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Open Letter to Science Teachers: Are You Ready for the Third Generation?

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Open Letter to Science Teachers

Are You Ready for the Third Generation?

Conrad E. Ronneberg, professor of chemistry at Dennison University, Granville, Ohio, states in the June issue of *Chemical and Engineering News* that the first generation of NSF-sponsored texts such as CBA chemistry, CHEM Study chemistry, and PSSC physics, as well as BSCS biology, are totally inadequate and will probably be ignored by the new generation of science teachers.

Professor Ronneberg lists eight inadequacies of these first generation science texts:

1. They were written to conform to the ideas and needs of single science enthusiasts.
2. They ignore the interdisciplinary approaches called for today.
3. The teaching materials prepared cannot be used by 70% of the students.
4. The courses often omit treatment of whole areas of modern science.
5. The courses make no attempt to capitalize for teaching purposes on the machines and devices that are such an important part of modern living for every youngster.
6. The courses ignore the needs of the general students and future citizens.
7. The courses are encyclopedic in content with respect to what are called fundamental principles of modern science. Most students become lost or bored with a welter of details that have little or no bearing on their present problems of living. However, important as the topics may be to a professional researcher, they serve to alienate students from science.
8. They place the emphasis in presenting science to the beginning student on the end products of science—the so-called key principles and modern ideas of science.

For those of you who were involved in the development of the first-generation courses, do these criticisms sound familiar?

Second generation programs such as Project Physics and the Intermediate Science Curriculum Study involve the cooperative efforts of persons with expertise in many fields as well as aiming for the very large fraction of junior high and high school students now shunning science courses.

Do you agree with Professor Ronneberg's criticisms? Are you preparing your students for life in the 21st Century? What provisions are you making for the individual needs of your students? Are your science enrollments increasing? Why not? Are you moving away from JUST teaching CHEM Study, BSCS, PSSC or Project Physics in your classroom? Do your students know HOW TO observe, formulate hypotheses, classify, predict, formulate models, and measure? *Are you ready for the third generation? Are your students?*

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