



# Students' misconceptions and different approaches to conceptual change: from theory to practice.

Dr Nikolaos Fotou<sup>1</sup>

<sup>1</sup> Department of Education, Maynooth University, Ireland

## Abstract

A great body of research in science education has focused on identifying difficulties students experience in learning particular topics or specific concepts in science and, in some cases, propose a way to deal with them. These difficulties have been variously described in the literature as misconceptions, alternative frameworks, naïve and intuitive theories with authors having a preference for one term over another according to their philosophical and epistemological positions. In turn, these different views have been reflected on the ways that these difficulties can be confronted with the most popular and prevalent method in science education being that of conceptual change. The purpose of this lecture is to discuss the different approaches to students' difficulties in understanding science, how these have shaped the way conceptual change is fostered and by using examples, their implications for instruction in science classrooms.