

## Earth Science Literacy: It's Happening All Around You. Use It

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As with most education, one of the most important aspects of effective geoscience education is making the material relevant to the students' "everyday lives". Without exception the most popular unit I teach each semester is volcanoes (nothing sells quite like death and destruction). But without a doubt, when I am discussing things that the students feel will actually affect them they become much more meaningfully engaged. We are in a unique position in the geosciences, we are teaching topics that are becoming more and more a part of the public policy discussion in this country. From global warming to oil spills geoscientists have something useful to say about a lot of what's in the news, doing so engages our students like little else, and not doing so does them a disservice.

Perhaps the easiest way to make geosciences relevant is to incorporate what's in the news into lectures and other learning modalities. Sometimes I am able to simply use what's going on in the world as an example to spark discussion. Other times though, events are just too timely to wait for the appropriate unit. The recent earthquake in Chile following so closely after the earthquake in Haiti provided an opportunity that was simply too good to wait till the earthquake unit. Are earthquakes in Haiti common? Are earthquakes in Chile common? How did the size of the two earthquakes compare? Given the size of the earthquakes why was the one in Haiti so much more devastating? These were questions that the students walked into class with. Answering these questions provided me with the opportunity to talk about different tectonic settings, the scales we use to measure earthquake intensity, and importance of building codes and effective governance in disaster preparedness and response, all within a "pre-made" context that had the students interested before they even walked into the classroom. The students were anxious to know more than the news was telling them and, I think, enjoyed having a sort of "leg up" on the people around them when it came to understanding these events.

Convincing students that what's going on in the news is important is easy. The very fact that it's in the news makes it "important" so all that's left for us to do is explain what's going on. What's far harder, but perhaps more vital, is to convince students that the rest of the material that we're covering is also relevant to their lives. Nevertheless, promoting earth science literacy requires that we do this. There are a few ways I try to make earth

science concepts relevant. First I never EVER teach anything without context, I place everything in the real world. As earth scientists ourselves the material we teach in just inherently interesting to us. We need to not forget that this is not the case with our students. I never teach minerals without making sure they understand the economic geologist's adage "look around you, if it wasn't grown, it was mined". Second, as I mentioned before, I always keep current events close at hand when looking for lecture example and case studies. Finally, I turn it back on the students, asking them either in class discussion or as part of a more formal assignment how particular topics affect them. The answers are frequently surprising.

I promote earth science literacy by making sure that students understand that what they're learning involves the "real world" and can be applied to what they see going on around them right now. I try to make sure they understand that science does not exist in a vacuum and that getting the science right potentially makes life better for everyone, while getting it wrong can have dire consequences.