

Teaching evolution: Legal victories aren't enough

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In many ways, much has changed since the famous Scopes Monkey trial of 1925. In recent years, US courts have consistently ruled that teaching explicitly religious alternatives to evolution in public schools is a violation of the Establishment Clause of the Constitution. But in a new essay published in the open-access journal *PLoS Biology*, political scientist Michael Berkman and his colleagues show that despite these many legal victories, a surprising number of public high school biology teachers still include creationism or intelligent design in their curriculum.

In the “first nationally representative survey of teachers concerning the teaching of evolution,” the authors show that one in eight high school biology teachers present creationism as a scientifically valid alternative to Darwinian evolution. While this number does not reflect public demand—38% of Americans would prefer that creationism to be taught instead of evolution—it does represent a disconnect between legal rulings, scientific consensus, and classroom education.

The majority of biology teachers spend between 3 and 15 hours on evolution. This is a wide range for a topic considered by the National Academy of Sciences to be “the central concept of biology.” The amount of time spent teaching human evolution is even less: the majority of teachers spend no more than five hours on the subject.

“This is the hottest of the hot buttons” says Berkman, suggesting that pressure from the community might play a role in how teachers structure

their classes. Even the strongest legal ruling “still gives boards of education, school districts, and especially teachers considerable leeway” he says. Teachers are still in charge of implementing state standards, adhering to court decisions, and integrating textbooks into their classrooms. “And about this,” the authors write, “we are less sanguine.”

The authors show that the disparity in teaching evolution is not linked to differences in state regulations, but can more likely be attributed to differences of religious belief and education amongst teachers. Less than one-third of high school biology teachers believe that God had no part in evolution, nearly one-half believe God had a hand in evolution, and almost one in six believe that God created humans in their present form within the last 10,000 years. The teachers who hold creationist or intelligent design beliefs spent substantially less time teaching evolution than their Darwinist counterparts. Likewise, teachers with a stronger background in evolution spent 60% more time teaching it than those who had the least education in the subject.

There are no federal standards for class curriculums, and the state regulations are often inconsistent with recommendations of the National Academy of Sciences. Rather than adjusting government regulations, Berkman et al. argue, raising the certification standards for teachers could have a significant impact on the amount of time they spend on evolution. The authors propose requiring extra courses in evolutionary biology. “The extra background could make a large difference” says Berkman. “The legal ruling and legislative victories are clearly necessary for evolution to maintain its proper place in the biology curriculum,” the authors conclude, “but they are not sufficient.”

Citation: Berkman MB, Pacheco JS, Plutzer E (2008) Evolution and creationism in America’s classrooms: A national portrait. PLoS Biol 6(5): e124. doi:10.1371/journal.pbio.0060124
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