

Evolution teaching fails students: father

Parent asserts that government has quietly allowed lobby groups to influence curriculum

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Evolutionary theory in the Alberta public education system is taught inconsistently, at times without context and in some cases, not at all, says a father of two.

Scott Rowed, a Banff-based photographer, wanted to know what his daughters were being taught in the public schools they attended, to explain how human beings came to exist on the planet. He assumed that evolution would be the standard and taught in a thorough, consistent manner in the public system. Upon exploring the Alberta Education curriculum, he was surprised to learn his assumptions were incorrect.

"Evolution is very poorly taught in the Alberta curriculum," Rowed concluded. "It's really only mentioned in biology 20 and that is an optional course."

Rowed is not indifferent to the issue, at times travelling to Calgary to attend meetings of the Society for Secular Humanists, yet he said it was his role as a father that motivated him to look at the current situation in more depth.

Rowed reviewed his daughter's Grade 7 science textbook to "see how they were approaching evolution and it wasn't mentioned in the entire textbook, even in the index; it just was not there."

His older daughter recently graduated from Grade 12. "She didn't take biology 20 and evolution was never mentioned the entire time she was in school," Rowed said.

Evolution is taught in the public system, said a representative of the province's education authority.

"There is actually quite a bit of it," said Lorraine Lastiwka of Alberta Education. Lastiwka is the curriculum branch program manager for K-12 science.

"Our program of studies include topics related to evolution," Lastiwka said, adding, "In Grade 7, students would be learning a little bit about fossils."

"But where we really have a pretty good understanding and a pretty good piece for students, in regards to evolution, is in biology 20," she explained.

Presenting the elements of evolution theory in a broader context is critical to a student's overall understanding of the matter, said

Richard Mrazek of the University of Lethbridge.

Mrazek is the assistant dean of graduate studies and research, and a professor in the university's faculty of education. He has assisted with the development of science curriculum at all levels in the province of Alberta for the past 25 years.

"One of the things we have encountered is that more often than not, in elementary and middle school, the person teaching the science class may not have a strong science background, Mrazek said, adding that as a result, "They will deal with those components in the direct manner that has been laid out by the textbook."

Mrazek said that some instruction might "be very specific, for example, when talking about the fossil record, (yet) won't even put the fossil record into context."

There are, however, strong science instructors in the public system that will "as they are teaching those other elements, try to share the whole concept of the evidence-based component to the inquiry," Mrazek said. "That really is one of the central functions that we try to get across when we are talking about something like evolution."

"The Calgary Board of Education teaches the program of studies created by Alberta Education," said Ted Flitton, a spokesman for the CBE.

Flitton said evolution is positioned as the most accepted theory, but that "it is only one segment among many, in the investigation of living things."

"It is a small segment," Flitton said. "It isn't as though the teacher walks in and says, 'Today we are learning about evolution and this is the evolution segment.'"

"It will be brought up that there are a range of theories in talking about the change of living things over time," Flitton said. "There is one theory; there is this, there is that; there is evolution and Darwin's theories ..."

It is not a formal benchmark that is taught in the system, he said.

When asked about a scenario where a student chose physics and chemistry as science options in Grade 11, opting out of biology 20, Flitton responded, "I think it (evolution) is brought up elsewhere but in smaller degrees," adding, "The bulk of it is brought up in biology 20."

Meanwhile, simply having small pieces of



Photo: David Bell/Calgary Journal

The Family of Man sculpture has become iconic of the Calgary Board of Education's offices in Calgary. However, one father has spoken out against the lack of evolution instruction his daughters have received in the public system.

a complex issue in the curriculum, is no guarantee that instructors will help students connect the dots, Mrazek suggested.

Mrazek has observed hundreds of classes led by student teachers, and summarized, "More often than not, they run from the opportunities to discuss some of (the broader context of) this, not that they do it defensively, but they just admit that 'I really don't have a strong enough background to comment on this.'"

As a result, said Mrazek, "There may be many university students, as we are finding, that have never had the opportunity to discuss any of this."

Another important component to depth of understanding is student engagement, he said.

Some students, he said, are "willing to go a little further beyond themselves in finding more information, but more often than not, most students still have this mindset of 'Is this going to be on the examination?'"

Sometimes the discussion of evolution theory can be blurred in two distinct ways, said Douglas Orr, a research officer and associate of Mrazek's in the faculty of education at the University of Lethbridge.

The designation of "theory" is problematic to some people, largely flowing from a misinterpretation of the definition, Orr suggested.

"There is a public definition of 'theory' which is an educated hunch or a guess, whereas the scientific concept of theory is a principle which can be verified and tested based on evidence ... which can then be verified by numerous observations and independently derived from experimental results," Orr explained.

"The scientific community recognizes (that) what we call the 'theory' of evolution is in fact a well-established scientific principle."

For instance, he said, "The 'theory' of wave-particle duality in physics is a theory, and yet all

of our electronic devices today operate based on the acceptance of that as a scientific principle of how the world works."

The second challenge to the understanding of evolutionary theory occurs through the attempted positioning of evolution, by some, as creationism's secular partner, Orr said, which he rejects.

"If we are teaching science, we have to teach good science," Orr said.

Orr deferred to the position of the American Association for the Advancement of Science, in answering the question of whether science and religion are in opposition, "No, they are not at all in opposition, they ask different questions."

Mrazek, meanwhile, welcomes discussions of creationism and other ways of explaining our existence, but in the appropriate context.

"My hope is that you are not drawing down on the hours that are dedicated to science education, but rather that you are using that opportunity ... to discuss something that juxtaposes what they encounter within science education," Mrazek concluded.

In parent Rowed's analysis, meanwhile, at the core of the issue is government action in response to the lobbying of some fundamentalist religious groups.

"One option is to defend the rights of children to learn to think critically and be inspired by the wonders of science, including our own fascinating evolutionary history," Rowed said.

Alternately, Rowed added, a government may give in to the pressure and "quietly remove mention of evolution from the textbooks, and teach biology as a disjointed, uninspiring jumble of facts."

Rowed concluded, "Unfortunately, the lack of evolution in our curriculum gives a good indication (as to) which choice the government has made."



Photo courtesy of Scott Rowed

Scott Rowed is critical of how evolution is taught in public schools.