

SP - (15758) - COMPARING TEACHERS' AND STUDENTS' PRECONCEPTIONS ABOUT NANOSCIENCE CONTENT: THE CASE OF THE LOTUS EFFECT

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Short Abstract

In this study we aimed to identify similarities between Primary Teachers' (PTs) (n=154) and Primary Students' (PSs) (n=347) preconceptions about the lotus effect under the lens of the Conceptual Change. We identified five categories of preconceptions. Four of the categories were common between the two groups. Most of the participants interpreted the lotus effect based on a perceptual based agent (e.g., soft/ hard/smooth surface). Therefore, both the PTs and the PSs approach the lotus effect as a Direct Process (has an identifiable agent that causes some outcome in a sequential sort of way). This finding has implications in Science Education. We argue that training courses for PTs and educational interventions for PSs could be designed under a common rationale: to support the learners move their explanations from the Direct to the Emergent Processes (have neither an identifiable causal agent or agents nor an identifiable sequence of stages), explaining the phenomenon as a result of the collective interaction of agents, e.g., the leaf's micro and nanostructure and the trapped air between the interstitial spaces.