Teaching Statement

Francis Xavier Timmes
01Jul2019

I’ve been teaching since about 1990. Mainly astronomy, physics, and math. Past institutional affiliations include UC Santa Cruz, the University of Chicago, and the School of the Art Institute of Chicago. Currently I teach at Arizona State University (ASU) and the MESA Summer School at UC Santa Barbara.

I specialize in large enrollment, online, introductory courses. For example, between 2015 and 2018 I was the instructor for the largest college-credit eligible astronomy course in the world, *Introduction to Solar Systems Astronomy*. ASU ended this experiment in 2018 and embarked upon a new experiment focused on business sponsors. Thus, my solar systems course is currently heavily enrolled with learners from Starbucks, Uber, and others. My other course, *Energy in Everyday Life*, routinely hits 4-figure enrollment numbers.

I subscribe to principles that create a culture of learning around inquiry, curiosity, and openness to failure. All of my courses are designed with these principles foremost in mind. In my view, effective science learning . . .

★ Excites.
The greatest challenges to education are disinterest and apathy.

★ Cultivates curiosity.
Questions that cultivate natural curiosity are better than the threat of a test.

★ Is active.
Effective learning is active, not passive. Watching a video is not enough.

★ Is applicable.
Use it or lose it: it is essential to apply what you’re learning as you learn it.

★ Is community driven.
A community that challenges and inspires you is invaluable.

★ Doesn’t discriminate.
Your age, country, race, or gender don’t determine what you are capable of learning.

★ Allows for failure.
The best learners allow themselves to make many mistakes along their journey.

★ Sparks questions.
The end of a great course isn’t knowing all the answers – it’s knowing what to ask next.

The strong appeal of astronomy to the public is a tremendous aid for cultivating an effective learning environment.

F. X. Timmes

Frank Timmes
Professor, School of Earth and Space Exploration
Simons Fellow in Theoretical Physics
American Physical Society Fellow
Senior Lead Editor, The American Astronomical Society Journals