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Does relevancy matter?

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When teaching introductory biology I make a point of demonstrating the relevance of the material to the students. In fact, much of the material covered in this course is directly applicable to the students' lives; many of the terms that are introduced and the concepts that are discussed in this course can be seen in newspapers and magazines or heard on the news. This latter point presents an opportunity to directly demonstrate why the information is relevant. Here, I am suggesting that instructors take advantage of people's natural interest in circumstances and objects that affect them directly, and use appropriate material in class to demonstrate relevancy, thus promoting an interest in learning.

One example to illustrate the idea of the relevance of introductory biology can be seen with the topic of macromolecules, which are covered at the very beginning of the course. A fairly standard presentation would cover the major types of macromolecules, and their categorization based on structure and function. This is necessary information that sets a foundation for subsequent topics, but it is not very exciting. However, almost all of introductory biology covers material that can easily be "brought to life." Consider the subject of carbohydrates. If you pay the least attention, you are bombarded by information—much of it potentially misleading—from advertisers of food-related products. On most candy bars a look at the list of ingredients reveals "sugar", but also an array of other terms such as corn syrup, invert sugar, malt extract and lactose. If you are going to eat this, wouldn't you want to know what these words mean? In addition, it is very easy to move from definitions to more interesting questions: What is the difference between corn syrup and high-fructose corn syrup, and does the latter contribute to

obesity? Thus, I now spend a considerable amount of time illustrating the significance of learning about carbohydrates from a very practical point of view.

On occasion I have been asked to present a teaching talk on active learning, as opposed to a research seminar. I usually start these talks by breaking the audience into small groups and present them with a few questions to illustrate what I consider key points. I ask the groups to very briefly discuss these questions and then solicit group answers. One of the introductory slides I present is along the following lines:

If you received a new computer program along with a lengthy instruction manual, which are you likely to do?

1. Read the manual cover to cover and then start the program.
2. Start the program and then check the manual if you have questions.

Sometimes I vary this question, depending on the audience, as follows:

If you give a child a new computer game that comes along with an instruction book, which of the following are likely to happen?

1. The child will carefully read the instructions and then start to play the game.
2. The child will start playing the game and then, maybe, check the manual if something is not clear or does not seem to be working properly.



Neat! I can't wait to try this out once I've read the instruction manual cover to cover!

Invariably people choose the second option (Figure 1). I think the reason is that people want information when they need it. In fact, most of the information in the manual will never be relevant for most users. Therefore, there is little incentive in reading through the entire set of instructions (consider how many people read through the driver's manual for their car until they have a problem and are looking for a specific solution). When you do encounter a problem, you have a specific question in mind and are now more willing to search through the manual for the information that is relevant to your current need.

For some reason, many instructors seem to overlook the importance of relevance. In my experience, instructors assume that students want to know, or should learn, the information they are presenting simply because the material is in fact known. That is, we often attempt to "force feed" information to students without making it clear why they

should want to learn it. Instead, I think it is incumbent on the instructor to demonstrate why the information they are asking the students to learn is actually important for them to know. In some cases, this may be quite a challenge; however, if you cannot demonstrate the relevance of the material you are presenting to your students, perhaps it is time to reconsider the importance of your teaching it, or their learning it.

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