

Cans and Can'ts of Teaching Evolution

High school teachers are in a quandary about teaching evolution. Sometimes they are pressed to teach creation "science" or "intelligent design theory", or "evidence against evolution"; sometimes they are pressed just to forget about teaching evolution. **What should a teacher do? What, legally, can and can't a teacher do?**

The "should" part is easy. Both teachers and scientists say, "teach evolution." (see NAS site "[Teaching about Evolution and the Nature of Science](#)" or statements from [the National Association of Biology Teachers](#) and [the National Science Teachers Association](#)) As the famous geneticist, Theodosius Dobzhansky once said:

Seen in the light of evolution, biology is, perhaps, intellectually the most satisfying and inspiring science. Without that light, it becomes a pile of sundry facts some of them interesting or curious, but making no meaningful picture as a whole.

Dobzhansky, 1973, "Nothing in Biology Makes Sense Except In The Light of Evolution", Am. Biol. Teacher 25:125- 129; p.129

Students will not be properly educated unless they learn about evolution, and it's very important place in biology, geology, and astronomy.

But what does the law say about evolution and creationism? There have been a number of legal cases concerning this sticky issue (see [NCSE legal background](#)), and the law is quite clear on several matters. But first a caveat! "Never depend on legal advice from a physical anthropologist!" Although I work with lawyers, and for a layman am knowledgeable about the legal issues surrounding the creation and evolution controversy, I do not give legal advice, and anyone with a legal problem should contact a lawyer.) (If only lawyers who make proclamations about science had similar disclaimers!)

Legal decisions concerning creationism and evolution rely upon the First Amendment of the US Constitution. In part, it states, "Congress shall make no laws regarding the establishment of religion, or inhibiting the free exercise thereof." The Establishment and Free Exercise clauses taken together require that public institutions be religiously-neutral: schools can neither promote nor inhibit religious expression. So it is perfectly legal for a teacher to teach about religion, although it has to be in a non-devotional context. One can describe a religion, or religious views, but it is not constitutional to say, "Buddha was right!" Similarly, one can discuss controversies involving religion, but it would not be proper to take sides (such as "the Pilgrims were right to burn witches because witches are evil.") Let's look at what a teacher can't do.

A state/district/school CAN'T ban the teaching of evolution.

The 1968 Supreme Court decision, *Epperson v Arkansas*, struck down antievolution laws such as that under which John T. Scopes was tried in 1925 in Tennessee. Noting that antievolution laws were passed because they offended certain religious views, the court wrote

...the First Amendment does not permit the state to require that teaching and learning must be tailored to the principles or prohibitions of any religious sect or dogma & hellip the state has no legitimate interest in protecting any or all religions from views distasteful to them.

So teachers who tell me that their principal has told them not to teach evolution have a principal who is breaking the law.

Some antievolutionists claim that evolution is a religion, and that its teaching is therefore unconstitutional. Alas for this view, the courts have been quite clear that evolution is science, and therefore to teach it does not violate the First Amendment. The 9th Circuit Federal Appeals Court wrote in a California case (*Peloza v Capistrano*, 1994):

The Supreme Court has held unequivocally that while belief in a Divine Creator of the universe is a religious belief, the scientific theory that higher forms of life evolved from lower ones is not.

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A state/district/school CAN'T require equal time for creationism or creation science.

Creation "science" is the view that a literal interpretation of Genesis special creation of all things at one time, about 10,000 years ago can scientifically be supported. Rejected by both scientists and teachers, creation science also has been rejected by the courts. In the 1982 District Court *McLean v Arkansas* case, the judge wrote that creation scientists:

... cannot properly describe the methodology used as scientific, if they start with a conclusion and refuse to change it regardless of the evidence developed during the course of the investigation.

Creation science should not be taught, because our students deserve better than to be taught bad science. But bad science is not unconstitutional. However, the Supreme Court in 1987 (*Edwards v Aguillard*) struck down laws that would require "equal time" for evolution and creation science by noting that even if the word "science" was used, creation science really was religion in disguise, and therefore it is illegal to teach it.

An act impermissibly endorses religion when it advances the religious belief that a supernatural being created humankind. The legislative history of the Arkansas Creationism Act demonstrates that the term "creation science" as contemplated by the state legislature, embraces this religious belief.

... Because the primary purpose of the Creationism Act is to advance a particular religious belief, the Act endorses religion in violation of the First Amendment.

A teacher CAN'T teach creationism "freelance" (on his/her own)

Some teachers teach creationism or creation science even though their district does not (and legally cannot) have a policy requiring it. Such "freelancing" is illegal. Schools should be religiously-neutral, and, as a Federal District Court stated (in *Webster v New Lenox*, a case involving a "freelancing" teacher):

If a teacher in a public school uses religion and teaches religious beliefs or espouses theories clearly based on religious underpinnings, the principles of the separation of church and state are violated as clearly as if a statute ordered the teacher to teach religious theories such as the statutes in *Edwards* did.

A state/district/school CAN'T have a disclaimer that singles out evolution.

An evolution disclaimer which singles out evolution from all other scientific theories for special treatment (for example, as "theory, not fact") has been declared unconstitutional by a Federal District Court and its associated Appeals Court. The case of *Freiler v Tangipahoa Board of Education* (1997) involved a local Louisiana school board's antievolution disclaimer. Teachers were instructed to read a disclaimer to students stating that instruction in evolution is "not intended to influence or dissuade the Biblical version of creation or any other concept." The specific reference to the Bible was a major reason this disclaimer was struck down. The judge wrote:

While encouraging students to maintain their belief in the Bible, or in God, may be a noble aim, it cannot be one in which the public schools participate, no matter how important this goal may be to its supporters.

So, in summary: a teacher **can** teach about religion (though not advocate it), and teach evolution. A state, district or school **cannot** ban evolution, require equal time for creationism, or require a disclaimer on evolution. An individual teacher **cannot** teach creationism or creation science "freelance."

If you are a teacher, and you have any questions about these "cans and can'ts" feel free to check with me or your local school district counsel. Remember our students deserve the best possible science education, which ultimately depends on you and your colleagues.

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