



The Effect of Field Studies & Fly Fishing on Achievement, Attendance, and Environmental Attitudes

Place-Based Education in the McKenzie Valley
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Background

Over the past years, enrollment at McKenzie School District has dropped to the point of district financial instability. In order to attract students to our district, we have begun a transition to being a charter with a focus on place-based education (PBE).

PBE is using the real world and the local context as a starting point for curricular investigations, which pairs very closely with the NGSS' emphasis on student-driven inquiry.

To test the effectiveness of place-based education as a viable and engaging science teaching methodology, I piloted an environmental science course which was focused on fly fishing and student-led field research studies.

Triangulation Matrix

Data source	Questions		
	Does a place-based approach to environmental science improve students' attendance?	Do students perform better after implementing an intensive research project?	Does PBE increase student ownership of their environment and interest in environmental issues?
Attendance survey	X		
Attitude survey			X
Student interview	X	X	X
Teacher journal		X	X
OAKS scores		X	
Attendance data	X		

Treatment

Over a year-long course, 10 students in environmental science designed and carried field-based studies for a local land trust. Along the way, students also learned the ecology and skills associated with fly fishing, spending on average one class period a week off campus.

In the process, students wrote scientific papers and presented their research to a panel of experts, including a University of Oregon professor and representatives from the Eugene Water and Electric Board, the H.J. Andrews Experimental Forest, the McKenzie River Trust, and the McKenzie Watershed Council.

Student-led studies:

- The Effects of Brake Application on Highway Runoff Toxicity
- Moss as a Microhabitat: Biodiversity of Organisms and the Effect of Human Disturbance on Diversity and Richness
- Soil Health and Human Disturbance in Old Forest, Replanted Forest, and Demolished House Sites

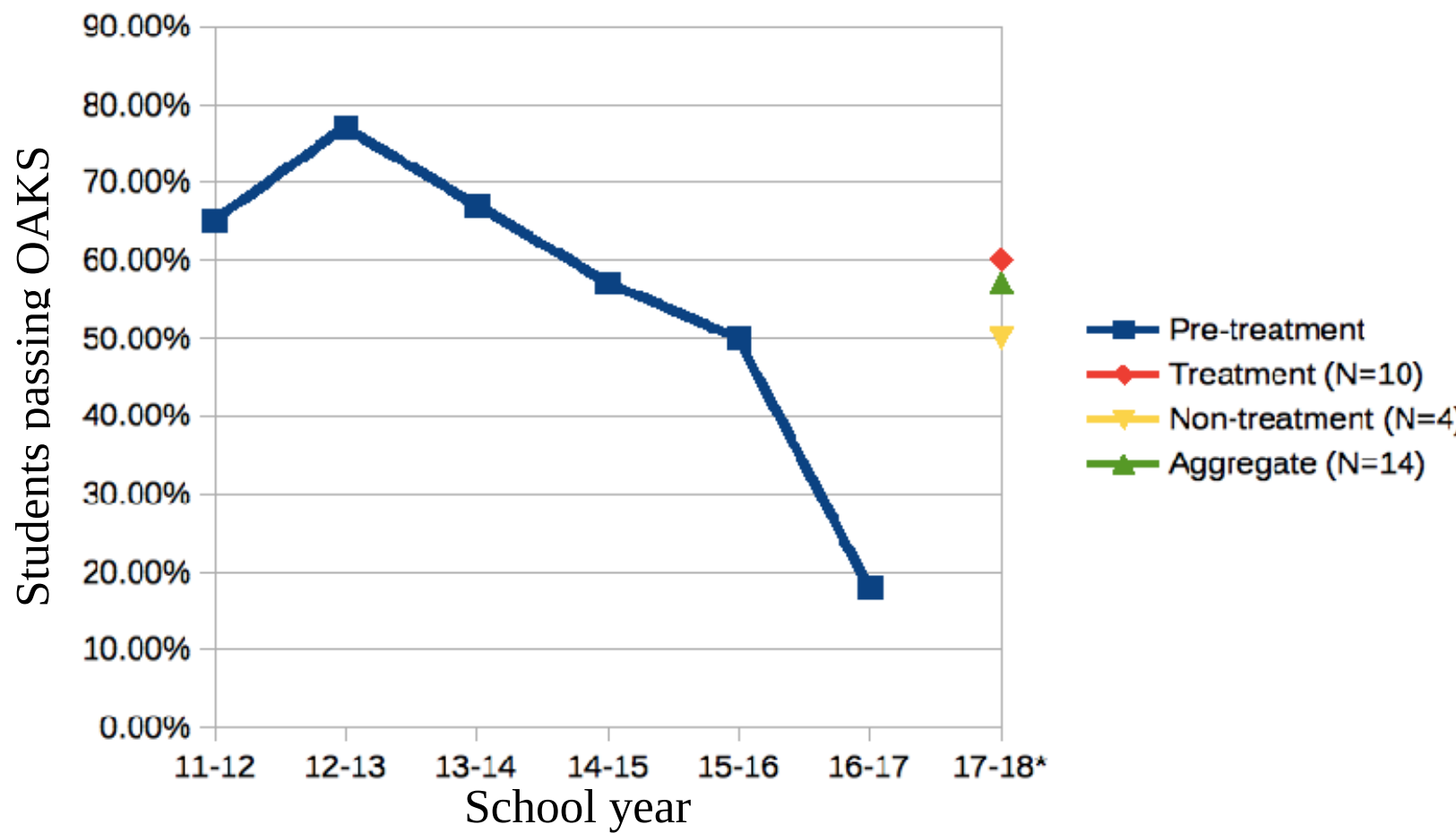


What effect does place-based education have on the achievement, attendance, and environmental attitudes of environmental science students?

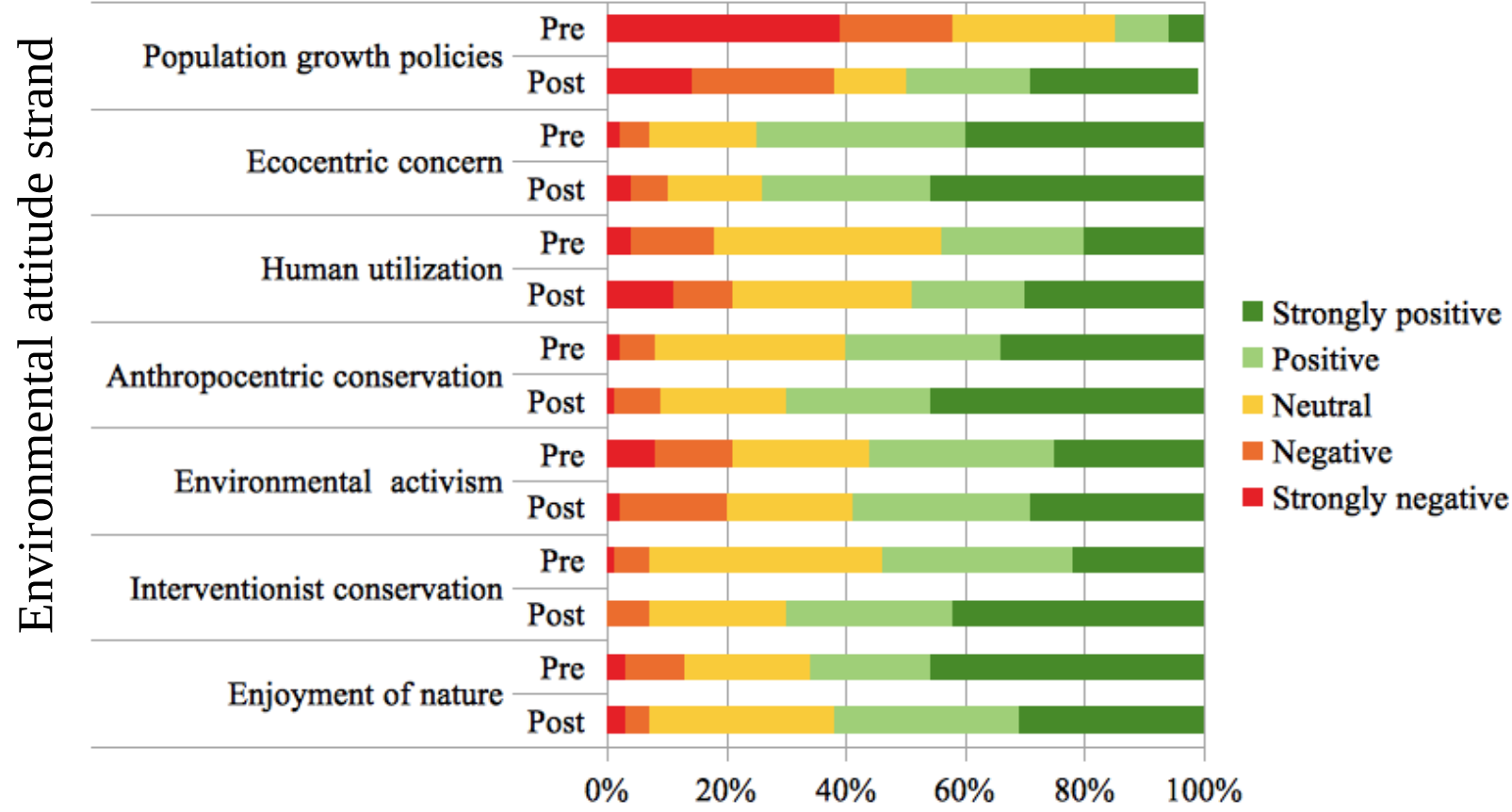


Results

Oregon Assessment of Knowledge and Skills - McKenzie



Environmental Attitudes Survey Results



Conclusions

Student quotes:

“Once I got more interested on my project, I couldn't stop thinking of all different things that can go into the project. I was very excited to learn and do my own research and do what real scientists do.”

“In came the dream class, an idealistic world of a period comprised of equal parts learning from textbooks and studies, work out in the field (ACTUAL NATURE GOD YES) made up of fun experiments and experiences like catching river invertebrates and studying them, relaxed fly fishing, and reflecting/paper writing. Boy howdy, were those good times.”

- Student attitudes towards the environment remained strong
- Student OAKS scores were comparable to recent years
- Students reported increased desire to attend, but did not show higher attendance rates
- Partnering organizations showed strong support