Kolloquium Lehrer*innenbildung

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Teaching and assessing critical thinking in the sciences

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Zentrum für Lehrer*innenbildung
Porzellangasse 4, 1090 Wien, Stiege 2, 3. Stock, Seminarraum 4

Abstract

While many universities place critical thinking as a central goal of higher education, much debate exists about what it is and how to teach it. Here I will present our research to define and develop students' critical thinking skills in the context of instructional science lab courses. I will also describe our two new standardized critical thinking assessments that are contextualized in physics and biology experiments.

Über die Vortragende

My lab studies teaching and learning in physics and other science, technology, engineering, and math (STEM) courses. We study research questions such as how students acquire skills or content knowledge, how different course environments affect student learning motivation, or persistence in physics (or other STEM fields), or how they develop an understanding of the nature of science and scientific measurement. We spend considerable time worrying about how we know what outcomes are being achieved and what mechanisms are responsible those outcomes. We use both qualitative (e.g. observations, interviews, and focus groups) and quantitative methods (e.g. test scores, instances of pre-defined actions or activities) to explore the many possible variables that affect student learning and their experiences in physics and STEM courses.