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**TANTON'S TAKE ON ...**



**HAVING A PhD**



**DECEMBER 2015**

I was recently asked to give an impromptu public lecture when word got out I was passing through Calgary after conducting some teacher workshops in Northern Alberta. I accepted the invitation and gave the talk. And I was aware of a vocal "back to the basics" call amongst community members of the area - but I wasn't truly cognizant of the profound depth of concern and worry members of this call are carrying.

A very public social media post was placed about my upcoming visit. I am sharing one passage from it now, but ask you to ignore the comments on my character and reputation in it. (But feel free to email me if you would like me to explain my actual credentials, my publications, my choices for my career path, and my philosophy and approach to teaching mathematics.) This

passage illustrates -- albeit in an extreme manner -- an attitude in academia that has persistently bothered me, one that I would like to address.

The passage:

*For those who have received the invitation to his talk, be warned: the Calgary School Board has embellished his credentials to give their ideology credibility. According to one local respected actual mathematician, "James Tanton is not a mathematician. Even after doing a Ph.D. in mathematics at Princeton (which should have opened up many opportunities) he evidently couldn't find an academic job. I looked at his resume once and he doesn't come close to the academic standard required even for an assistant professor position in a university math department. I recall that he had only*

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*about one academic publication. Tanton instead seems to have chosen a career in arithmetic, lecturing to teachers and parents on the short-cuts and tricks that all of use from time to time but would never dream of formalizing into the bewildering array of so-called strategies that they try to pass off as mathematics these days..."*

(From <https://www.change.org/p/back-to-basics-mastering-the-fundamentals-of-mathematics/u/14238386> .)

In my opinion it is very limited thinking to expect that those who have worked hard to obtain a graduate degree in a pure research field, or any other field, to stay in academia, and to presume not doing so is a sign of disappointment, if not failure. Sometimes the question arises "Are we producing too many PhDs?" with the context for the question being that the academic job market is too tight to accommodate all the graduating folk. I say that the answer is no, let's encourage more people to enter our graduate programs! We need to let go of this idea that owning a doctoral degree demands a route to professorship.

Earning an advanced degree usually requires devoting four, five, six years of one's life to examining, probing, and solving a single problem. Talk about intense training in perseverance and profoundly deep analytical thinking. Let's have more people trained this way!

I say that the expectation of doctoral degree holders should be: *Now that you know how to solve hard problems, go out and solve big problems in the world.*

One can solve the world's big problems from within academia, for sure. But it is sadly limiting for academia to think that this is the only place for folk with this training to do significant and effective and astounding work. The world needs so many more people with this training working within it. Academia encourages and supports freedom of thought. It should encourage and support diverse freedom of action too.



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