SP - (16481) - PROMOTING PRIMARY STUDENTS KNOWLEDGE OF SCIENTIFIC DOMAIN AND PRACTICES IN A TECHNOLOGY ENHANCED TEACHING LEARNING SEQUENCE

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Short Abstract

This study examines the development of primary school students knowledge of domain and scientific practices, who participated in a technology-enhanced, innovative, inquiry-based Teaching Learning Sequence (TLS) in the domain of Optics. Specifically, TLS focused on enhancing scientific questioning, design of experiments and understanding of reflection and diffusion of light. Participants went through guided and open experimental investigations based on integration of virtual and physical laboratory activities. Scaffolding process concerning questioning and design of experiments was based on frameworks that were developed and explicitly taught through structured worksheets and metacognitive activities to the students. Pre and post questionnaires were assigned to all of the students and semi-structured interviews to half of them. Non parametric statistical analysis showed that, after instruction, students significantly improved their knowledge of questioning practice, several aspects of experimental design and their domain knowledge.