Glenn Branch [2]

03.14.2009

"Weaknesses" by the back door in Texas [3]

House Bill 4224 [4], introduced in the Texas House of Representatives on March 13, 2009, would, if enacted, require the Texas state board of education to restore the "strengths and weaknesses" language in the Texas state science standards. The current standards for high school biology include a requirement that reads, "The student is expected to analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information." As NCSE previously reported [5], in 2003 the "strengths and weaknesses" language in the standards was selectively applied by members of the board attempting to dilute the treatment of evolution in the biology textbooks then under consideration. When a panel of scientific and educational experts revised the standards, the "strengths and weaknesses" requirement was replaced with "The student is expected to analyze and evaluate scientific explanations using empirical evidence, logical reasoning, and experimental and observational testing." In a close vote on January 23, 2009, the board gave its preliminary approval to a version of the standards without the "strengths and weaknesses" language; a final vote is expected at the board's March 25-27, 2009, meeting.

Introduced by Wayne Christian (R-District 9), House Bill 4224 would add a section to the Texas Education Code providing, "(a) As part of the essential knowledge and skills of the science curriculum under Section 28.002(a)(1)(C), the State Board of Education by rule shall establish elements relating to instruction on the scientific hypotheses and theories for grades 6-12. (b) Instructional elements for scientific processes: the student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to analyze, review, and critique scientific explanations, including hypotheses and theories, as

to their strengths and weaknesses using scientific evidence and information; (c) Students may be evaluated based upon their understanding of course materials, but no student in any public school or institution shall be penalized in any way because he or she subscribes to a particular position on scientific theories or hypotheses; (d) No governmental entity shall prohibit any teacher in a public school system of this state from helping students to understand, analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information."

It is already clear that the state's scientific and educational communities are firmly opposed to the inclusion of the "strengths and weaknesses" language in the science standards. According to a survey [6] (PDF) conducted by the TFN Education Fund in conjunction with Raymond Eve, a sociology professor at the University of Texas, Arlington, professors of biology at Texas's colleges and universities overwhelmingly reject the notion of teaching the "weaknesses" of evolution, with almost 80% regarding it as likely to hinder student readiness for college and 72% regarding it as likely to hinder student ability to compete for 21st-century jobs. Additionally, over 1400 Texas scientists have endorsed the 21st Century Science Coalition's call [7] on the state board of education to approve science standards that "encourage valid critical thinking and scientific reasoning by leaving out all references to 'strengths and weaknesses,' which politicians have used to introduce supernatural explanations into science courses." And the president of the Science Teachers Association of Texas described [8] (PDF, p. 17) the "strengths and weaknesses" language as "vague and misleading," while also noting that it provides a pretext for the problematic insertion of religious beliefs into the science curriculum.

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