

# Coyote in the classroom

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My instructional approach has evolved to focus on active and inquiry-based learning as a means of exploring concepts in the general geology classroom. This has grown out of my involvement with the Eight Shields model of the learning journey and art of mentoring as described in “Coyote’s Guide to Connecting with Nature” by Jon Young, Ellen Haas, and Evan McGown. While I am still in the early stages of adapting this model to the traditional classroom setting, I believe its approach has value in the general geology classroom as a means of pulling at students’ edges of understanding and inspiring their curiosity rather than pushing them toward specific goalposts via the traditional lecture model. The application of this approach also forces me to discern between the material that is “need to know” versus that which is “nice to know.” This helps provide focus in the classroom and reduces the chances to overwhelm students with minutiae they can easily find in the textbook.

This philosophy of geoscience education includes streamlining the class in several ways. The first is to downplay the vocabulary-intensive nature of geology. Since I deal primarily with students who are non-science majors, I seek to promote understanding of important concepts rather than rote memorization of terminology. I would much rather have a student understand that slow cooling results in larger crystals in igneous rock due to longer growth periods than simply regurgitate a book definition for the word “phaneritic” without any real understanding of the concept that word is meant to convey. This also helps make the material more approachable for English-language learners as it helps break down “vocabulary barriers.” The focus on internalization and understanding of core concepts on students’ personal levels also facilitates practical and situational application of these ideas in the field.

These approaches are designed to help in reaching the primary goals of promoting understanding of core concepts, promoting curiosity about geology and the natural world in general, and developing and applying critical thinking skills. To sum it up in somewhat glib terms, my intent is to help students “walk the walk” of geology rather than simply “talk the talk.” I believe one of the key strengths of this approach is it makes the science more approachable to general geology students. Many of the students I encounter are intimidated by science and math in general. My approach helps them make connections between what we learn in the classroom and what they see in the real world around them. It helps transform geosciences, and science in general, from a subject veiled in academic mystery to something that has direct relation to their everyday life.

Teaching in this manner is not without its challenges. Students are often not used to exploring ideas from different angles, addressing more open-ended questions, or defending their thinking. They are used to classes where there is “one right way” to address a challenge. My questioning often involves describing scenarios they may find themselves in that require application of concepts rather than memorized facts. Students also find it challenging to personalize the information when I tell them, “If it works for you and it’s not cheating, then go

for it.” I also have the challenge of making sure I properly scaffold their learning so there is not a huge leap between developing their skill sets and application during formal assessments. The greatest measure of success I personally have is that many of my students come to my classes with stories of how they noticed the offset in the rocks on the highway, how they couldn’t stop wondering about the landforms they saw during spring break, or the elation they felt when they realized a tour guide was talking about an extrusive rock formation rather than an intrusive one.