



THE HISTORY OF CESE and THE NEW MEXICO STATE SCIENCE STANDARDS

By Marshall Berman
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On October 8th, 1999, the NM State Board of Education voted in favor of a proposal to revise state science teaching standards to include evolution and related concepts, such as the age of the earth, which had been removed from the science standards approved in 1996. This success did not just happen. It was the result of hard work by a dedicated group of concerned New Mexicans.

This story of CESE and the New Mexico science standards evolved over more than three years, almost as long as the American Civil War; and our struggle is like that war and the subsequent century of civil rights struggles the war was meant to resolve - and didn't. It will take a long time to achieve the goal of a scientifically literate population that uses logic, reason, critical thinking and scientific information to make informed social, political, and educational decisions. A battle was won; the war still remains.

In June 1996, an Albuquerque Journal article implied that creationists were influencing New Mexico's science standards. Shortly thereafter, a few scientists met with Virginia Trujillo, the president of the New Mexico State Board of Education (SBE) to better understand the scientific and political ramifications of the proposed science standards and the stealth creationists on the Board.

Over the summer, the group of scientists and supporters grew to about a dozen. They wrote many letters to the editor, suggested changes in the standards to members of the SBE and the State Department of Education (SDE), developed an e-mail communications network, and made presentations to the SBE.

On August 22, 1996, the SBE, by a vote of 13 to 1, adopted a revised set of science content standards that removed all references to evolution and the age of the earth. [The lone "no" vote was cast by a creationist who believed the standards didn't go far enough in supporting his position.] Three years later on October 8, 1999, by a vote of 13 to 1, the SBE reintroduced modern concepts of evolution, geology, and science itself, back into the science content standards, benchmarks, and performance standards. How was this incredible reversal achieved, especially considering that a majority of the SBE members were the same in 1999 as in 1996?

It would not have occurred without the creation of a dedicated group of people, and the actions they took over that three-year period.

By the fall of 1996, the initial group of six activists had grown to about 27, including representatives from Sandia National Laboratories, Los Alamos National Laboratory, New Mexicans for Science and Reason,

the University of New Mexico, New Mexico Academy of Science, New Mexico Tech, and others interested in high-quality science education. On October 25, the group named itself the Coalition for Excellence in Science Education (CESE: www.cesame-nm.org). Its goal was and continues to be: Improving science education and science literacy for all citizens.

The CESE engaged its mission on a wide variety of fronts including:

- meeting with the NM Legislative Education Study Committee;
- meetings with the SBE and SDE;
- extensive writing of letters to the editor and presentations to organizations;
- soliciting support and allies across the state and nation;
- surveying and advertising the science positions of political candidates;
- supporting a science education bill and lobbying the state legislature; (the “Evolution Bill” passed the State Senate but failed in a House committee);
- gaining membership on and leadership of the Performance Standards Writing Commission;
- meeting with local school districts and providing assistance;
- drafting revised standards and getting the SDE to circulate them around the state;
- garnering approval of 71% on average of the survey respondents;
- getting members appointed to the state’s Instructional Materials Commission;
- developing a unique professional development model for science teachers to learn geology hands-on
- providing judges and cash awards for Science Fairs;
- publishing a newsletter (The Beacon);
- supporting candidates for the SBE;
- and, most important, campaigning for the SBE and getting elected!

Although most of these actions led to significant improvements in science education, they were all ultimately needed to finally effect the changes in science standards, especially the direct political action. Today, CESE has almost 450 members and continues to promote science and math education.

Philosophy, Speculation, and Lessons Learned

I think that evolution has produced a hierarchy of human relationships. Individual survival and family loyalty produce the strongest bonds. Next comes tribal affinity, extending to perhaps about fifty people. Beyond that, group loyalty becomes tenuous. Larger groupings of people require either a common enemy or threat, or strong shared interests and goals. The vast diversity of our relationships now encompass social, religious, ethnic, racial, or professional affinities, extending from small groups all the way to nation-states and even global issues. Science, logic, and critical thinking usually play only a small role in these group loyalties. Group norms and traditions often dominate thoughts and behavior. Hence, scientists and others conditioned to critical thinking are placed at a disadvantage when addressing reforms on educational, political, or cultural issues. They are upset when their facts and reasoning are not accepted. They are surprised when their attitudes and demeanor are treated as more important than their knowledge or credentials.

Given this aspect of human nature, I believe the most important action taken by CESE was to become part of the process – part of the tribe. If policy decisions concerning science standards, or indeed education in general, are political, then it is essential that scientists and their supporters become part of the political process. CESE did this when they provided time, effort and money in direct campaigning and participated in the election process.

Many lessons were learned over this journey:

- Persistence is essential; failures should only motivate the next steps.

- Diversity is very important; recruit advocates from all components of society, especially teachers, clergy, business people, and parents. Try not to be labeled “those scientists.”
- Understand the arguments of creationists and intelligent design advocates and be prepared to respond respectfully and intelligently. Understand the “fairness” argument that “both sides should be presented;” and how to respond.
- Avoid giving any appearance of arrogance.
- Get involved in politics.
- Run for political offices. If elected, gain the confidence and trust of your peers.
- The majority of people are moderate, but often uninformed. Reach out to all parts of the community.

Margaret Mead said: "Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has."