



Contribution ID: 73

Type: Oral Presentation

## TRAINING FOR PHYSICAL SCIENCE TEACHERS

Thursday, 4 October 2018 17:40 (20 minutes)

The key to the advancement of society has always been an educated population. Thus the goal of every civilised government is the education of their people. There are, however, not enough countries for whom this is a sufficiently high priority. But the government of democratic South Africa seems keen to get this done. As such, a collaboration has been created between the UK Institute of Physics and the South African Institute of Physics to establish teacher training workshops for secondary school teachers in physics. In this country, physical science is taught, a combination of both physics and chemistry and we include, wherever possible, chemistry instruction for the teachers as well.

We began in 2013 with workshops in Soweto, anywhere from two days to a week long. These had between 50 and 150 teachers. We have since started workshops in Eastern Cape and Limpopo provinces and would hope to expand to all 9 provinces in the country.

Some of us are old enough to have studied physics under the old chalk and talk lecture system. We want to take advantage of much of the research done in physics education and use more effective techniques such as developed by people such as Redish<sup>1</sup>, Mazur<sup>2</sup>, and many others. We emphasise multiple choice questions and divide the teachers into groups of 2 or 3 and give them sheets with A B C D for them to answer. This has proven popular with the teachers and we are trying to determine how many are using this in their classrooms. In addition, we have introduced many PhET videos to help them illustrate many physics principles when they lack the relevant demonstration equipment.

A very important part of our work is to train local people who have science backgrounds, to adopt these newer teaching methods, and to take over the training of school teachers in their areas. This is ongoing and there are local people now in these three areas who can do this work. This has been on a volunteer basis to the present but we are seeking funding to provide some support for local people who can do this training.

1. E F Redish, A theoretical framework on physics education research: Modeling student thinking PROCEEDINGS - INTERNATIONAL SCHOOL OF PHYSICS ENRICO FERMI, Varenna Italy, 2003, IOS Press 2004 (pages 1 - 64)
2. E Mazur, Peer Instruction, Harlow, United Kingdom Pearson 2013

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

No

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

None

**Primary author:** Prof. WOLFE, David (UK Institute of Physics)

**Co-authors:** RIJSDIJK, Case (SAIP, ASSA); KHWANDA, Mphriseni (University of Johannesburg); MOLEFE, Paul (University of Johannesburg)

**Presenter:** Prof. WOLFE, David (UK Institute of Physics)

**Session Classification:** Parallel Session 3

**Track Classification:** Track H - Teacher Education and Training in Physics