

Tuning and What it Means to Physics

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Abstract

In the 60s, the word was relevance; now it's tuning. For physics, it means striking a resonance between the world of making a profit and the preparation of physicists. The international effort is designed to solicit the input of industry in restructuring the physics curriculum. This spells trouble for physics departments.

There is a move afoot called tuning. It originated in Bologna, Italy in 1999 in response to a need to ensure that students mastered certain competencies at sequential points in their preparation. This eventually brought in the requirement that students be equipped with marketable skills, which is the U.S. version of tuning. That's what happens with all these sorts of programs: they start with noble intentions, then they devolve to something not intended by their creators. Physicists need to keep their eyes focused on this virus making its way around the world.

Is an undergraduate degree in physics pertinent in the world of making a profit?

The author next year celebrates his fortieth year as a physicist, 25 years teaching, 15 years as an administrator. He knows therefore how administrators think. In tough economic times, departments that are thought to teach nonessentials are trimmed.

What does a four-year degree in physics do? Can you sell it to anybody? Can you obtain a job as an electrical engineer with it? Can you go to work at a nuclear power plant?

Physics is largely perceived as an abstract field of study. Physics is seen to be useless in the world of making a profit. Most people on the street have no understanding of anything we say. There's no sense beginning a discussion with them at all, no matter whether the listener is an attorney, English professor, or physician. No-one understands a single thing about anything we physicists know.

That spells trouble for physics in the tuning process. Since what we talk about is so far out of reach of humanity, tuning means our physics departments will not only be trimmed but excised altogether. In a recent discussion with a nuclear engineer, he asked me what my field of expertise is. I told him quantum mechanics. He said he knew absolutely nothing about it and didn't see how it has any relevance to anything. And this comment came from a highly intelligent person! How do others perceive us?

Have we become philosophers? Is that what our degree is in, philosophy? Are we philosophers who can solve difficult mathematical equations? Are we going to end up as a branch of the philosophy department, as mathematical philosophers? Will the sounds of the philosophy wing be filled with a mixture of Spinoza, Husserl, Einstein, Born, and Heisenberg?

In my four decades as a physicist, I've never made a single dollar as a physicist. I've taught physics and I've thought physics. I've enjoyed every single minute of it. I feel that I have an uncommon comprehension of nature. Is that worth it? Yes it is. It matters not to me if I'm moved to the philosophy department, just as long as I can teach physics. I may not be able to sell my degree to one single earthly soul, but I will resist with infinite impedance anybody who tries to make my degree relevant to the world of making a profit. It's my choice to be a philosopher of nature, and I will allow no industrialist to determine what I study. If you want tinkers, go to the engineering department.

Bibliography

Feder, T. "Tuning physics in the US", *Physics Today* **63**, 5, 2010.

Carroll, Robert L., Preface to The Eternity Equation, J.R. Rowell Printing Company, Charleston, South Carolina, 1976.

The Lumina Foundation, http://www.luminafoundation.org/newsroom/news_releases/2009-04-08.html

American Council on Education, "Tuning USA",
http://www.acenet.edu/Content/NavigationMenu/OnLineResources/Accountability/Tuning_USA.htm