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SP - (15794) - THE WATER CYCLE: A DESIGN BASED RESEARCH (DBR) APPROACH

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Short Abstract

The research focuses on the recognition of misconceptions about the water cycle of 11-12-year-old students after the implementation of a Teaching Learning Sequence (TLS). The students were asked to explain what in the TLS they had liked the most or found more surprising, because they didn't know or thought it was different. The activities designed are centred on the construction and use of a dynamic model in the laboratory. The study was carried in two consecutive school years and the results of the first study were used to introduce changes in the TLS, mainly in three different aspects: misconceptions detection, instructions for the students and teacher strategies. The comparison of both studies' results shows an improvement on the students' awareness of their previous ideas in the second one, especially about aquifers structure and dynamics, and the communication between superficial and underground waters. The Design Based Research (DBM) methodology applied seems to have proven effective.