

# TEACHING SCIENCE IN A CLIMATE OF CONTROVERSY

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## Introduction

There are a number areas of controversy in science teaching today, but our concern here is the Creation-Evolution dispute.

(give examples of strong feelings on both sides, e.g., some quotes in reaction to *TSCC* booklet, Asimov letter)

Teachers are typically caught in the middle

If they teach evolution, flack from evangelical parents

If teach creation, flack from some other parents

If don't teach one or both, also get flack

What is a teacher to do?

## What is Science?

Two distinct definitions:

explanation w/o invoking supernatural

explanation of how things really are

Confusion arises when opponents use different definitions, or unconsciously switch back and forth, or assume that two are equivalent.

(part of debate over whether evolution and/or creation is scientific comes in here)

Suggest teacher needs to clarify this ambiguity, noting that treating them as equal is itself to preach a philosophical/religious view (e.g., opening lines of *Cosmos*):

"The Cosmos is all that is or ever was or ever will be."

## What is Religion?

Also various definitions

beliefs regarding ultimate reality

worship of a supreme being

According to definition #1, religion already being taught in many classrooms where worldview "evolutionism" promoted.

According to definition #2, this is not what creationists are asking for in science classes.

## **How Can We Teach Science in a Publically-Funded Setting?**

**Public Funding** does not remove one's responsibility to teach truth, but it does raise questions re/ fairness in a pluralistic society (taxpayers are rightly incensed if they feel they are paying the salaries of people who are dumping on their views).

Obviously parents can send their children to private schools (as many are), but this still does not alleviate problem that they are helping finance public education.

Raises question whether first ammendment re/ estab religion is consistent with public schooling (which was not envisioned at time of Constitution); perhaps we need to adopt a voucher system as most of the other Western democracies have in seeking to solve this problem.

## **Recognizing the Limits of Science:**

Empirically based on limited database

Does best w/ mathematical, mechanical models

Problems handling operation of intellect

(so if an intellect involved in origin & operation of universe, may be missing something)

Helpful if students can see where science mistaken in past (for balance, Xns need to recognize where they have misinterpreted Bible in past too).

## **Distinguishing Known from Unknown, Fact from Theory:**

Science teaching in elem sch, HS, often even college does not clearly distinguish data from theory (e.g., quotation re/ daily life of Piltdown).

Creationists often sloppy here too (e.g., speculation re/ tidal waves during flood).

## **Discussing Open Questions re/ Origins**

1. Did the universe have a beginning?
2. Did life arise by chance?
3. Where did the first animals come from?
4. Do we share ancestry with the apes?

## **Handling the Controversy in the Classroom**

1. Don't avoid the subject, use it as an opportunity to discuss science on a topic in which most students are naturally interested.

2. Try to keep the discussion within boundaries.
3. Show respect for opposing views.
4. Consider the whole spectrum of opinion.
5. Seek common ground.
6. Watch your language.
7. Keep asking questions.

The last several sections (above) were borrowed from the booklet *Teaching Science in a Climate of Controversy*, authored by the members of the Committee for Integrity in Science Education of the American Scientific Affiliation. Copies may be ordered from the American Scientific Affiliation, PO Box 668, Ipswich, MA 01938-0668.