

Students' perceptions of Earth's age influence acceptance of human evolution, says study

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High school and college students who understand the geological age of the Earth (4.5 billion years) are much more likely to understand and accept human evolution, according to a University of Minnesota study published in the March issue of the journal *Evolution*.

The finding could give educators a new strategy for teaching [evolution](#), since the Earth's age is typically covered in physical rather than biological [science classes](#).

Researchers Sehoya Cotner and Randy Moore, professors in College of Biological Sciences, and D. Christopher Brooks, of the university's Office of Information Technology, surveyed 400 [students](#) enrolled in several sections of a University of Minnesota introductory biology course for non-majors.

The survey included questions about knowledge of evolution and whether students were taught evolution or creationism in [high school](#) as well as questions about religious and political views. Participation was voluntary and had no effect on grades for the course.

The researchers extracted six variables from the survey to explore factors that contributed to students' views about the age of the Earth and [origins of life](#) and the relation of those beliefs to students' knowledge of evolution and their vote in the 2008 presidential election.

Using that information, they created a model that shows, for example, when a student's religious and political views are liberal, they are more likely to believe that the Earth is billions, rather than thousands, of years old and to know more about evolution. Conversely, students with conservative religious and political views are more inclined to think the Earth is much younger (20,000 years or less) and to know less about evolution.

"The role of the Earth's age is a key variable that we can use to improve education about evolution, which is important because it is the unifying principle of biology," said lead author Sehoya Cotner, associate professor in the Biology Program, which provides general biology classes for University of Minnesota undergraduates.

Through this and previous surveys, Cotner and her colleagues have learned that 2 percent of students are taught creationism only, 22 percent are taught evolution and creationism, 14 are taught neither and 62 percent evolution only.

"In other words, about one in four high school biology teachers in the upper Midwest are giving students the impression that creationism is a viable explanation for the origins of life on Earth," Cotner says. "That's just not acceptable. The Constitution prohibits teaching [creationism](#) in schools."

The researchers noted that understanding the Earth's age is a difficult concept; even Darwin found it challenging. Teaching and understanding creationist views of about the Earth's age and life's origins are much easier.

The paper cites a 2009 Gallup poll that coincided with the 200th anniversary of Darwin's birth reporting that only four out of 10 people in the U.S. believe in evolution. The poll also reported that 16 percent of

biology teachers believe God created humans in their present form at some time during the last 10,000 years.

More information: The complete study, "Is the age of the Earth one our 'sores troubles?' Students' perceptions about deep time affect their acceptance of evolutionary theory," can be accessed at [www3.interscience.wiley.com/cgi... t/123192457/PDFSTART](http://www3.interscience.wiley.com/cgi-bin/jlist/123192457/PDFSTART)

Provided by University of Minnesota

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