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Guest Editorial

Close to Nature

Not many biology curricula include “appreciation of life” on their lists of requirements. Yet I can’t think of any theme more central nor motivation so strongly personal for most of my fellow biology teachers. What does this contrast mean?

Of course, biology is a science and science isn’t supposed to include values. Besides, how would one evaluate a student for his/her level of “appreciation” on a standardized test? Still, the theme haunts us.

I raise the issue for two reasons. First, I think we should publicly acknowledge this dimension in our teaching and begin to address the challenge of articulating why it is so important to us. Second, I would like to see discussion about how we teach this and perhaps how we assess the effectiveness of our teaching.

NABT’s current position statements on the spread of AIDS, global warming, population control, use of animals, etc., all reflect indirectly the general principle “respect for life,” though it is not stated explicitly. Why not, I wonder? Can it be assumed? We embrace professional ethics. Should we also extend the statement of our common professional values to include “striving to convey an appreciation of and respect for life”?

The passion for life emerges most frequently, I find, when teachers enter the topics of tropical rainforests and environmentalism. Teachers often exhort their students to be concerned, even to take action. Some will advocate vegetarianism. Others will encourage students to campaign for preserving species, etc. While this is consistent with principles of academic freedom, I find it troublesome. It too readily mixes science and values in a way that I think confuses students, who often struggle with the fundamental difference between descriptive and normative claims. Scientists can be experts, but they alone cannot tell us what we “ought” to do. No scientific argument can secure biodiversity as a value, for example, though I fear that many of my colleagues present it as such. Surely, scientific knowledge informs us, but it is the basic values of long-term self-preservation and respect for life that support the biodiversity banner *morally*. Science teachers, no less than scientists, should be aware of conveying the limits of scientific authority in the realm of values.

So, if outright statements of value are not a legitimate approach for teaching appreciation of or respect for life, what is? Surely developing a basic understanding of life is one critical dimension—simply knowing about the role of plants and microorganisms in our own survival, for example, engenders some form of valuing them (see NABT’s project with ASM: www.nabt.org and click on the button). When it comes to ecology, in particular, one can hardly gain a holistic appreciation of life without clearly perceiving its interconnectedness (now this concept *does* appear on national and state content standards!). One cannot appreciate something deeply without also understanding it fully. Indeed, we may well ask whether the knowledge from interactive dissection is (ironically, perhaps) effective in developing a deeper respect for life (as is the case with my students).

I think we should also consider the role of pure aesthetics, a recurring theme in Maura Flannery’s “Biology Today” column in this journal. When I taught high school, I devoted one class each year to listening to whale sounds in the dark. No words. Only a few slides of whales, including a dramatic series with a humpback breaching. I also projected blue light onto the ceiling from under a wave tank to create a sense of being underwater. And I let the whales’ beautiful and eerie sounds fill the room for 45 minutes. Yes, reaction ranged from puzzled annoyance to deep appreciation. It was my effort to convey a sense of another organism, of feeling close to nature.

My personal appreciation of life expresses itself in part in viewing lichens “close up” (literally—see cover photo). The spatial arrangement of lichens, at once patterned and random, has a certain aesthetic. Observing them closely allows one to reflect on forms of life. Lichens inhabit otherwise lifeless environments, reflecting the tenacity of life. Yet they are also highly sensitive to air pollution—showing the fragility of life and all too often reminding humans of their impact on the planet. Lichens are favorite examples of symbioses—those close associations of species that can illustrate the web of life on the globe. Moreover, the symbiosis occurs at the microscopic level. Lichens help remind us that humans are atypically large as organisms go. To understand life in general, including our own lives, we must often change our perspective profoundly. If one looks at lichens closely and patiently, one might well sense oneself dissolving into nature. So I share my lichen photos with my students, not to teach them anything that will be on the exam, but to pause momentarily with the hope that we might all learn to appreciate living things more deeply. (I invite you, too, to visit: www.pclink.com/allchin/lichen.htm).

I recently taught college students in El Paso. They are surrounded by desert, but few have ever experienced it. Some of the most profound teaching experiences I had there involved taking students on a simple field trip to undisturbed desert and showing them how alive it is. No quadrats, no sampling. Just show and tell. This single experience put all my lectures, with their high-tech audio-visual enhancements, and all my urgent comments about how biology relates to everyday lives, to shame. NABT's standards profile a well-prepared biology teacher as being able to organize field experiences. Just so. I think we should remember and underscore the value of what used to be called natural history—as much for its aesthetic as for its “scientific” merit.

NABT's position statement on standards for education includes the value to “foster enthusiasm for biology” (www.nabt.org/Standards.html). I wonder if an aesthetic appreciation of nature and life isn't integral to that goal. Ultimately, if we cannot first engender an appreciation of life, how will students ever “appreciate” the relevance of biology or want to learn more? After all, “without life, biology itself would be impossible.”

Douglas Allchin
University of Minnesota
allchin@pclink.com
