

1989

## Science Education Initiatives for the 1990s

Carl W. Bollwinkel

Follow this and additional works at: <https://scholarworks.uni.edu/istj>



Part of the Science and Mathematics Education Commons

*Let us know how access to this document benefits you*

Copyright © Copyright 1989 by the Iowa Academy of Science

---

### Recommended Citation

Bollwinkel, Carl W. (1989) "Science Education Initiatives for the 1990s," *Iowa Science Teachers Journal*: Vol. 26: No. 1, Article 8.

Available at: <https://scholarworks.uni.edu/istj/vol26/iss1/8>

This Article is brought to you for free and open access by the IAS Journals & Newsletters at UNI ScholarWorks. It has been accepted for inclusion in Iowa Science Teachers Journal by an authorized editor of UNI ScholarWorks. For more information, please contact [scholarworks@uni.edu](mailto:scholarworks@uni.edu).

**Offensive Materials Statement:** Materials located in UNI ScholarWorks come from a broad range of sources and time periods. Some of these materials may contain offensive stereotypes, ideas, visuals, or language.

## SCIENCE EDUCATION INITIATIVES FOR THE 1990s

The following article was prepared by the National Science Teachers Association (NSTA) whose president, Dr. Hans Andersen of Indiana University, and I talked about these initiatives at an NSTA convention. Dr. Andersen believes strongly in these initiatives and asked me to publish them in the *ISTJ*. He also requested that I ask you to write to your congressman in support of all or part of the initiatives. I would urge you to do so and would appreciate receiving a copy of your letter which may be published in this journal if you so indicate.

--C.W.B.

**To resolve the problems inherent in science education today, four areas require immediate initiatives:**

- I. Teacher preparation and staff development**
- II. Curriculum development**
- III. Instructional support**
- IV. Research and dissemination**

### **I. Preparation and Staff Development Initiatives**

- \* Development of research-based preservice teacher preparation programs for elementary, middle and high school teachers that are designed cooperatively by science educators, scientists and practicing classroom teachers of science.
- \* Implementation of staff development programs for teachers of science who have a need to reinforce or enhance their science knowledge and science teaching skills.
- \* Recruitment of a greater number of highly qualified and competent individuals into science teaching (especially minority populations) and retention of these people in the science teaching profession.

### **II. Curriculum Development Initiatives**

- \* Development and implementation of more unified, in-depth, hands-on science curricula for preschool, elementary, middle/junior high and high school students.
- \* Development and utilization of evaluation and assessment tools that measure student achievement of higher order thinking skills.
- \* Production of materials designed for instructional administrators and lay people (e.g. principals, superintendents, school board members and parents) that would provide better understanding of science education needs of students.

- \* Implementation of curricula for preparing science laboratory technicians to assist teachers.
- \* Development of curricula that would instruct teachers in the appropriate uses of technology in the classroom.
- \* Development of curriculum models that integrate science with the learning of other elementary school subject matter.

### **III. Instructional Support Initiatives**

- \* Provision of appropriate electronic technologies to science teachers at all grade levels.
- \* Provision of funds for the construction of adequate science teaching facilities (e.g., activity centers and laboratories).
- \* Development of regional science centers that would make the following available to local teachers:
  - A. models of effective teaching practices
  - B. science updates
  - C. research opportunities
  - D. media
  - E. science equipment and supplies

### **IV. Research**

- \* Establishment of long-term funding for regional science education research centers that would conduct and disseminate research on:
  - A. designs of science-teaching facilities
  - B. appropriate uses of technology
  - C. science curriculum for all students
  - D. instruction
  - E. science teaching practices that are taking place outside the United States