

Should We Teach Scientific Criticisms of Neo-Darwinism? Many Authorities Say YES!

1. Various States and School Districts have successfully implemented such a policy:

Minnesota: “Explain how scientific and technological innovations—as well as new evidence—can challenge portions of, or entire accepted theories and models including ... [the] theory of evolution...”¹

South Carolina: “Summarize ways that scientists use data from a variety of sources to investigate and critically analyze aspects of evolutionary theory.”²

Texas: Science standards require that students “analyze, evaluate and critique scientific explanations...”. Texas also requires students to “analyze and evaluate” core evolutionary claims including “common ancestry,” “natural selection,” and “adaptation,” and also to “compare and contrast scientific explanations for cellular complexity.” Additionally, teachers must help students to “examine scientific explanations” for both “the origin of DNA” and “abrupt appearance and stasis in the fossil record.”³

New Mexico: Students will “critically analyze the data and observations supporting the conclusion that the species living on Earth today are related by descent from the ancestral one-celled organisms.”⁴

Alabama: “[E]volution by natural selection is a controversial theory. ... Instructional material associated with controversy should be approached with an open mind, studied carefully, and critically considered.”⁵

¹ Minnesota Academic Standards Science K-12 2009 version, standard 9.1.1.1.7, available at http://education.state.mn.us/mdeprod/idcplg?IdcService=GET_FILE&dDocName=005263&RevisionSelectionMethod=latestReleased&Rendition=primary

² South Carolina High School Biology Science Standards, indicator B-5.6, <https://ed.sc.gov/agency/programs-services/41/documents/BiologyStandards.pdf>

³ Streamlined Science TEKS Adopted by State Board of Education, Texas Education Agency website, [http://tea.texas.gov/Academics/Curriculum_Standards/TEKS_Texas_Essential_Knowledge_and_Skills_\(TEKS\)_Review/Science_TEKS_Streamlining/](http://tea.texas.gov/Academics/Curriculum_Standards/TEKS_Texas_Essential_Knowledge_and_Skills_(TEKS)_Review/Science_TEKS_Streamlining/)

⁴ New Mexico Science Content Standards, Benchmarks and Performance Standards, Standard II (Life Science) (Biological Evolution) (9), available at http://sde.state.nm.us/MathScience/standards/science_standards.pdf

⁵ Alabama State Board of Education, Resolution (Nov. 8, 2001), available at http://www.alsde.edu/sites/boe/_bdc/alsdeboe/boe%20-%20resolutions_4.aspx?id=309 This policy is stated on a sticker placed in textbooks.

Mississippi: “No local school board, school superintendent or school principal shall prohibit a public school classroom teacher from discussing and answering questions from individual students on the origin of life.”⁶

Virginia: “In order to meet this standard, it is expected that students will...compare and contrast punctuated equilibrium with gradual change over time.” [This is in the Biology Curriculum Framework, which the DOE says is a document which “amplifies the Science Standards of Learning for Virginia Public Schools and defines the content knowledge, skills, and understandings that are measured by the Standards of Learning tests... This supplemental framework delineates in greater specificity the minimum content that all teachers should teach and all students should learn”)]⁷

Mississippi: Critique data (e.g., comparative anatomy, Biogeography, molecular biology, fossil record, etc.) used by scientists (e.g., Redi, Needham, Spallanzani, Pasteur) to develop an understanding of evolutionary processes and patterns.⁸

Grantsburg, Wisconsin: “Students shall be able to explain the scientific strengths and weaknesses of evolutionary theory. This policy does not call for the teaching of Creationism or Intelligent Design.”

Ouachita Parish, Louisiana: “[T]he teaching of some scientific subjects, such as biological evolution, the chemical origins of life, global warming, and human cloning, can cause controversy ... [T]eachers shall be permitted to help students understand, analyze, critique, and review in an objective manner the scientific strengths and weaknesses of existing scientific theories pertinent to the course being taught.”⁹

Louisiana Science Education Act: Louisiana schools shall “create and foster an environment...that promotes critical thinking skills, logical analysis, and open and objective discussion of scientific theories being studied including, but not limited to, evolution, the origins of life, global warming, and human cloning.”¹⁰

Tennessee Academic Freedom Law: Students may “understand, analyze, critique, and review in an objective manner the scientific strengths and scientific weaknesses of existing scientific theories covered in the course being taught” such as topics “including, but not limited to, biological evolution, the chemical origins of life, global warming, and human cloning.”¹¹

⁶ Mississippi Code, § 37-11-63, House Bill 214 enacted into law in 2006, <http://billstatus.ls.state.ms.us/documents/2006/pdf/HB/0200-0299/HB0214SG.pdf>.

⁷ Biology, Science Standards of Learning, Curriculum Framework 2010, http://www.doe.virginia.gov/testing/sol/standards_docs/science/2010/curriculum_framework/biology.pdf

⁸ 2010 Mississippi Science Framework, <http://www.mde.k12.ms.us/docs/curriculum-and-instructions-library/2010-science-framework.pdf?sfvrsn=4>

⁹ Instructional Program, Curriculum Development, http://www.opsb.net/UserFiles/Servers/Server_102796/CAPS/OuachitaCAPS.htm

¹⁰ Louisiana Science Education Act, enacted in June 2008, RS 17:285.1, §285.1, Science education, development of critical thinking skills, <http://www.legis.state.la.us/lss/lss.asp?doc=631000>

¹¹ Tennessee Code, § 49-6-1030, House Bill 368, enacted into law in 2012, <http://state.tn.us/sos/acts/107/pub/pc0670.pdf>.

Alabama Academic Freedom Resolution: “WHEREAS, the teaching of some scientific subjects required to be taught under the curriculum framework developed by the State Board of Education may cause controversy including, but not limited to, biological evolution, the chemical origins of life, global warming, and human cloning...” educational leadership, districts and teachers “should endeavor to create an environment within public elementary and secondary schools that encourages students to explore scientific questions, develop critical thinking skills, analyze the scientific strengths and weaknesses of scientific explanations, and respond appropriately and respectfully to differences of opinion about scientific subjects required to be taught under the curriculum framework developed by the State Board of Education.”¹²

2. The United States Supreme Court has sanctioned such a policy: “We do not imply that a legislature could never require that scientific critiques of prevailing scientific theories be taught.”¹³

3. The US Congress said in 2001 No Child Left Behind Act Conference Report: “[A] quality science education should prepare students to distinguish the data and testable theories of science from religious or philosophical claims that are made in the name of science. **Where topics are taught that may generate controversy (such as biological evolution), the curriculum should help students to understand the full range of scientific views that exist...**”¹⁴

Science Education Theorists: A *Science* paper reflected the consensus by observing students learn science best when they “discriminate between evidence that *supports* (inclusive) *or does not support* (exclusive)” a concept.¹⁵

4. Charles Darwin himself would have supported such a policy: “A fair result can be obtained only by fully stating and balancing the facts and arguments on both sides of each question.”¹⁶

¹² HJR 78, 2017, <https://www.discovery.org/scripts/viewDB/filesDB-download.php?command=download&id=12119>

¹³ *Edwards v. Aguillard*, 482 U.S. 578, 593 (1987).

¹⁴ Conference Report to No Child Left Behind Act; House Committee of Conference, *Report to Accompany H.R. 1*, 107th Cong. 1st sess., 78 (2001) H. Rept. 334, 78 (emphasis added).

¹⁵ Jonathan Osborne, “Arguing to Learn in Science: The Role of Collaborative, Critical Discourse,” *Science*, 328 (5977):463-466 (April 23, 2010) (emphases added).

¹⁶ Charles Darwin, *Origin of Species* (1859).