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# Science Education Initiatives for the 1990s

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## 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