

<u>Question</u>	<u>Answer</u>
Full Name	Iris Baiocchi
Affiliation	none
E-mail	ibaiocchi@quadlink.net
Phone Number	(253 521790) 7521790
Title of Paper	Laboratory classes: some ideas

Abstract

I have developed the approach described below, while teaching Electric Circuits classes, at CSU Chico, CA and Physics at Community Colleges in Upstate New York and Tacoma, WA.

Laboratory classes are an important component of any Science course, and as such they should provide ample learning opportunities. They should complement and reinforce the contents of a theory class or should provide an introduction to that class. They should provide enough challenge to keep the interest going, and they should be flexible enough to accommodate different learning styles; they should make the best use possible of individual student's problem solving abilities.

For that purpose, the laboratory should have enough equipment and material available to permit the students to set up the experiment themselves, the way they think it will achieve the expected result. Access to the Internet and computers during the work in the lab are important; they provide background information, and clarify definitions; they provide access to simulations, physical constants and replace calculators.

Results, as soon as measured and/or calculated, are published by the individual groups on the blackboard, in the laboratory, for everyone to see. The publishing of the results is the important step in this approach, because the significance of differences in results can be immediately evaluated and investigated, emphasizing the true value of experimental work.

The results obtained by different groups may differ because there were errors in calculations. Or the difference is due to a fundamental limitation of the set-up chosen. Calculations are immediately re-checked and, maybe, alternative or additional experimentation is needed.

Different groups also work at different speed. Using this approach slower groups are given the opportunity to check their work as they go along, by making use of the information published by the faster groups.

This approach to laboratory classes promotes discussion of the processes as they develop, and promotes a better understanding of the principles involved. Reports are kept to a minimum and pictures of the individual set-ups are taken and published on the web page for the class. Questions about lab activities are included in quizzes, tests and exams.