



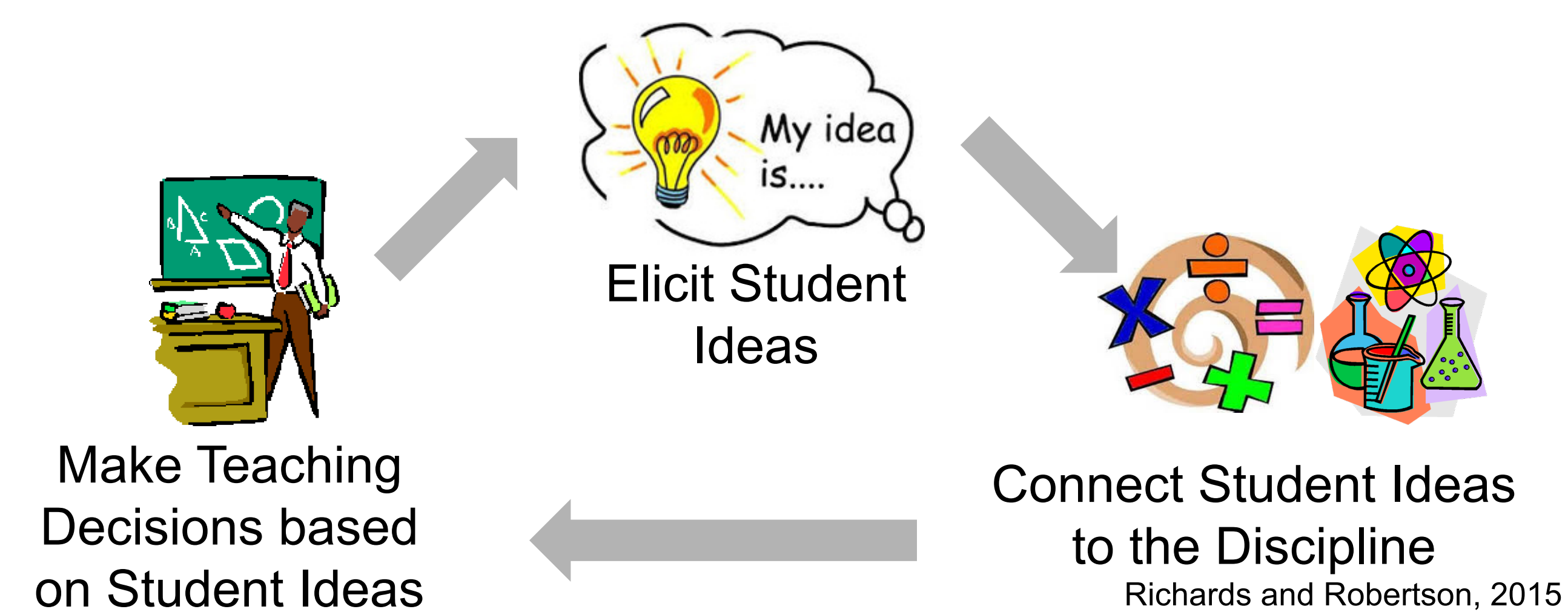
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# Pedagogical Argumentation: Pedagogical Reasoning With and About Student Ideas

Leema Berland; Rosemary Russ; Melissa Braaten

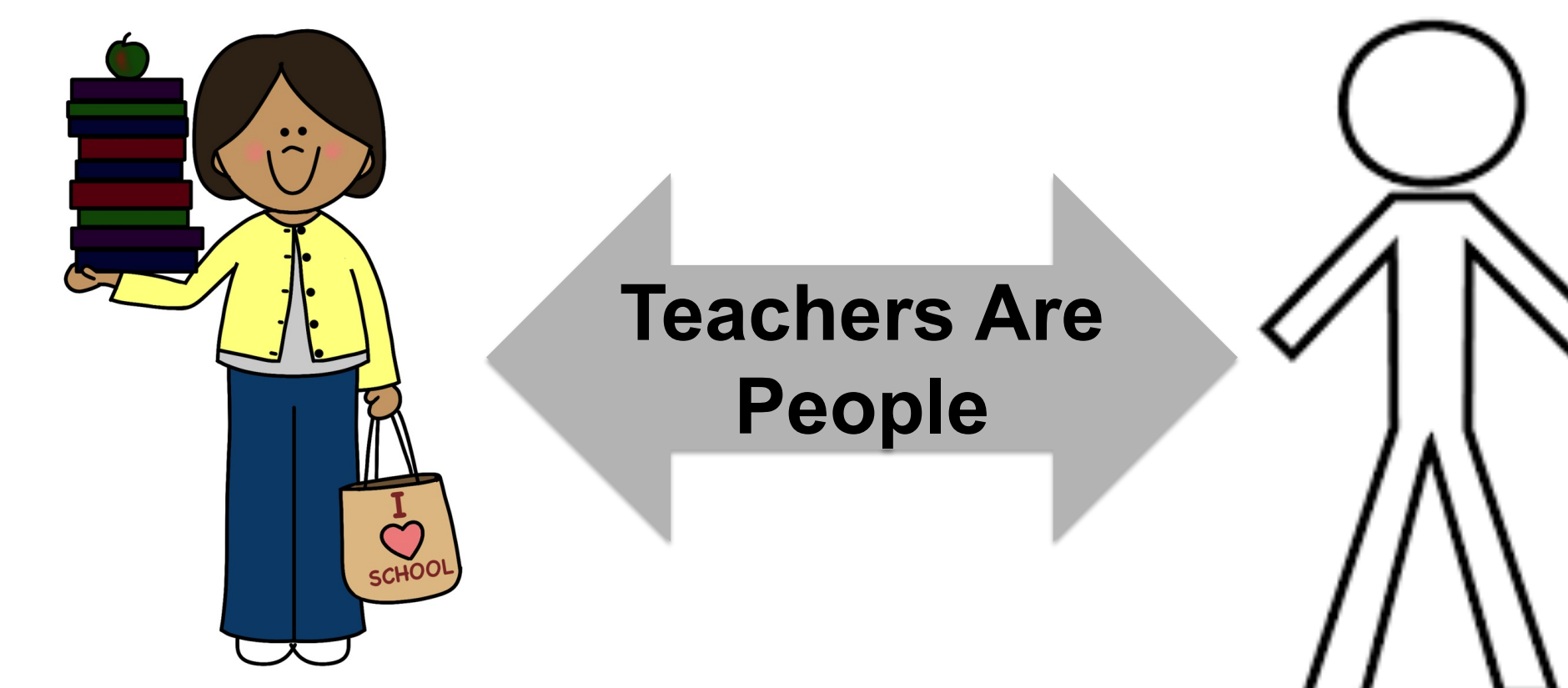


## Goal: Responsive Pedagogical Reasoning



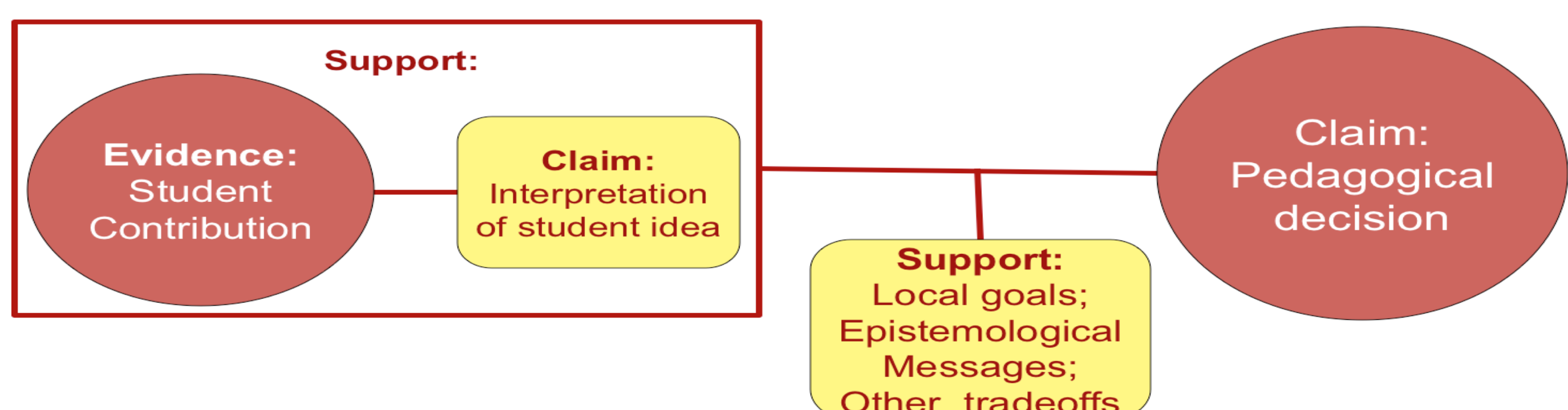
## Contribution #1: Teachers Enter Teacher Education With Resources for Pedagogical Reasoning

- Just like any learner, pre-service teachers have nascent resources from listening and responding to everyday conversational partners (Russ, Sherin, & Sherin, 2017).
- They can use those resources to learn the practice of responsive pedagogical teaching even before explicit instruction.
- In interviews conducted before methods class instruction, we see evidence of:
  - Experience with figuring out confusing phenomena
  - Making inferences about the meaning of their conversational partners
  - Focusing on meaning rather than accuracy of ideas



## Contribution #2: We Can Design our Conversations with Pre-Service Teachers to Use those Resources

### Pedagogical Argumentation

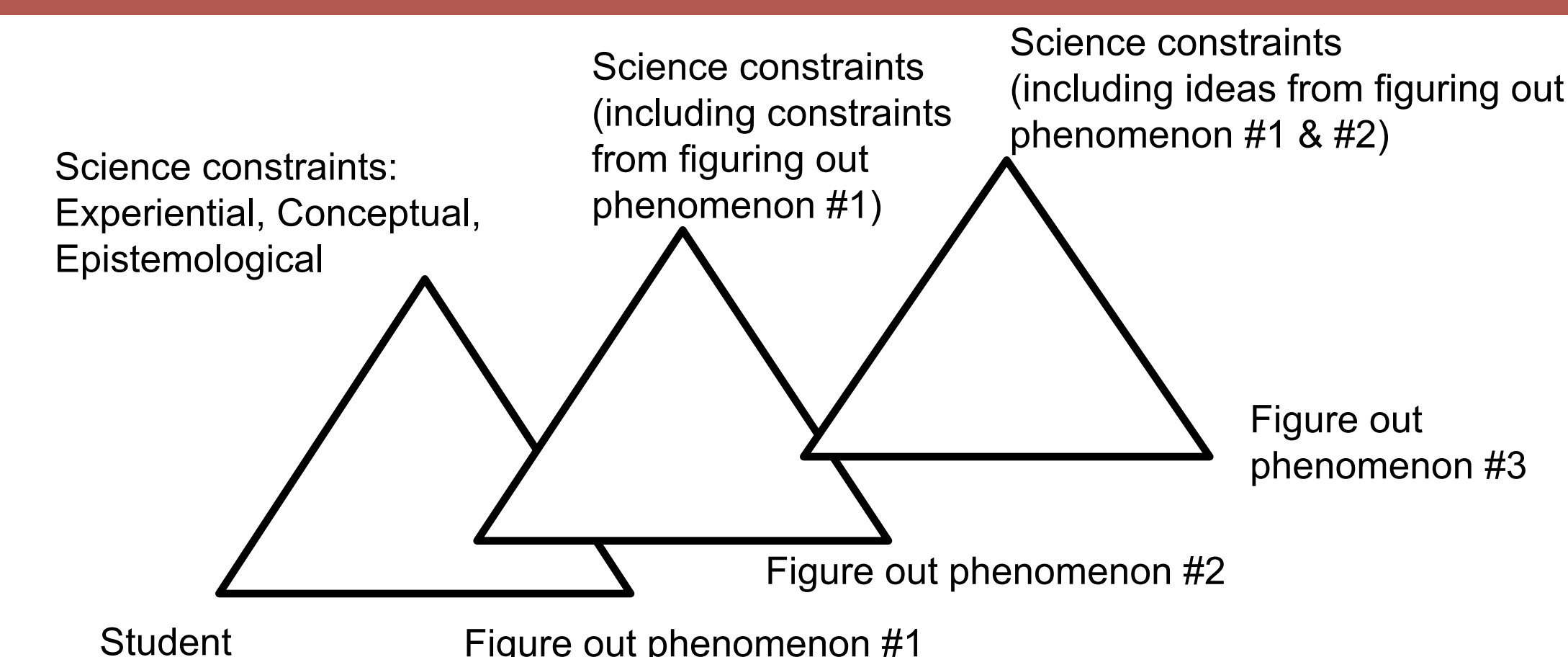


Used in

Teachers' Existing Resources

Used in

### Invented Science



## Contribution #3: Pedagogical Reasoning that is Epistemically Responsive Can Support the Scientific Practices

### Clarity

...I think like even when I was listening to the video *I was a little confused about what they were trying to say* so I think looking at it in a different way like *visually a picture might help those students who aren't really understanding what their classmates are saying.*

### Consistency

...Um I don't know how helpful this would be, but just based off what Aiden said right at the beginning maybe asking them *how many of them have been to a beach or been somewhere with sand to trying get them to think about their experiences...*

### Causality

It was more like trying to get them to explain their verb usage, like *'holds' and 'passes through.'* Um, also *what happens to the sand... when it holds water, or what happens to the sand when the water passes through.*

Supports

Supports

Supports

Scientific Practices

## Next Steps: Pedagogical Argumentation to Turn Pre-Service Teacher Attention to Social Justice

### Our New Challenge

There is no right [pedagogical decision]...What messages do these different moves send to the students in your classrooms about what science is and who is valued in our classroom?...We know that...we systematically convey to students of color and emergent bilingual that they should not participate in science...



### Preliminary Evidence that Attending to Epistemic Messages Creates Space for Equity

- “[Clarifying student ideas for the class sends the message] that different students might have different words for things, based on their experiences with prior knowledge.”
- [This particular type of text] really tells you that you can only know something about science if you are a fluent reader.”
- “[This teacher move] would encourage more [ELL] kids to discuss cause they wouldn't worry about choosing the right words.”