The design of the study:

Kohl Amin, T. G., & Ainsworth service physics teachers in Indonesia and uses mixed methods for the study. What is the relation between preservice teachers’ content knowledge and their physics problem-solving performance? Does the use of multiple representations in physics problems support pre-service physics teachers’ content knowledge (found ways to meaningfully incorporate students’ thoughts and context into the learning). This was a study to explore the enactment of procedural, processes, contexts, discourses, and interactions supports the entrenchment of teachers’ identity in science education (Arvemstam, 2014).

Research Questions

1. Does the use of multiple representations in physics problems support pre-service teachers’ content knowledge about thermodynamics?
2. What is the relation between preservice teachers’ content knowledge and their physics problem-solving performance?
3. How does the use of multiple representations influences the development of pre-service physics teachers’ physics identities?

Theoretical Framework

Kohler, 2010:...njoy physics and use it to explain the phenomena related to fluid flow, although my friends and I tend to not do the same. When I use MR, I do so because I often go for the right answer. I prefer to use mathematical representation, because I am used to it since I was in school. When I use MR, I do so because it makes a problem easier to understand. When I use MR, I do so because it gives me a chance to develop my performance, competence, recognition, and understanding in physics. When I use MR, I do so because the instructor (or the book) tells me to use it.

Methods

This study adopts a single case study approach with the case being defined by a group of 6 pre-service physics teachers in Indonesia and uses mixed-method for data collection and analysis.

Data collection and analysis:

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