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and a Passion for Chemical Thermodynamics

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Comments on the Teaching of Chemistry, Doing Chemistry Demonstrations,
and a Passion for Chemical Thermodynamics

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Abstract

The first part of this essay deals with interesting and effective and fun ways to teach chemistry. The second part is concerned with does and don'ts in chemistry demonstrations, i.e., how you and the audience can have fun and learn at the same time. The last part is a discussion of what it is that fascinates me in chemical thermodynamics.

Keywords: teaching chemistry, teaching thermodynamics, lecture demonstrations, chemical experiments, chemical thermodynamics

Introduction

Professor Letcher and I met at a thermodynamics conference in Toronto about 35 years ago and learned that we shared passions for four things: teaching chemistry, doing chemistry demonstrations, chemical thermodynamics and research in it, and certain hobbies like hiking and traveling and woodworking. We have collaborated over the years on a number of papers, and I have contributed to some of the special books he has recently edited. We correspond regularly, and my wife and I visited with him and his wife earlier this year (2017). In this essay I am going to write about some of the things I have learned from him and others about teaching chemistry in various ways.

Interesting, Effective, and FUN Ways to Teach Chemistry

1. What is Important

Perhaps the most important thing to keep in mind as a teacher is that if you are not openly and congruently passionate and interested in your subject, then why should the students bother listening? I recall a colleague who always walked into his classroom with eyes beaming and a face full of expectancy and joy. He was there to have fun and do what was most important to him in his life: teach and share and be totally immersed in his students and his subject. This is what he lived for, and it was evident in everything he did. We can all recall being bored into catatonic states by some teachers. Yet, the ones we remember most are the ones who were passionate about their subject, loved it, and respected their students. To a great extent being a teacher means that you are an *actor* on a special kind of stage. When you consider a lecture hall to be a theater, then you are on stage and performing. And yet, you are just the guide and facilitator since it is the student who in single combat really does all the work of learning. The bottom line here is that unless you are overtly enjoying yourself and having fun, you might as well do all of your teaching by referring students to a text book and just hand out your lecture notes.

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