

Why I Quit My Job

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I quit my tenure-track position as an assistant professor this year and am looking for a job. People frequently ask me why I'm not looking for another academic job. Here's a sketch of the situation as I see it.

Students arrive at college woefully unprepared and with crippling misconceptions about mathematics (see Schoenfeld's article in the *Handbook for Research on Teaching*). We aren't very successful in teaching them (see the "disaster studies").

Many mathematicians appear to have concluded that most undergraduates cannot gain an understanding of mathematics compatible with theirs and that the "mathematically talented" few will learn mathematics under any conditions. The operational definition of "mathematically talented" appears to be "is successful in our educational system and can do mathematics" so the latter statement in the previous sentence is a tautology (also a great excuse for bad teaching and lack of care in graduate and undergraduate programs).

Undergraduates frequently appear to believe that knowledge is what Whitehead called inert knowledge and that learning is essentially memorization since that is often what and how they're taught before college (see Rohwer and Thomas's article in *Cognitive Strategy Research*). These beliefs, expressed by our students in college courses via evaluations and complaints, together with jam-packed curricula and large classes push us toward teaching material which is easily memorizable and easily graded, saving us time and arguments with students. Unfortunately it does nothing to dispel the image of mathematics as a collection of meaningless and useless formulas and procedures.

Mathematicians aren't unique in yielding to these sorts of pressures but mathematics perhaps lends itself to this sort of abuse more readily than other subjects for a variety of reasons—the ease with which it is formalized, its long tradition of being practiced (hence assumed to be understandable by) a select few, its popular image.

Colleges and universities (with few exceptions) do little to consciously combat the image of learning as memorization. It seems pointless and expensive to graduate students who cannot use what they have "learned." It also seems a losing battle to try to effect change by one course, be it simply a "well taught" class, "lean and lively calculus," or one of the specialized courses in "how to learn," "critical thinking" and the like, when other courses and the rest of society reinforce the opposite.

Teaching can also be quite depressing. Compare George Steiner's account of his undergraduate experience at the University of Chicago during the Hutchins era with Bill Holm's experience teaching English. First Steiner,

Thinking back on those exigent weeks, on the ferocity of the climate and the work load, on the unembarrassed competitiveness and intellectual ambition that the whole system fuelled, I can still feel a hammering excitement that no other university has ever stirred in me.

Now Holm,

For the better part of 25 years, I felt discontented with teaching in America. This is not a country that reads much, or believes that the little it is required to read has anything to do with the world of banks, cars and missile silos. . . .

After 25 years, I was near despair, ready to give [teaching] up and go to sea, when the universe dropped China in my lap. . . . China had an odd side effect: it saved my faith in teaching, and in the power and majesty of language. . . .

I came back to America after my year in China and tried teaching college again. I sank as close to clinical depression as I have ever come.

As an undergraduate I felt the excitement Steiner reports. After teaching thirteen years as a graduate and postgraduate I can easily believe that in twelve more I'd be near the despair Holmes describes.

References

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William Rohwer and John Thomas, Domain-specific knowledge, metacognition, and the promise of instructional reform, *Cognitive Strategy Research: From Basic Research to Educational Applications*, Christine McCormick, Gloria Miller, and Michael Pressley, editors, Springer Verlag, New York, 1989.

Peter Rosnick and John Clement, Learning without understanding: The effect of tutoring strategies on algebra misconceptions, *Journal of Mathematical Behavior*, vol. 3, no. 1. [Note added in 2010: This is one of the “disaster studies.”]

Alan Schoenfeld, Learning to think mathematically, *Handbook for Research on Mathematics Teaching*, Douglas Grouws, editor, Macmillan, New York, 1992. [Note added in 2010: Can be downloaded at http://gse.berkeley.edu/Faculty/AHSchoenfeld/Schoenfeld_MathThinking.pdf]

George Steiner, An examined life, *The New Yorker*, October 23, 1989.