Developing *new habits* for Physics teachers through Creative Ateliers

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Abstract. Inspired by the Reggio Emilia Atelier experience and embracing the DHAC (Development of Habits in Apprenticeship Community) framework, we promoted an in-service Physics teacher training program called "Creative Atelier for Physics Exercises and Problems". The program aimed to activate teachers' creativity and skills, expanding their knowledge in deconstructing and re-building from "regular" problems and exercises to the ten ISLE types for developing scientific abilities. We report teachers' process of activating *new* habits and some *new* exercises and problems created.

Introduction and theoretical framework

Creative Ateliers are pedagogical environments where creativity helps and scaffolds kids' learning process during childhood [1]. They are widely used in Reggio Emilia's preschool experience and are recognised for promoting educational processes worldwide. However, more important to our goal is that they could be adopted to improve learning in the context of teachers' cognitive apprenticeship [2] in training programs. Creative Ateliers are the context in which teachers might develop *new productive* habits [3], sustaining them towards their *independent practice* (as the last phase of the cognitive apprenticeship, [2]).

We embraced the theoretical framework for teachers' programs DHAC (Development of Habits through Apprenticeship in a Community) [3, 4]. In this framework, we organised a training activity based on the pedagogical concept of Creative Atelier [1].

Methods

With this training program, we aim to change the habits of Physics teachers [5]. In particular with the Atelier, we addressed the habit of administering "regular" problems and exercises, and we tutored and coached teachers to adopt new types of exercises and problems into their practices. For this purpose, we referred to the exercises and problems defined as *new types* in the ISLE (Investigative Science Learning Environment) approach [6, 7].

We inspired our training activity based on the design implementation described by Šarlah and Planinšič [8]. Starting from their design-based research, we focused on the scientific abilities [9] developed using these exercises and problems, matching and creating a reference rubric for each type. In this way, we also used these *new* types of exercises and problems to help teachers develop *new* habits concerning formative assessment, with a particular insight into the formative assessment of scientific abilities in resolving exercises and problems.

Findings and discussion

Here, we present an overall view of the teaching training program, the creative Atelier realised, and the teachers' feedback and reflections towards developing these two *new* habits: using *new* types of exercises and problems, adopting the ISLE approach in their classrooms and promoting formative assessment in the evaluation process of these kinds of exercises and problems.

References

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