

NSTF Discussion Forum:

Language and STEM education at school level – policy and research

A discussion forum led by the proSET sector of the NSTF (Professional Bodies and Learned Societies)

3-4 October 2017

Biographies of Speakers

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| <p>Mr BS Monyaki</p>  | <p>A Chief Education Specialist (CES) for Languages, specialising in English, appointed at the Department of Basic Education. Previously worked as a Subject Advisor and Deputy Chief Education Specialist for English in the Free State Department of Education. Mr Monyaki has served in a number of committees including curriculum and policy development. He holds an MA in Applied Language Studies (ALS – University of Potchefstroom) and another in English Language Teaching (ELT – University of Warwick). Loves reading and writes poetry.</p> |
| <p>Mr Mpho Madisha</p>  | <p>Mpho Kendy Madisha is the current chairperson of BSTEP (the Black Science, Technology and Engineering Professionals) an advocacy organization promoting black excellence in STEM fields. He is a mechanical engineer by training and started his career in 2001 as a simulation design engineer working for PBMR. Later he took up a position as a business consultant with Accenture Ltd where he was involved in financial and business process analysis for clients such as SAB Ltd. In 2005 he took up a research position with the Netherlands Research and Consultancy Group (NRG) where he was designing nuclear hydrogen production facilities. Since 2009 he has been a director of various small engineering companies working on small contracts in engineering projects.</p> <p>In 2011 he reconnected with his passion for research and teaching and is now a lecturer at the faculty of engineering at the University of Pretoria. In the last few years he has been actively involved in forums aimed at improving engineering education. He received in 2012 a laureate for Education Innovation awarded for the significant contribution made with regards to education innovation at the University of Pretoria.</p> |
| <p>Prof Mamokgethi Phakeng</p> | <p>Mamokgethi Phakeng (formerly Setati) is full professor and Deputy Vice Chancellor for Research and Internationalisation at the University of Cape Town. She holds a PhD in Mathematics Education from the University of the Witwatersrand. She is a B2 NRF-rated scientist who is as passionate about research as she is about teaching and community engagement. She has been invited as a speaker and visiting professor at international conferences and universities in Australia, Botswana, Brazil, Canada, Denmark, Finland, India, Italy, Kenya, Lebanon, Lesotho, Mexico,</p> |



Mozambique, Namibia, Netherlands, New Zealand, Pakistan, Senegal, South Korea, Sweden, Switzerland, UK and USA.

She has won many awards for her research and community work. In April 2016, she was bestowed with South Africa’s highest honour, the Order of Baobab in Silver, by the President for her excellent contribution in the field of science and representing South Africa on the international stage through her outstanding research work. In August 2016 she was awarded the prestigious Businesswoman of the Year Award in the education category. Prof Phakeng was elected as a member of the Academy of Science of South Africa (ASSAf) in November 2007; an honorary member of the Golden Key International Honour Society in May 2009 and an honorary life member of the Association for Mathematics Education of South Africa (AMESA) in July 2009. In 2008 she became the first South African woman to be appointed to co-chair a study commissioned by the International Commission on Mathematical Instruction. The study is entitled “mathematics and language diversity” and has published an edited volume.

Kgethi, as she is affectionately known, is a trustee of the FirstRand Foundation and a member of the boards of the CSIR and the Oprah Winfrey Leadership Academy for Girls (OWLAG). She has served as national president of the Association for Mathematics Education of South Africa (AMESA) from 2002 to 2006, chairperson of the Board of the South African Mathematics Foundation (SAMF) from 2005 to 2006, secretary and member of the executive committee of the International Group for the Psychology of Mathematics Education (PME) from 2003 to 2007 and as President of Convocation of Wits University for five years (from 2011 – 2016).

She is the founder of the Adopt-a-learner Foundation (www.adopt-a-learner.com), a non-profit organisation that started in 2004 and provides financial and educational support to students from township and rural areas to acquire higher education qualifications.

Ms Jade Jacobsohn



Jade Jacobsohn is responsible for the scale-up phase of the Nal’ibali national reading-for-enjoyment campaign, working with the management team to provide strategic direction for partnerships and growth. She is a seasoned anthropologist with research experience in South Africa, Uganda and Malawi, and has a solid grassroots background in the Eastern Cape as founder and Programme Manager of the Sophakama Community Partnership. She has managed various educational projects, specifically focused on early childhood development and environmental education within economically deprived areas, and has worked closely with Anglo American, USAID, the DG Murray Trust, Sesame Workshops and Food for Development. Her academic qualifications include a BSocSci (Hons) from Rhodes University, and an MSc from the University College of London.

Ms Ingrid Sapire

Ingrid Sapire has been involved in mathematics teacher education for 24 years, predominantly at Wits University. She has been extensively involved in the development and presentation of materials for mathematics teacher education courses and training programmes, has written and edited primary and high school mathematics text books, and has developed and reviewed on-line interactive mathematics material for



teachers and teacher educators. Much of the material has been developed as OER which enables ongoing use and improvement across a wide range of platforms. Research projects she has been involved in are the HSRC Grade 6 NW/Botswana comparative study and the PMRP (Primary Maths Research Project) replication study. She was director of the FP (Foundation Phase) component of the Gauteng provincial strategy for the improvement of mathematics education in the primary schools (Gauteng Primary Literacy and Mathematics Strategy/GPLMS) and she has worked on multilingual materials for use in Gauteng schools (and since then nationally in South Africa). She is the FP mathematics team leader for PILO (the Programme for Improving Learning Outcomes) which implemented a pilot FP Mathematics strategy (incorporating bilingual materials for FP) in two provinces in South Africa (KwaZulu Natal and the Northern Cape) in 2015-2017. This strategy will be implemented in the KZN province in 2018.

She is currently employed part time as a project co-ordinator and researcher at Wits University where she is leading a research project and is working on her PhD focusing on the mathematics language policy in the Foundation Phase.

Mrs Wendy Shihlamariso Chauke



Wendy Shihlamariso Chauke joined the University of Limpopo (UL) in 2009 after being a graduate of the same institution. Since coming to UL, she is serving in the Faculty of Humanities, School of Education in the Department of Language Education, Social Sciences Education & Educational Management for about seven years. Upon joining the university, she has been teaching Xitsonga, Geography and Communication. From 2014 to date, she is specializing in teaching Xitsonga for Education to student teachers who upon completion of their degree will teach Xitsonga Home Language in Senior and FET phases. Among other things she teaches and encourages her students to use electronic media during teaching and learning.

The highlight of her career to date was her involvement in a group research at the UL. This was a Community Development Project, titled 'The use of resources in Grade 1 classrooms'. Participants were 20 teachers selected from 10 primary schools around the University. The aim was to train Foundation Phase Grade 1 teachers in the development of resources for teaching and learning and to conduct research on this process.

The project was divided into three phases:

- To conduct pre- intervention observation of lessons in Foundation Phase Grade 1 classrooms on the use of resources
- To provide practical training sessions on the development of resources to teach Grade 1 Numeracy, Literacy and Life Skills
- To assess the impact of the resources developed on the teaching and learning of Numeracy, Literacy and Life Skills in Grade 1 classroom.

Her professional career outside of academia include writing, translating and editing for employers such as ANOVA Health Institute and Kalahari publishers.

She is married and blessed with two kids, a girl and a boy.

Mr Dirk van Schalkwyk

Studied at University of Port Elizabeth (UPE) now Nelson Mandela University (NMU). Teaching Gr 7 Science. Involved in the Science Made



Sensible (SMS) Project with Prof Michael Gaines of Miami University in Miami Florida in the USA since 2009.

2016 - Presented workshops with Science teachers and students at Miami University and visited schools in the Miami Dade School District to collect data for the SMS project.

2017 - Co-presenting an Abstract with Prof Gaines at the SAARMSTE Conference in Bloemfontein.

Co-ordinating and mentoring SMS students from Miami University and University of Pretoria in 4 Primary Schools in Pretoria in the SMS Project. Collecting data to be presented at the next SAARMSTE 2018 Conference in Gaborone, Botswana.

Prof Samuel Ouma Oyoo



Samuel Ouma Oyoo graduated with a PhD in Education from the Faculty of Education, Monash University, Melbourne, Australia in 2005 after authoring a PhD thesis entitled '*Effective Teaching of Science: The Impact of Physics Teachers' Classroom Language.*' Samuel previously graduated with a Master of Education degree, *with Distinction*, in Science Education from the University of Leeds, England, United Kingdom and with an Honours Bachelor of Education Degree *in the First Class* from The University of Nottingham, England, United Kingdom.

Currently, Samuel holds the academic rank of Associate Professor of Science Education at the School of Education, the University of the Witwatersrand, Johannesburg, where he teaches physics and physics-related courses to undergraduate and postgraduate student teachers. He has been the convenor of the *Language and Communication in Science Education* course component of the MSc (Science and Mathematics Education) degree programme. Prior to moving to South Africa, Samuel held teaching and research leadership positions in Science Education at universities in Kenya and Tanzania. From 7 July 2011 to 7 July 2017, Samuel was the International Study Association on Teachers and Teaching [ISATT]'s Outreach Coordinator (ExCo member) and National Representative for South Africa.

His current research areas cover the general area of Education with a focus on Language for, and in effective teaching and learning of school science in general but physics in particular. He examines and supervises Honours, Masters and PhD research studies in this area of research focus. He recently relaunched the *Language and Communication in Science Education* Research Thrust at the Marang Centre for Mathematics and Science Education, and is the Chief Investigator in the project "Language and Learning and Teaching Science in South Africa."

Samuel serves as referee and Associate Editor for a number of academic research journals including Research in Science Education (RISE), International Journal of Science Education (IJSE), Journal of Research in Science Teaching [JRST], Teachers and Teaching: Theory and Practice [TTTP] Education as Change, Africa Education Review, The African Journal for Research in Mathematics, Science and Technology Education, and the International Journal of Learning: Annual Review, among others. He has recently accepted an invitation to be a member of the Editorial Board of the journal, Research in Science Education [RISE], the official journal of the Australasian Science Education Research Association [ASERA].

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| | <p>Prof Oyoo a well published academic, almost exclusively in international peer reviewed outlets, holds two journal awards: “<i>International Award for Excellence in the area of Literacy and Education</i>” and the “<i>Pippa Stein Award for Excellence in Educational Research in Africa</i>” both by The Learner Community. His latest publication has appeared in the top rated science education research journal, <i>Research In Science Education, Vol 47</i>, issue 4, pages 783–804, and is entitled “<i>Learner Outcomes in Science in South Africa: Role of the Nature of Learner Difficulties with the Language for Learning and Teaching Science.</i>”</p> |
| <p>Mr Johan Blaauw</p>  | <p>Johan has worked as a language practitioner since 1979 (after teaching languages at high-school level for a number of years), working at the SABS, Anglo American Corporation and a forerunner firm of the audit firm PricewaterhouseCoopers before joining the North-West University (NWU) in 1995.</p> <p>He is the current Chair of the South African Translators' Institute (SATI) and also previously served as this organisation's secretary for an uninterrupted 17-year spell. He is a SATI-accredited translator, interpreter and language editor, as well as a trainer in all these fields, at the NWU and as a freelancer. He is currently the director of the NWU Language Directorate and is responsible for translation, editing and interpreting services, language planning and policy implementation, and a large educational interpreting service rendered in university classes (some 2000 hours per week).</p> <p>He is also involved in research in the language practice field, particularly in educational interpreting, has presented conference papers locally and overseas, and has authored and co-authored articles in accredited and other local and international journals and publications. In his master's degree research, he covered the designs of codes of ethics and his dissertation was on the design of a code of ethics for text editors.</p> |
| <p>Prof Satsope Maoto</p>  | <p>Prof Satsope Maoto is currently the Acting Executive Dean in the Faculty of Humanities, University of Limpopo. She has been involved in the teaching profession since 1983 as a mathematics educator at secondary schools, teacher college (1987) and university (2000). She is thus best described as a mathematics teacher to the last.</p> <p>She holds a Doctorate degree in Mathematics Education from CURTIN University of Technology in Perth, Australia. In addition to performing teaching, authoring, lecturing, publishing, administrative, management and leadership roles, she coordinated PRESET/INSET (pre-service and in-service) activities for the Limpopo and Mpumalanga Departments of Education. She also participates in different educational forums (e.g. Limpopo Provincial Teacher Education and Development Committee; Education Deans Forum; Senate Teaching and Learning Committee). She is also one of the Directors of Ukuqonda Institute (a mathematics and science non-profit organization that has to ensure quality education in schools and at university level).</p> |
| <p>Ms Carina Coetzer</p> | <p>Ms Coetzer’s teaching career started in 1987. HOD Languages 1990-2004. Communication specialist at Ukuqonda 2005-2017.</p> |



Over the past 12 years she has been working with post matric learners attending the one year Ukuqonda university and technology preparedness programmes. These programmes are designed for students who want to acquire a deeper understanding of mathematics, physical sciences and improve their academic and general English language communication skills.

Mr David Benjamin Botha



Mr David Benjamin Botha is a Ward Councillor Overstrand Municipality and Chair Infrastructure and Planning of the Mayoral Committee 2016. Sandbaai Ward Councillor Overstrand Municipality 2014 – 2016. Lecturer University of Johannesburg and Cape Peninsula University of Technology 2011 – 2012. Executive Director of the South African Institution of Civil Engineering for about 19 years 1991- 2010. Regional Manager Infrastructure Development for low income families at the SA Housing Trust 1988 to 1990. Deputy Town Engineer, Planning and Design, Richards Bay 1982 to 1988. Assistant Town Engineer Planning and Design, Buildings and Town Planning Potchefstroom.

Prof Piet Human



My career includes a stint in industry, two years at the HSRC, teaching mathematics in various schools, teaching at the Universities of Pretoria and Stellenbosch. I was professor of Mathematics Education at University of Stellenbosch from 1978 to 1995, and founded the HSRC-funded Research Unit for Mathematics Education at Stellenbosch University (RUMEUS) in 1983.

I am currently CEO of the Ukuqonda Institute, an NGO dedicated to promoting excellence in STEM education.