

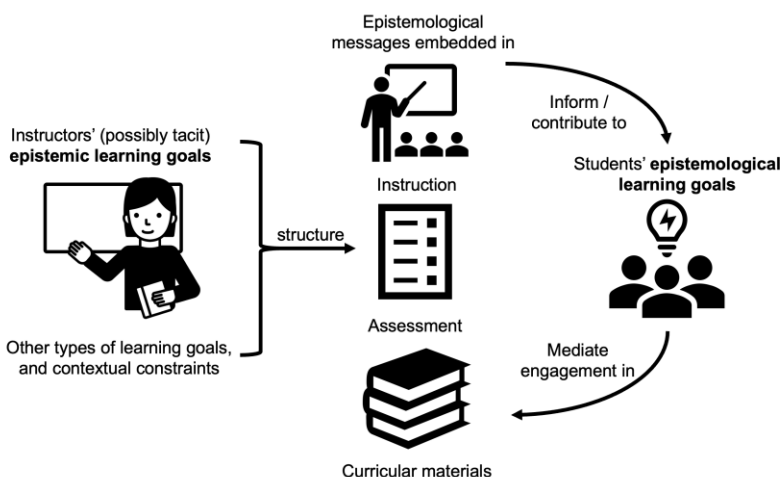
Our classes communicate what ways of knowing and learning are useful

But students do more than “hear” these messages



#2452886: *Modeling Epistemological Messaging in College Science Courses*

Simple Constructivist Model



- Assumes students filter messages through schema for how to learn in school science
- If a message fits, students will “listen” and take up the approach the teacher intends
- If a message doesn’t fit, students may ignore, differently interpret, disbelieve or try a new approach to learning

Complexifying the Model

Meet Leah

- Enrolled in organic chemistry to satisfy premed prerequisites
- Successful in the course
- Extremely reflective

Leah understands her instructor’s messages

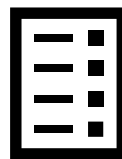


We’re going to make data-supported models because that’s what chemists do



Digging into how data connects to claims might be useful to “real chemical thinkers”, but it isn’t the most efficient way to succeed on exams

Leah’s goal filters how she “listens” to messages



Good knowledge must have a key “buzzword or phrasing or concepts”



I should learn the form of allowed words and phrases from practice exams so I can get a high score on the test.

Methods

Case Study

Interviews

- Interviewed students at multiple timepoints about their experiences with course-embedded messages
- Described how students experienced, negotiated and responded to messages
- Identified Leah’s experiences as an illustrative case of the need to go beyond the simple model above

Findings

Epistemology

- A simple constructivist model of epistemological messaging is too reductive
- High-stakes assessments send particularly loud messages
- Aligning instructors’ goals with students’ experiences requires talking to students



Niall Ellias, Andy Elby, Rosemary Russ, Ryan Stowe

← [Supporting Data: bit.ly/43v4TXU](https://bit.ly/43v4TXU)

✉ rstowe2@wisc.edu

