Contribution ID: **106** Type: **Oral Presentation**

Learners' Understanding of Ammeter and Voltmeter in a DC Schematic Circuit

Wednesday, 13 July 2011 11:00 (15 minutes)

<p>This study explores learners' knowledge of measuring instruments (Ammeter and Voltmeter) in a direct current resistive circuit. It investigates learners' understanding of how instruments should be connected and why they have to be connected in a particular way. Ammeter and voltmeter are used to determine the behavior of a circuit by indicating the readings of current and voltage, respectively. An educator sees an ammeter as an "invisible" component because it does not change the characteristics of a circuit. However, a learner views an ammeter differently. A paper-and-pencil questionnaire was administerd to grade 12 learners. Group interviews were conducted in order to validate and support the results of the questionnaire. The results indicate that learners lacked the basic understanding of the role played by meters (why we need them in electrical circuits). It was also evident that due to lack of practical experience with real circuits, learners did not know how these meters should be connected. This paper will report on some of the results and their implications for teaching/learning of electricity.

Level (Hons, MSc,
   PhD, other)?

MSc

Consider for a student
   award (Yes / No)?

Yes

Would you like to <br> submit a short paper <br> for the Conference
 Proceedings (Yes / No)?

Yes

Primary author: Mr MAUTJANA, Ramaite Thomas (NMISA and University of Limpopo)

Co-author: Prof. NETSHISAULU, Thomas (University of Limpopo)

Presenter: Mr MAUTJANA, Ramaite Thomas (NMISA and University of Limpopo)

Session Classification: Education

Track Classification: Track E - Physics Education