Teaching Manifesto

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Experience

In February 2001, I was hired as a full-time teacher at John Abbott College, and remained there until starting my doctoral studies at the University of Ottawa in September 2002. More recently, I taught at Dalhousie University as part of a post-doctoral fellowship there. I was also a Teaching Assistant while studying at both McGill and Ottawa.

Some of the courses I have taught have had multiple sections, entailing collaboration with one or more colleagues in setting common standards, including a common final exam, and a common marking scheme for the final exam. In other cases I have taught single-section courses, or both sections of a two-section course, and thus borne sole responsibility for that course.

In addition to lecturing, I also have much experience at tutoring: one of my obligations as a professor at John Abbott College was to tutor students for one hour a week in a Math Help Centre; the University of Ottawa runs a similar Math Help Centre, where I discharged the majority of my Teaching Assistantship duties—up to seven hours per week.

Term	**Institution**	**Capacity**	**Subject(s)**
Jan–Apr 2006	Dalhousie University	Lecturer	Linear Algebra* (Honours)
Sep–Dec 2005	Dalhousie University	Lecturer	Intermediate Calculus I
Jan–Apr 2005	University of Ottawa	Teaching Assistant	Logique Computationelle
Jan–Apr 2004	University of Ottawa	Teaching Assistant	Logic and Discrete Math
Jan–Apr 2003	University of Ottawa	Teaching Assistant	Logic and Discrete Math
Jan–May 2002	John Abbott College	Professor	Linear Algebra I
Aug–Dec 2001	John Abbott College	Professor	Statistics for C.Sc.*; Calculus I
May–Jul 2001	John Abbott College	Professor	Linear Algebra I*
Feb–May 2001	John Abbott College	Professor	Calculus I
Jan–Apr 1995	McGill University	Teaching Assistant	Calculus II
Sep–Dec 1994	McGill University	Teaching Assistant	Calculus I
Jan–Apr 1994	McGill University	Teaching Assistant	Calculus II
			*sole teacher.

Philosophy

Teaching mathematics is difficult, largely, because of its terrible reputation. Our subject is widely perceived as dry and difficult, containing facts (in John von Neumann's famous words) to be gotten used to, not understood. The last of these is very dangerous indeed—it is one of the most commonly-cited reasons for disliking, and even fearing, mathematics—and I employ a number of techniques to dispel it.

Firstly, I expound my belief that mathematics is, fundamentally, something one does; I frequently use the metaphor of playing a musical instrument. No amount of "theoretical knowledge" about mathematics (or, the piano) is an acceptable substitute for actually being able to solve a given problem (respectively, play a given tune). Thus, it is never enough to know a theorem: one must understand what it is for.

Secondly, I adopt a flexible and improvisatory lecturing style as often as I can. This has two major effects: by permitting the occasional interruption, it allows me to ensure that my students really understand what

I am talking about; and, by demonstrating a thorough mastery of the topic at hand, it gives my students the confidence to seek the same. Building confidence is a crucial issue—without it, students will simply not invest the necessary time.

Thirdly, I seek to describe both the origins of the topic at hand and its continuations. That is to say, I highlight the on-going nature of the history of mathematics. As a student I often did not really understand the material of one course until I was taking the next; as a teacher, I attempt to expedite this process by briefly pointing to topics that may lie beyond the course at hand, if doing so serves to illuminate, or to motivate, the present material.

Finally, while I generally choose homework and design exams based on conventional exercises, I grade them according to a somewhat idiosyncratic marking scheme in which a student who plainly knows what they are doing, but has remembered a formula incorrectly, will always do better than one who has remembered the formula correctly, but doesn't know what to do with it. Since I am clear with my students about this, they prepare themselves accordingly.

Results

The following are direct quotes drawn from the comments supplied by my students on the Dalhousie Univeristy Student Rating of Instruction Questionnaires for the two courses I taught at that university: Math 2001 (Intermediate Calculus I), and Math 2135 (Linear algebra).

> *"I thought Dr. Egger was a great instructor. I was forced to take this course because of my program, and because of Dr. Egger, I was able to understand much of the material and actually began to enjoy the class."*
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> *"Egger speaks very clearly and makes topics very easy to understand. His descriptions are very visual and he presents them in a way that actually makes sense."*
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> *"The instructor was readily available outside of class and was very helpful in answering questions. He was also quite helpful in discussions on material outside of the scope of class material."*
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> *"He related subject being covered to real world applications and always tried to illustrate where the mundane theory of today will take us if we take further courses in math. Made math interesting again."*
>
> *"I like that he gave practical examples and worked out as many examples as time permitted. Jeff went to great lengths to explain difficult concepts in plain language."*
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> *"This guy is more into his course material then any other prof I've ever had. Really helps you get excited to learn about the material when the prof is so enthusiastic."*
>
> *"Excellent class for a newer professor. I often don't expect as much from teachers who don't perhaps have the experience yet, but Jeff did a great job."*
>
> *"Egger is quite possibly the most entertaining professor in all of Dalhousie."*

Copies of the entire documents from which these quotes are taken are available upon request.