

京大過去問 2007年 第2問

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In the long career of teaching science at the college level, I have come to learn a lot of things myself. The most significant of the lessons is concerned with the very basic of education. At some point in each teaching unit, I try to remind myself to ask the big questions. “Why should we care about this? Why is this topic important?” (1)This may very well be my way of avoiding that embarrassing student query, “Why do we have to know this?” All the same, it remains a good question, whether posed by the teacher or the student. In this age, no sensible person ought to do without asking what is indispensable to learn. It is a very tough question with no single correct answer. In this difficult situation, a useful approach might be suggested — that is, to look for teaching materials that connect science with technology and society. Such an approach begins with the question, “Why is this important?” And then a simple answer can be given: because it has vital implications for human culture and the planet’s future.

Consider the relationship between technology and science, which I fear is often misconceive. (2)While many take the former merely for a product of the latter, the reverse is no less true. Throughout the history of science, new technologies are known to have made possible eye-opening discoveries. Without the aid of sophisticated optical instrument, the earth-centered view of the universe would not have been disproved, nor could the cell have been established as the basis of life. In our century, using advanced technological tools, brain researchers are producing important new knowledge about how learning occurs with significant implications for teaching.

It has become commonplace to observe the importance of technology in shaping the modern world. Computers, mobile phones, and e-mail have all transformed our world. Even physical looks of classrooms themselves are undergoing considerable change, with more and more schools incorporating computers and other equipments into those rooms. In these circumstances, connecting our science teaching to everyday experiences of our students can make our classes more engaging and relevant.

(3)Important as the interaction of science and technology is, the most essential part of the proposed approach could be its third aspect, the connection of these two with society. From global temperature change to technology applied at the atomic level, rarely does a day go by without some findings being announced that carry the potential to have a significant impact on mankind. The ethical choices faced today are not just more difficult than in the past, but many of them are brand-new decisions created by the revolutionary ideas and groundbreaking

innovations. Our science classes should give students the skills needed to address the difficult issues that come with scientific knowledge. When interconnections among science, technology, and society are made part of science teaching, we empower students with skills that turn them into active, responsible, and thoughtful human beings. We also allow them to discover answers to the question, “Why do we have to know this?”

From *Why Is This Important?* By Steve Metz, *The Science Teacher*