

Outdoor education helps minority students close gap in environmental literacy

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(Phys.org) —Environmental education programs that took middle school students outdoors to learn helped minority students close a gap in environmental literacy, according to research from North Carolina State University.

The study, published March 22 in *PLOS ONE*, showed that time outdoors seemed to impact African-American and Hispanic students more than Caucasian students, improving minority students' ecological knowledge and cognitive skills, two measures of environmental literacy. The statewide study also measured environmental attitudes and pro-[environmental behavior](#) such as recycling and conserving water.

"We are interested in whether outdoor experiences can be part of a catch-up strategy that can help in narrowing the environmental literacy gap for [minority students](#)," said lead author Kathryn Stevenson, an NC State graduate student who has taught outdoor education in California and high school biology and science in North Carolina.

Researchers tested the environmental literacy of sixth- and eighth-grade students in 18 North Carolina schools in the fall and spring. Half of the schools studied had registered an environmental education program with the state.

Using a published environmental curriculum, such as Project Learning Tree, Project WET or Project WILD, helped build students' cognitive skills, researchers found. Learning in an outdoor environment improved

students' ecological knowledge, environmental attitudes and behavior.

"This is one of the first studies on a broad scale to focus on environmental literacy, which is more than mastering facts," said co-author Nils Peterson, associate professor of fisheries and wildlife in NC State's College of Natural Resources. "Being environmentally literate means that students learn cognitive skills so that they can analyze and solve problems, and it involves environmental attitudes and behaviors as well."

Girls and boys appeared to have complementary strengths that contributed to environmental literacy. Boys scored highest on knowledge, while girls led in environmental attitudes and cognitive skills.

Sixth graders showed greater gains in environmental literacy than eighth graders, suggesting that early middle school is the best window for environmental literacy efforts, Stevenson said.

Teachers' level of education played an important role in building environmental literacy. Those with a master's degree had students with higher levels of overall environmental literacy.

Teachers who had spent three to five years in the classroom were more effective at building students' [cognitive skills](#) than new teachers. Efforts are needed to engage veteran teachers in environmental education, Stevenson said.

In a follow-up to the study, Stevenson is studying coastal North Carolina [students'](#) perceptions of climate change.

Provided by North Carolina State University

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