

The Nature of Technology > Technology and Science

Research on Student Learning

Even in middle-school, students typically do not distinguish between an engineering model of experimentation, where the goal is to produce a desirable outcome, and the scientific model of experimentation, where the goal is to understand the relation between causes and effects. [1] Some research suggests that students can understand and use the engineering model before they can the scientific model -- that is, that students inevitably will think about producing desirable outcomes before they are able to do the more analytic form of thinking involved in scientific inquiry. [2]

High-school students do not distinguish between the roles of science and technology unless explicitly asked to do so. [3] This is evidenced, for example, by students' view that science serves the public interest. More generally, some students believe science affects society in more positive ways than does technology. That is partly because students associate science with medical research but associate technology with pollution or weapons. Students appear to understand the impact of science on technology, but they do not always appreciate the impact of technology on science. [4]

References

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Schauble, L., Klopfer, L.E., Raghavan, K. (1991). Students' transition from an engineering model to a science model of experimentation. *Journal of Research in Science Teaching*, 28, 859-882.

[2] Schauble, L., Klopfer, L.E., Raghavan, K. (1991). Students' transition from an engineering model to a science model of experimentation. *Journal of Research in Science Teaching*, 28, 859-882.

[3] Fleming, R. (1987). High school graduates' beliefs about science-technology-society II. The interaction among science, technology, society. *Science Education*, 71, 163-186.

[4] Fleming, R. (1987). High school graduates' beliefs about science-technology-society II. The interaction among science, technology, society. *Science Education*, 71, 163-186.