

Zen and the art of physics teaching



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You know, I am beginning to wonder if, instead of physics, I shouldn't be teaching Eastern Mysticism. It sometimes seems that many of my students are becoming expert Buddhists under my guidance. Let me explain.

To start with, any mystic belief requires the disciple to be able to hold in their mind two contrary and apparently contradictory ideas at once. Zen Buddhism does this through the use of *koans*, which are riddles with no correct answer. 'What has this to do with physics teaching?' I hear you ask? Well, I'm sure that you, like me, have had a student who in part (a) of a question has correctly answered that the force responsible for keeping an astronaut and his satellite in orbit is that due to gravity. Then in part (b) they happily go on to tell us the astronaut is weightless because there is no gravity in space. Such a student would have no difficulty at all with part (c): What is the sound of one hand clapping?

When a student is given a *koan*, they are usually asked to meditate over it for some time. Now, Zen meditation is not a case of just thinking deeply. On the contrary, thoughts are to be allowed to come and go as they please, drifting leisurely through the mind, never being grasped at or forced. It is a state of deep relaxation, untroubled by the pressures and demands of the outside world, and one in which ignorance is totally accepted. Now, if that doesn't sound like the state of mind of one of your students

last period on a Friday, you're doing a better job than me! Come to think of it, it's not far off what they are like period 1 on Monday and period 5 Wednesday...

Finally, I am often reminded of this Zen story, which comes from the *Shaseki-shu*, written in the late 13th century by a Zen teacher called Muju:

During the Meiji era there lived a master called Nan-in. One day a university professor came to see him, to ask him about Zen. Nan-in, being a polite host, served the professor tea. He poured and, as his visitor's cup filled, he continued to pour. The professor watched the cup overflow and was perplexed. At first he was too polite to say anything but eventually he had to stop his host, saying "It is already full! No more will fit in!" "Just like the cup, you are full of your own ideas and speculations," replied Nan-in. "How can I teach you about Zen unless you are first emptied?"

Or, as Einstein put it, "Common sense is nothing more than a deposit of prejudice laid down by the mind before the age of 18". I'm sure that, had he been a physics teacher at school, he would have been happy to amend it to "...laid down by the mind by every teacher before me". Here's to emptying a few cups in the coming year.

Cheers!



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