Attending and responding to students’ doing science

Abstract:

The assumption remains pervasive that the core objective of science instruction is a body of canonical knowledge. It underlies instructional practices, assessments of learning, and even progressive “inquiry-based” curricula. Meanwhile, for many students, science class is still disconnected from genuine pursuit of understanding. The assumption, I suggest, is a “misconception” of the community as a system. Like a student who keeps thinking force causes motion, the science education community keeps thinking the goal is a particular set of concepts.

One reason for the misconception’s stability is the difficulty of attending and responding to students’ thinking. I will present video examples of students’ doing science to discuss what there is for a teacher or a researcher to see with respect to students’ learning science as a pursuit, rather than simply as a body of knowledge. I’ll suggest that much of the challenge for teachers is the same as the challenge for students, part of doing science, namely to understand and assess a novel line of reasoning.