



DEPARTMENT OF THE ARMY
UNITED STATES MILITARY ACADEMY
West Point, New York 10996

REPLY TO
ATTENTION OF

MADN-MATH

11 March 2008

MEMORANDUM FOR Me

SUBJECT: Reflections on Teaching...and Educating, or Educating...and Teaching

1. Why are we here? What is teaching? What is educating? The answer to the first question is simpler than we may think...if scoped. I am going to limit the discussion to what directly relates to the letterhead these words are written on...I'd rather have the more existentialist discussion in the sun on my back porch, in front of a grill. We are here (at West Point) to accept the gift of our Nation's sons and daughters and help them develop into the leaders of character that will guide the world into the future. People with many different roles are here at USMA...my job description is that of an instructor in the Math Department. As an instructor, what do I do?

- What is instruction? What is teaching? I see these questions to be similar, but I believe that instruction is a bit more specific than teaching. I see an instruction as being analogous to training. I have a certain circumstance and would like to be instructed as to how to handle the situation. I believe that instruction is, in a way, fixed. Many people view mathematics in that way...after all, don't all math problems have an answer?
 - I see teaching to be a philosophical generalization of instruction. I will instruct you on how to do long division, but can I really instruct you on the ideas of right and wrong? In my opinion, no. I *can* however, "teach" right from wrong. However, I view teaching to also but very dependent on situations. How did we learn right from wrong? We did something "right" and mom and dad praised us. We did something "wrong" and mom and dad punished us. We were able to apply those experiences to similar experiences in the future and, over time, developed the sense of right and wrong that we have today.
 - Jesus Christ was the greatest teacher in history. When his disciples addressed him as "Teacher", they were about to give him a situation they were unclear about and ask how to best address the situation. The situation at hand is *known*, the resolution is unknown.
- What is education? I believe that education is even more abstract than teaching. A quote that I have unfortunately not been able to successfully attribute, but often cite compares training with education. I would also argue one could substitute the word "teaching" for the word "training." I believe this quote concisely sums up what it means to educate.

"Training is preparation for the known. Education is preparation for the unknown."

So, why are we here? Why am I here? Today's world is dangerous...unpredictable...**UNKNOWN**. So...I am not here to instruct...I am not here to teach. I am here to *educate* future military officers and servants of our nation about what it means to serve, to lead, be prepared for the unknowns that await them.

2. What does the education that I facilitate provide to my students? I have chosen my words carefully. I believe that I *facilitate* the education of my students, I do not *provide*. A person's education is deeply personal. One must *choose* to be educated. There is a quote in a book by Bruce Wilkinson, entitled "The Seven Laws of the Learner" that I summarize "[education] is the art of giving students what they need to be able to learn." I understand that I cannot force a student to learn. However, if a student chooses to learn from me, I will exhaust every means I have at my disposal to give the student what he or she needs. I don't believe that education is consistently standing in front of a class with an agenda and lecturing on a topic. I certainly don't believe in teaching to any certain test...unless it's the test of life. Each student is unique, possibly requiring different information, classroom approaches, or even different amounts of time. An educator assesses what students need and provides for those needs.

3. Why choose math? I teach math because I believe that aptitude in mathematics is a powerful and relevant skill. I use mathematics as a framework to expose students to the use of analytic, critical thinking skills to solve problems in a systematic manner, whether they involve numbers or not. The ability to break a problem into its most basic pieces, solve the problem, then reflect on the solution to interpret and communicate it to any audience has served me well in my military career. I want to show you how it can serve you well in yours.

4. Mathematics as a language. I believe that mathematics is a language, just like English, French, or Japanese. It tells a story...the letters and numbers are the basic building blocks, the equations are sentences, the word problems the paragraphs. Mathematics is a language that is understood across the entire world, because it is based in universal truths. If you understand the language of mathematics, it is possible to have a whole new world opened up to you.

a. Henry Ford said, "If you think you can, or you think you can't, you're right."

b. Too many people see math work and immediately say "I can't." Be open...let me show you that you *can*.

5. My goals as your teacher...my A, B, Cs of teaching: Assess, Be available, & Communicate.

a. Assess. I seek to continually assess where we are as a class, throughout the semester. This assessment, through checking of homework problems, completion of board problems, and quizzes will help me in focusing what the class needs that day.

(1) "Muddiest Point" cards. Periodically, I will hand out index cards on which students can write down the items that their "muddiest point," the one topic that is "clear as mud."

(2) After Action Reports (AARs). After each block of material, we will conduct AARs to determine what the class should change and what should stay the same.

b. Be available. When I am in my office, I am there for my students. They can come see me anytime, about anything, I *mean* it.

c. Communicate. I will do my best to talk about math at the “nuts and bolts” level. Albert Einstein said that any fool can make a concept more complicated. If we work together, we can make math easy to understand, Einstein’s definition of “true genius.”

(1) I will do my best to always remember that my first responsibility at USMA is to produce officers of character. I will discuss issues that are on my students’ minds or hearts... or on my mind or heart that pertain to officership and professional development. We’ll talk about current events. Candid discussion of what is going on in the world will help us make better decisions when we are faced with similar problems in the future.

(2) The math. I will make the math easy (and fun!) to understand. We’ll break it down to the nuts and bolts, and we’ll incorporate real problems that apply to your life and interests.

6. My expectations of my students.

a. Be Prepared. I expect my students to come to class knowing what they don’t know. That may mean doing the reading and completing the homework problems. It may mean something else. Know what you don’t know...”Sir, I don’t get it” is not the response I am looking for. The more specific a student is, the more successful we will be in getting past a given obstacle.

b. Be Professional. Know the standards set by the Army and USMA. You will adhere to these standards, the same as I will. If you choose not to meet or follow a given standard, expect to hear about it.

c. Be Ready. Together, we can make math class an hour you look forward to every day!

7. See the undersigned with any questions, Thayer Hall, Room 227B, 938-5627.

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Sciences