An Overture

How Much Trivia Did You Teach Today?

Hanging on the wall in a colleague's office is a small, neatly lettered plaque that asks, "How much trivia did you teach today?" Well, how much *did* you teach today?

Trivia, by my definition, is any arbitrarily selected bit of information that the students have no reason for knowing other than to remember it for the next test. What's trivia in one situation may be exceedingly important in another. A taxonomist classifying arthropods will need to notice small differences in the structure and arrangement of appendages. A plant physiologist studying fertilization and embryonic development of seed plants will find it useful to know the names and characteristics of the various cells that give rise to the seed. And, of course, an orthopedic surgeon had better have a detailed knowledge of the anatomy of bones and muscles. For general biology students these kinds of information are trivia. In fact, most any kind of information can be trivial unless one has a reason to know it.

Information becomes significant when it is used to illustrate an important concept. Most students find that specific examples help them to understand concepts, but they often become bogged down in the details of the example and fail to see the significance of the concept. For example, in teaching mitosis, we show our students cells undergoing that process, give them names for the various stages, and explain what goes on in each stage. If our students parrot back those details without understanding what mitosis accomplishes, they have only learned a lot of trivia.

Information also becomes significant when it relates to other things that concern a student. Water, carbon, nitrogen, and phosphorus cycles may seem like so much trivia unless students see that these cycles are essential to understanding the effects of pollution. Factors that regulate the size of populations take on meaning when students realize that these same factors will ultimately control the human population unless humans choose to limit their own population before natural forces intervene. Many of the details of human anatomy and physiology become useful to students when they see how such information relates to their own health.

Finally, information about biology becomes significant when it is needed to resolve social and eithical issues. Though the problems involved in counseling a family plagued with a genetic disease are not solved solely through the application of genetic principles, such problems certainly cannot be handled rationally without knowledge of those principles.

The establishment of clean air and water standards likewise requires the application of ecological principles. Many issues that voters face and that come before citizen groups require some knowledge of biological principles. Even though these principles provide only part of the information needed to resolve the issue, the problem usually cannot be resolved satisfactorily without them.

We can use these various approaches to avoid teaching trivia. We can emphasize concepts rather than the details of the examples used to illustrate them. We can relate biology to other topics that concern our students. And we can show them how biology is important in resolving social and ethical issues.

Joan G. Creager, *editor*