutions and ultimately to their chosen solution. Functioning more as a facilitator than a 'sage on the stage' is hard, as you want to provide them with all the information they need at once, but I have seen the benefits to such a role when I observe the students finding their own way through and gaining a more thorough appreciation for the theory, understanding of the application and sense of satisfaction with their resulting solution. In one design course specifically the course is all project work and the critical skills and assessment capabilities development I observe in the course students over the term is significant and gratifying using the PBL approach. Additionally in this course I purposely rotate the students through four different team makeups during the term to develop their capabilities of functioning within a team, in effect their intrapersonal and interpersonal skills. Specifically the improvement of their communication, negotiation, problem solving and presentation skills is clearly evident as the course progresses. As confirmed in my emotional competencies research, this skill set will be crucial to them in their success in the professional workplace and I have a duty to help them develop these important abilities. Further, I encourage students to participate in various extracurricular activities such as annual Faculty and provincial engineering design competitions, for which I have been a judge in the past, to expand their horizons outside of the program specific course material and exercise their 'soft' skill set.

Student support is also required outside the structure of the lecture or laboratory and so I make myself available in my office as much as possible. When in my office I always keep my office door open so students passing by can stop and talk about course related issues or just engineering and/or professional inquiries in general.

In summary, I believe I am successful in my teaching because I provide an educational experience that integrates both active learning and collaborative learning methodologies, incorporate supportive multimedia instructional technology and foster a stimulating, inclusive and engaging atmosphere for students in my courses. When I started teaching at Ryerson some thirty plus years ago I quickly realized I had found my calling. I am still enthused about the job after all these years and am rewarded each time I see a look of understanding and appreciation of a concept register on a student's face.