



Contribution ID: 240

Type: Oral Presentation

An evaluation of the impact of scientific explanation model on pre-service teachers' understanding of basic concepts in electricity

Thursday, 11 July 2019 11:40 (20 minutes)

Electricity as a topic is regarded as challenging worldwide because students from different countries around the world are reported to have the same pattern of learning difficulties in understanding electricity due to misconceptions associated with it. The literature on misconceptions suggested further research to determine if instructors are able to prescriptively address students' misconceptions in such a way that learning is improved significantly and also if teachers are gathering insights into students' preconceptions and thought processes. The understanding of students' preconceptions and thought processes is believed to be helpful in planning for future interventions. As an attempt to bridge the conceptual gap in students' understanding of basic electric circuits, literature advised university lectures to pay more attention into students' misconceptions by developing instructional strategies or materials that will enhance students' understanding. In bridging the gap, a two-tier test was developed guided by selected designed principles adopted from knowledge building theory. The current study explored the impact of the scientific explanation model as an instructional strategy, on bridging the conceptual gap about some basic concepts of the DC circuit.

Apply to be considered for a student award (Yes / No)?

Yes

Level for award (Hons, MSc, PhD, N/A)?

PHD

Primary author: Mr KHWANDA, Mphiriseni (University of Johannesburg)

Co-author: Mr MOLEFE, Paul (University of Johannesburg)

Presenter: Mr KHWANDA, Mphiriseni (University of Johannesburg)

Session Classification: Physics Education

Track Classification: Track E - Physics Education