The Myth of Scientific Literacy by Morris Shamos

Arguing that universal scientific literacy is a futile goal, a physicist advocates a practical science education curriculum emphasizing appreciation of science as an ongoing cultural enterprise; awareness of technology's impact on health, safety, and environment; and sensible use of experts. UP.

My Personal Review:
Although everybody complains about the decline of public education and lack of science literacy, it is worthwhile to actually ask, if the reasons for complaining are valid. Science literacy and popularizing of science are not the same thing. Shamos claims that true scientific literacy as proposed by John Dewey's 'scientific habits of the mind' cannot be realized simply by reading and writing. If science literacy, however, means a simple awareness of science as part of our culture, prospects of achieving science literacy are much better. Shamos clarifies the purpose of science education, examines the history and meaning of scientific literacy and explains the reason for failure of achieving the goal, if the goal is for every citizen to be literate in science. His book includes a well written chapter about nature of science (chapter 3).

He explains why the practice of science does and has not carried over very well into science education. Science literacy requires that we understand the following: how to obtain information, how to classify facts, and how to draw logical conclusions. The latter is where the real problem resides. We can always come to a 'right' conclusion based on 'reasoning'. The conclusions, although logically derived, are wrong if the premises are wrong or the observations inaccurate. If we lack the method, i.e., the means to distinguish correct from incorrect premises, reasoning does not help at all. Everything can be rationalized, but is it scientific? Science literacy, for example, means to be able to explain why Darwin's words (e.g. the theory of evolution) for a biologist have a different quality and logical
structure than the Word of God (e.g. the Bible, the Koran, the Thora) for a believer.

The distinction of method touches at the core of the problem -- science literacy does not mean that everybody becomes a scientist, but to know what science is about and what it is not about.

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