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Do university laboratory courses misinform school science teaching?

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Abstract

This roundtable discussion is based on our experiences from a course of professional development for in-service school teachers in physics. Teachers in all science subjects often get most of their laboratory and inquiry experiences from their time as university students. This sets a powerful example and is often perceived as the norm for how to include laboratory work in science teaching. Yet, research in science education has questioned the educational values of traditional confirmatory lab work common at the university level, and similar concerns apply to school science. An insight for us in giving this course is the extent to which teachers seem to rely on their experiences of laboratory exercise at the university when choosing, designing and implementing lab work in schools. Therefore, we wish to reflect on how the culture of laboratory work in higher education may impact students' learning at both the school and university levels. We will begin with a brief presentation of the course, and then address the following question in this roundtable discussion: What messages about how empirical research is done do laboratory exercises at the undergraduate level convey to students, and what would we like them to be?