

ing the examples, nor are we told how typical or widespread such examples are in textbooks.

The authors then partially contradict themselves by saying that “many young women do, in fact, have the kind of background needed to understand such problems ab initio.” The upbringing of the daughters of one author and their familiarity with chainsaws and other tools is offered as proof. Then we are told, again without data or references, that “a significant fraction of women, particularly those raised in urban or suburban environments, do not have that background.” The reader is left to wonder how young men would acquire their “special knowledge” in urban or suburban environments.

In our view, the authors draw a conclusion and make recommendations based on anecdotes and stereotypes. Without data on whether textbook problems require prior knowledge that places an asymmetric burden on women, one cannot know if their conclusion is correct. The article is simply a speculative opinion piece.

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■ In “Problems with problem sets,” authors James Trefil and Sarah Swartz use the word “problem” to refer to the fact that about 20% of physicists are women. Would they also call it a problem that less than 10% of nurses, elementary school teachers, and secretaries are men? Would they consider it good news if the percentage of men in those fields were to increase? Would they suggest that part of the reason for the underrepresentation of men might be that coursework for those professions includes problems that assume knowledge more likely possessed by women?

Of course the authors would never say that. In fact, it seems perfectly reasonable to just say that men are less interested in those professions than women are. Likewise, is it not also reasonable to assume that women are, on average, simply less interested in physics than men are?

At one point, Trefil says he tries to “be encouraging to his female students.” As opposed to what? Not en-

couraging his male students? The entire article was sexist.

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■ **The problem** James Trefil and Sarah Swartz address centers around learning the definitions of terms to which students, expressly female students in this case, might not previously have been exposed. Ignorance is no sin, but the definitions of “pile driver” and “I-beam” are readily found by asking a fellow student or referring to a dictionary. And exposing the real-world, everyday applications of physics concepts through problem sets is done not to confuse students but to illustrate the universality of the principles of physics. Trefil and Swartz have pitted themselves against authors who presumably selected or designed those problems not as impediments but as aids to learning basic physics. The success of one approach versus another rests to a large extent with the student.

Students today do not labor under the disadvantages that I faced in the 1930s and early 1940s. My Russian immigrant parents had no formal education and could offer no help with school work. Learning was fun for me, but I worked hard to achieve it. Textbooks then had few of the creative graphics and learning aids found in current ones.

But such aids are of little use if students, whether in K–12 or college, don’t or can’t use them. The problem, then, is learning how to learn before becoming irreversibly habituated to asking others or entirely dependent on the internet. As a substitute K–12 teacher for several years following my retirement, I devoted as much time and attention as my students tolerated to acquainting them with available resources and how to make the best use of them.

A student’s first exposure to an idea sets a long-lasting tone in the understanding and use of that idea. Early misconceptions can be difficult to dislodge, and the selection of problems and problem sets does well, along with lectures, to help ensure that such misconceptions do not take root. In light of that challenge, the use of unfamiliar terms that are readily found in dictionaries strikes me as a trivial impediment at most.

Teachers, though essential, best function as facilitators. Problem sets likewise serve as facilitators. The major part of the learning process resides in the students, male or female. Help them by all means. Understand—and, if necessary, help them

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