



**8<sup>th</sup> UNISA/ISTE CONFERENCE ON MATHEMATICS, SCIENCE AND TECHNOLOGY EDUCATION**

**23 – 26 OCTOBER 2017**

**Held at the Mopani Camp in Kruger National Park, Limpopo, South Africa**

## **Proceedings**

***“Towards Effective Teaching and Meaningful Learning in Mathematics, Science and Technology Education”***

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The organising committee of ISTE 2017 Conference would like to immensely thank the following reviewers who painstakingly reviewed the conference papers. Their efforts are well appreciated and acknowledged

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## **Message from the Conference Chair**

The Institute for Science and Technology Education (ISTE), was established by the University of South Africa (Unisa) to conduct research in Mathematics, Science and Technology Education (MSTE). The mission of ISTE is to provide further insight into issues pertaining to the teaching and learning of mathematics, science and technology in our education institutions and to provide post-graduate education in MSTE.

The teaching and learning of mathematics and science continue to be a bane to many communities worldwide, including South Africa. On the other hand, however, there are countries that have managed to come up with innovative initiatives to improve the quality of mathematics, science and technology education. It is against this backdrop that a need for a forum, that became to be known as ISTE Conference, was identified. The forum is largely intended to deliberate on possible ways and means to better the learner performance in mathematics, science and technology by exploring challenges and identifying deficiencies and weaknesses common in the mathematics, science and technology classrooms. Hence, the theme of the ISTE Conference is 'Towards effective teaching and meaningful learning of mathematics, science and technology'. ISTE organised its maiden Conference in 2010.

Over the years the Conference has had successes and made credible impact in the area of MSTE. It has drawn interest from various MSTE practitioners and had its Proceedings cited and recognised. Hence, among others, the ISTE Conference Proceedings have continued to attract subsidy from the erstwhile South African Department of Education and now Department of Higher Education and Training. Papers presented at the Conference are

- (1) compiled according to the stipulations of the Research Outputs Policy 2015 that was gazetted by the South African Minister of the Department of Higher Education and Training, Dr BE Nzimande on March 11, 2015 and
- (2) subjected to a blind review process that involves two experts in the relevant discipline before they can be published in the Proceedings.

I must say the Conference will continue to value the indelible interest and persistent patronage of the delegates. Lastly, ISTE Conference sincerely thanks the Unisa College of Graduate Studies; South African National Parks (SANPARKS); Do-Lights Transport (Polokwane) and Tindlovu JV CC for the helpful support and vital sponsor. Appreciations are also extended to the membership of the Organising Committee.

LD Mogari  
Conference Chair



## **Review Process**

The ISTE Editorial Committee received 56 manuscripts in the fields of Mathematics Education, Science Education and Technology Education. The manuscripts were given to experts in the respective fields for blind review. Each manuscript was reviewed by two experts. On receipt of the reviewers' comments the sub-Editors of each field considered the reviews and if an agreement was not reached by the two reviewer the paper was sent to a third reviewer. The reviewers' comments were then sent to respective Authors to make the necessary improvements. The authors had to write a letter indicating how they have addressed all the corrections and submit it back to the sub-editors. Of all the manuscripts received, 43 (76.8%) were eventually published in the ISTE 2017 Conference Proceedings. Of this number, 37 (86,0%) manuscripts were authored by non-Unisa affiliates.

