

# DESIGNING VIGNETTE-BASED COURSES FOR TEACHER TRAINING

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## Theoretical Background

- ❖ Teachers not only need professional knowledge but also the ability to use it in the professional tasks. Teacher training programs have to provide pre-service teachers with opportunities (teaching-learning situations) to use this knowledge
- ❖ Representations of practice promote pre-service teachers' reflection and discussion of authentic classroom situations (Buchbinder, & Kuntze, 2018). They provide pre-service teachers with real-life contexts to analyse and interpret aspects of the teaching and learning of mathematics and with opportunities to relate theoretical ideas with examples from practice (Ivars et al., 2018)

## Design principles of a vignette-based course to develop teachers' competences: noticing students' understanding and planning a lesson

- ❖ **Representations of practice:** Depiction of a classroom situation (transcriptions of students' answers to an activity, or a cartoon showing a teacher-student interaction)
- ❖ **Guiding questions** to guide pre-service teachers' reflection on the classroom situation
- ❖ **Theoretical document** with information regarding the teaching and learning of the mathematical concept

## Sample Vignette of a course related to fractions

To celebrate the end of the pandemic, Emma organized a pajama party with her friends. They ordered pizzas for dinner and  $2\frac{3}{8}$  of pizza were left in the fridge. The next day, Emma's parents ate  $1\frac{1}{4}$  of the remaining pizza. How much pizza is left in the fridge now?

Enzo, would you like to share your answer with the rest of the class?

**ENZO'S ANSWER**  
To celebrate the end of the pandemic, Emma organized a pajama party with her friends. They ordered pizzas for dinner and  $2\frac{3}{8}$  of pizza were left in the fridge. The next day, Emma's parents ate  $1\frac{1}{4}$  of the remaining pizza. How much pizza is left in the fridge now?

$2\frac{3}{8} - 1\frac{1}{4} = 1\frac{2}{4}$

After solving the problem symbolically on the blackboard, the teacher asks Enzo to try to solve it graphically.

Using a drawing is easier. I have 3 parts; each part is  $\frac{1}{8}$  and the parents eat a part, but the part is  $\frac{1}{4}$ . Then I realized that I can't subtract parts of different size. That is, the parents have eaten  $\frac{1}{4}$ , that is,  $\frac{1}{8}$  and  $\frac{1}{8}$ .

Emma organized a pajama party with her friends. They ordered pizzas for dinner and  $2\frac{3}{8}$  of pizza were left in the fridge. The next day, Emma's parents ate  $1\frac{1}{4}$  of the remaining pizza. How much pizza is left in the fridge now?

- Identify characteristics of Enzo's understanding related to the fraction concept. Justify your answer
- After Enzo's answer, if you were the teacher, what would you do next?
- Why do you think the teacher has chosen Enzo's answer to share with the whole class? What advantages does this choice provide? Do you agree with her choice?

## References

Buchbinder, O., & Kuntze, S. (Eds.). (2018). *Mathematics teachers engaging with representations of practice. A dynamically evolving field*. Cham, Switzerland: Springer.  
Ivars, P., Fernández, C., Llinares, S. & Choy, B.H. (2018). Enhancing noticing: Using a hypothetical learning trajectory to improve pre-service primary teachers' professional discourse. *Eurasia. Journal of Mathematics, Science and Technology Education*, 14 (11) em1599.



Digital Support for Teachers' Collaborative Reflection on Mathematics Classroom Situations

## Project coReflect@maths

Erasmus+ Strategic Partnership of six partner universities from four countries

## Project Goals

- Bringing together and exchanging the practice of vignette-based professional learning established by the project partners
- Developing vignette-based course concepts for teacher students and teacher educators
- Development of a digital tool which facilitates creating vignettes and collaborative reflection on vignettes

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## Activity

How do you see this classroom situation? We would like to invite you to analyse this vignette and to share your analysis with us in an anonymised online survey. Scan the QR-code or follow the link and take part in the activity!



<https://ww3.unipark.de/uc/coreflect3/>