Contribution ID: **10** Type: **Oral Presentation**

The inclusion of nature of science in grade 12 high-stakes physics assessments in South Africa

Thursday, 7 July 2022 15:00 (15 minutes)

This research explores the representation of Nature of Science (NOS) is three national high-stakes grades 12 physics examinations. This study has particular significance due to curriculum reform that deliberately attempted to transform the previous curriculum that depicted to the learner and teacher a view of science which was not compatible with the nature of science. Science curricula worldwide have given more emphasis to NOS and this goal was also set by curriculum developers in post-Apartheid South Africa. It is therefore of interest to know whether this curriculum intent translates into the assessment of learners in high stakes physics examinations. A recent characterization of NOS is called the Family Resemblance Approach (FRA). This study adopted FRA as conceptual framework in guiding the analysis of grade 12 physics items for the representation of NOS. FRA offers 11 categories that consolidate the epistemic, cognitive and social aspects of science in a holistic, flexible and descriptive way. The findings of this study suggest that greater attention needs to be given to the representation of NOS in both the cognitive-epistemic and social-institutional systems. A particular concern is the weak representation of NOS in the socio-institutional dimension where it was found that physics items only to a small extent address the categories of professional activities, scientific ethos, social certification and dissemination, social values of science, social organizations and interactions, political power struggles, and financial systems. An implication of this is that learners are not tested on higher-order skills such as critical thinking that would inform their decision-making on socio-scientific issues related to physics. This is therefore a call for deliberation amongst stakeholders on the tasks that set in physics examinations.

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

No

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

N/A

Primary author: RAMNARAIN, Umesh (University of Johannesburg)

Presenter: RAMNARAIN, Umesh (University of Johannesburg)

Session Classification: Physics for Development, Education and Outreach

Track Classification: Track E - Physics for Development, Education and Outreach