Exploring pre-service physics teachers’ development of physics identity through the use of Multiple Representations (MR)
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Research Questions

1. Does the use of multiple representations in physics problems support pre-service teachers’ content knowledge about thermodynamics?

2. What is the relationship between pre-service teachers’ content knowledge and their physics identities?

3. How does the use of multiple representations influence the development of pre-service teachers’ physics identities?

Theoretical Framework

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 data collection and analysis.

Data collection and analysis

The design of the study

Methods

The correlation of recognition, performance, competence, and interest components with seeing oneself as a “physics person”

• There is a direct correlation between the participants’ content knowledge and how they see themselves as physics persons.
• Of the 4 identity components, recognition has the strongest impact on how the participants see themselves as physics person.

Discussion and Conclusion

There is a process of conceptual change based on the correct answer differences of students’ content knowledge test. The distinction between knowledge enrichment and conceptual change allows us to view how the different concept learning representations (e.g., equations, pictures, diagrams, etc.) and conceptual change allows us to view how the different concept learning representations (e.g., equations, pictures, diagrams, etc.) can influence students’ conceptual understanding which is directly related to both their competence and performance (e.g., Suara et al., 2017) - essentially how students might see themselves as physics person.

<table>
<thead>
<tr>
<th>Role</th>
<th>Method</th>
<th>Data Collection and Instruments</th>
<th>Data Analysis</th>
<th>Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1</td>
<td>Quantitative</td>
<td>Physics problems and physical concept test</td>
<td>Describing the result of semi-structured interview</td>
<td>Atlas</td>
</tr>
<tr>
<td>Phase 2</td>
<td>Qualitative</td>
<td>- Thermodynamics Concept Survey (TCS) - Semi-structured interview related to the physics problems - Glass observation - Physics identity questionnaire - Semi-structured interview</td>
<td>Content analysis</td>
<td>SPS, Atlas</td>
</tr>
<tr>
<td>Phase 3</td>
<td>Quantitative</td>
<td>- Physics identity questionnaire - Glass observation</td>
<td>Correlation between TCS score and PI score (after the learning process)</td>
<td>Content analysis</td>
</tr>
<tr>
<td>Phase 4</td>
<td>Qualitative</td>
<td>- Physics identity questionnaire - Exploratory instructions - Semi-structured interview - Glass observation</td>
<td>Correlation between performance, competence, recognition, and interest (PI) score</td>
<td>SPS, Atlas</td>
</tr>
</tbody>
</table>

References
