

Engaging Oceanography Students with the News



Cynthia Cudaback, North Carolina State University
 (cynthia_cudaback@ncsu.edu), http://www4.ncsu.edu/~cncudaba/Education/ocean_literacy.html

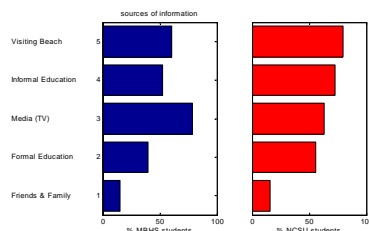
Students care about how the ocean affects them and how they affect the ocean. These questions define ocean literacy¹

An ocean-literate person can:

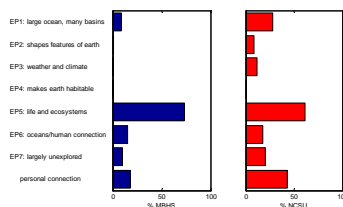
- 1) understand ocean science
- 2) communicate about the ocean
- 3) make informed decisions affecting the ocean

Undergrads in North Carolina and high school students in Alabama² have similar interests, based on a pre-class survey:

Where have you learned about the ocean?



What interests you about the ocean? Responses grouped by the Essential Principles of Ocean Literacy¹



Result: All students are influenced by personal experience with the ocean. Both groups of students care about marine life and human impacts.

Pedagogy that works for undergrads should work in high school

¹COSEE (2005) defined ocean literacy <http://www.coexploration.org/oceanliteracy/>

²Thanks to Beth Hines for collecting data in her high school marine science classes.

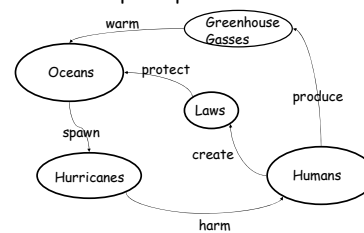
Teaching Tools

- Oceans in the News
- lectures based on current news

Oceans in the News I

- low stakes, large classes
- find an article about the oceans
- share in class or on Wiki
- organize results - in groups, in class

My model Concept Map



Students' Concept Map



Result:

- used for learning, not assessment
- students enjoy finding articles
- they learn breadth of issues

Oceans in the News II

- high stakes, small classes
- oral report, 2 news articles
- report on science behind news

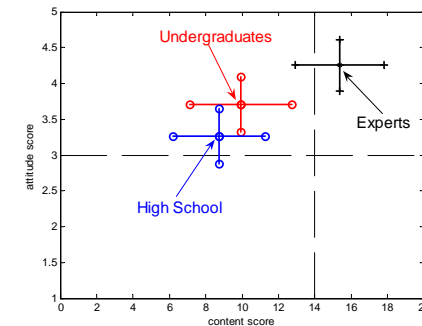
Result:

- some superb presentations
- non-scientific skills can shine
- students have stake in oceans

How well does this work?

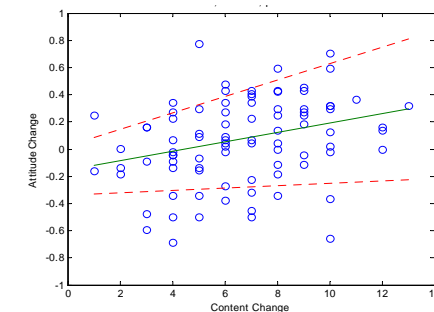
- pre and post class surveys
- 20 Content Questions based on Essential Principles*
- 44 Leikert-Scale Attitude Items About Science & Stewardship

Pre-Class Attitudes Vs Content



- experts score well on both
- college scores higher than HS
- no one has a bad attitude
- content not correlated with attitudes

Changes in Attitudes & Content



- content improves more than attitudes
- content change ⇔ attitude change
- $r = 0.28, p = 0.009$

Teaching Works!