A suggestion of a Lakatosian heuristic teaching sequence model in science education

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Abstract.

It has been reported that most students just try changes in their soft core. They preserve the hard core by offering auxiliary hypotheses at the first opportunities for conceptual change by many researchers. In this context, the main objective of the present paper, based on the theoretical frameworks of Lakatosian heuristic principles, is to propose using a 'cognitive teaching sequence' that could help science teachers and students resolve the conflicts between students’ existing ideas and target scientific concepts. A cognitive teaching sequence could be a promising teaching strategy and a reflecting to enhance science teaching and learning. This study suggested that students’ alternative conceptions are not wrong, rather, we should establish various teaching strategies and procedures according to students’ responses to discrepant events that oppose students’ alternative conceptions. For a starting point, it is necessary to discover the core beliefs of students’ alternative conceptions in order to develop proper teaching strategies.

Keywords: Discrepant events; Lakatosian heuristic principle; teaching strategies and procedures

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