

Teacher evidences on the instruction of learning skills for science as a basis for continuous professional development

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Three cycles of evidence-based continuous professional development (CPD) programs for promoting the instruction of learning skills for science (LSS) were implemented. In these CPD programs teachers presented and discussed evidences about their LSS practice and summarized the experience in portfolios. 'Evidence', in this context, means a collection of artifacts from teachers' practice, accompanied by written entries that elaborate or show data, conclusions and reflections concerning instruction and students' learning.

The research accompanied the implementation of the CPD programs and examined the professional profiles of the teachers (n=24) as well as changes in these profiles along the CPD program. The analysis was based on the teachers' portfolios interviews, and discourse. We used a specific diagnostic tool that was partly developed in a previous study (Spektor-Levy, Eylon and Scherz, 2008). The tool comprised 6 categories on a scale of 1-5: (P) - Perceptions about the acquisition of skills; (M) - The instructional model; (T) - Teaching and using the instructional materials; (A) - Assessment of LSS Learning; (I) - Influence and involvement in school and beyond.

The analysis of teachers' professional profiles indicates that all the teachers conceive LSS instruction and assessment as very important. They are well acquainted with a proper model of LSS instruction. Most of them were able to develop new learning activities for LSS teaching and collaborated with their colleagues at school in the context of LSS instruction. However, we found that teachers had different levels of performance in implementing the model of instruction and in assessment of the students' learning. We also found that some teachers had difficulties to prepare evidences. The analysis of three case-studies showed that the CPD program improved teachers' performance in LSS instruction and in evidence preparation.

These findings show that evidence-based CPD programs can serve as effective frameworks for promoting professional development, and that the portfolios of evidences can be used for characterizing teachers' professional profiles.