



**34th Annual Conference of the Southern African Association for Research in
Mathematics, Science and Technology Education (SAARMSTE)**

Hosted by University of Johannesburg, South Africa

Auckland Park Bunting Road Campus

Conference dates: 19 – 22 January 2026

Conference theme: *“Reimagining STEM Education: Inspiring Innovation for Social Impact and Sustainability”*

34th SAARMSTE CONFERENCE 2026: Day-to-Day ACADEMIC PROGRAMME

MONDAY 19TH JANUARY 2026 (DAY 1)

08H00 – 15H00

REGISTRATION DESK

VENUE: School of Tourism and Hospitality (STH)

09H00 – 10H30

DAY 1

09H00 – 10h30

PLENARY WORKSHOP (MATHEMATICS)
Prof Alf Coles

*Professor of Mathematics Education at the
University of Bristol*

Workshop Title: STORY-TELLING PRACTICES OF
MATHEMATICS EDUCATION

VENUE: Room 10B

09H00 – 10H30

PLENARY WORKSHOP (SCIENCE)
Prof Knut Neumann

*Director of the Department of Physics Education
at the IPN–Leibniz Institute for Science and
Mathematics Education.*

*Professor of Physics Education at the Christian-
Albrechts-University, Kiel, Germany*

Workshop Title: USING AI TO ANALYZING AND
SUPPORTING LEARNING AND INSTRUCTION IN
SCIENCE CLASSROOMS

VENUE: Room 5B

09H00 – 10H30

PLENARY WORKSHOP STEM
Prof Jane Catherine Ngila

*Visiting Professor, University of Johannesburg,
Department of Chemical Sciences*

*Executive Director, African Foundation for
Women & Youth in Education & STI*

Workshop Title: WHY IT MATTERS FOR
AFRICAN WOMEN TO BE IN STEM

LEADERSHIP VENUE: Room 4

10H30 – 11H00

COFFEE/TEA BREAK

VENUE: School of Tourism and Hospitality (STH)

11H00 – 12H30

OPENING CEREMONY

VENUE: FADA Auditorium

12H30 – 13H30

LUNCH

VENUE: School of Tourism and Hospitality (STH)

13H30 - 14H30

PLENARY ADDRESS

The Status of African Women in Research in Mathematics, Science and Technology Education: Successes and Challenges

Prof Jane Catherine Ngila

Visiting Professor, University of Johannesburg, Department of Chemical Sciences

Executive Director, African Foundation for Women & Youth in Education & STI

Introduction by Prof Lydia Mavuru

VENUE: FADA Auditorium

14H30 – 16H00	MATHEMATICS PAPERS Venue: Room 10B Theme: <i>Pre-service teacher education / Teacher Education & Development</i> (90 mins) Co-Chair: Tshegofatso Tsimane	SCIENCE PAPERS Venue: Room 5B Theme: <i>AI integration in science education</i> (55 mins) Co-Chair: Elizabeth Mavhunga	TECHNOLOGY PAPERS Venue: Room 4 Theme: <i>ICT and mobile technology integration</i> (90 mins) Co-Chair: Thasmai Dhurumraj	SCIENCE PAPERS Venue: Room 2 Theme: <i>Inclusivity, gender, language, culture and IK integration</i> Co-Chair: Kenneth Ngcoza
	Tshegofatso Tsimane & Zaheera Jina-Asvat <u><i>Beyond PCK: Rethinking knowledge development in pre-service teachers through K-Step</i></u> M2026_063_SP	Siphele Gcwensa & Elizabeth Mavhunga <u><i>Exploring the nature of TSPCK and adaptive teaching in a comprehensive digital lesson ecosystem</i></u> SC2026_104_SN	Martin Braund <u><i>Saving the planet by saving environmental education – what can Arts-Based Pedagogy offer?</i></u> T2026_002_LP	Flavia Kigozi, Ida Risenga & Shalini Dukhan <u><i>The Role of Recognition by Others in the Science and Biology Identity Development of Undergraduate Students</i></u> Sc2026_025_SP
	Hlulani Mathebula <i>Promoting Strategic Competence through Multiple Calculation Strategies: A teaching experiment of Grade 4 Learners in the Republic of South Africa</i> M2026_016_LP	Tebogo Edwin Nkanyani <i>Empowering rural physical sciences teachers: innovative teaching strategies through artificial intelligence</i> Sc2026_032_SN	Thasmai Dhurumraj <u><i>Reimagining Post-Pandemic Teaching: A Freirean Analysis of Teachers' ICT Integration in South Africa</i></u> T2026_037_LP	Tasneem Ebrahim Patel, Lydia Mavuru & Lwazi Nsindiso Mkhwebane <u><i>Teachers' experiences of integrating Islamic indigenous knowledge when teaching Life sciences</i></u> Sc2026_045_SP
	Rosina Nkadi Ngoako & Joseph Jabulane Dhlamini	Sphamandla Zulu & Hlayisani Nkuna	Patrick Thorp & Sfiso Mahlaba	

	<u>Developing Strategic Intervention to Support Mathematics Student Teachers in an ODeL Environment</u> M2026_025_LP	A Systematic Review of Generative AI in Science Education: Impacts on Teaching, Learning, and Rural Access Sc2026_068_LP	<u>The influence of cell phone use on learning and academic performance: perceptions of grade 9 and 10 learners</u> T2026_017_SP	
	Matshidiso Moleko, Moeketsi Mosia, Themaba Mthethwa, Puleng Mo, Mathon, Nomath, Felix Egara <u>Exploring the use of Universal Design for Learning In Mathematics Lessons at the primary level</u> M2026_008_LP		Modjadji Cate Masete-Kgatle; Mari van Wyk; Ugorji Ogbonnaya <u>Digital Tools for Literacy: Investigating Tablet Use in Grade 3 EFAL Teaching to Support PSRIP</u> T2026_019_SP	
16H00 – 16H30 COFFEE/TEA BREAK VENUE: School of Tourism and Hospitality (STH)				
16H30 – 18H00	MATHEMATICS PAPERS Venue: Room 10B Theme: <i>Pre-service teacher education / Teacher Education & Development</i> (100 mins) Co-Chair: Nwabisa Mbeki	SCIENCE PAPERS Venue: Room 5B Theme: <i>Early and primary science education</i> (90 mins) Co-Chair: Mafor Penn	TECHNOLOGY PAPERS Venue: Room 4 Theme: <i>ICT and mobile technology integration</i> (70 mins) Co-Chair: Tionge Weddington Saka	SCIENCE PAPERS Venue: Room 2 Theme: <i>Inclusivity, gender, language, culture and IK integration</i> (60 mins) Co-Chair: Alvin Riffel

	Nwabisa Mbeki & Frikkie George <u>Exploring the Reflective Practices of Mathematics Tutors: A Classroom Video Analysis of Teaching Experiences and Pedagogical Growth</u> M2026_064_LP	Zukiswa Nhase <u>A Case study of Foundation Phase Teachers 'Contextualization of Science Concepts and Skills</u> Sc2026_080_LP	Tionge Weddington Saka <u>Productive use of technology: a case for an e-community of practice among early mathematics teachers in Malawi</u> T2026_028_SN	Alvin Riffel <u>Bridging Science and Culture: Using Toulmin's Argumentation Pattern to Integrate IKS and NOS in Environmental Education</u> Sc2026_048_SP
	Justina Longwe & Mercy Kazima <u>Exploring student teachers' strategies for performing mental calculations</u> M2026_030_SP	Ren Cheng Zhang, Ching Ting Hsin, I Chien Chen & Hsin- Kai Wu <u>Sentiment Analysis of Kindergarteners' Science Conversations in Project-Based Classrooms: Interrelationships Among Sentiments, Instructional Strategies, and Scientific Practices</u> Sc2026_005_SP	Athenkosi Nzala & Maryke Mihai <u>Online Learning Readiness and Teacher Training Needs in South African Public Secondary Schools: A Post-COVID-19 Analysis Using the ADDIE-Col Framework</u> T2026_039_LP	SD Khumalo, A Sondlo, & N Xaba <u>The Integration of Indigenous Knowledge Systems in Teaching Grade 6 Food & Nutrition in Selected Schools in Umhlathuze Circuit</u> Sc2026_076_SP
	Bruce Brown <u>Developing Explicit Awareness of Mathematical Structure in Primary Preservice Education</u> M2026_024_SP	Cintha Strydom, Mafor Penn, Umesh Ramnarain & Hsin- Kai Wu <u>Exploring scientific inquiry abilities in early childhood: Performance in Grade RR</u> Sc2026_037_LP	Sechaba Koma, Lereko Mohafa, & Makomosela Qhobela <u>Using SAMR Model to Examine how Mathematics and Science Teachers Integrate ICTs in their Teaching</u> T2026_033_SP	Nokubonga Ndlovu, Lydia Mavuru & Khanyisile Sethole <u>The relationship between socialization, gender stereotypes and learner engagement in the teaching and learning of Grade 10 Life Sciences</u>

				Sc2026_008_SP
	Ruach Slayen, Kate le Roux, Faith Katabwa, Sharon Layton, Jon Shock, Alf Cole & Rauach Slayen <i>Building a Critical Inquiry Community of Teachers and Tutors for Teaching Mathematical Practices in Undergraduate Mathematics</i> M2026_039_SN			
18H00 –18H30 FREE TIME				
18H30 – 20H30 WELCOME RECEPTION AND COCKTAILS VENUE: School of Tourism and Hospitality (STH)				

TUESDAY 20TH JANUARY 2026 (DAY 2)

08H30 – 10H00	MATHEMATICS Mathematics Content & Application (90 mins) Venue: Room 10B Co-Chair: Ogbonnaya	SCIENCE PAPERS Engaging pedagogies in science education (90 mins) Venue: Room 5B Co-Chair: Marissa Rollnick	TECHNOLOGY PAPERS AI and AI integration (80 mins) Venue: Room 4 Co-Chair: Musa Adekunle Ayanwale	SCIENCE PAPERS Theme: Teacher development in science education (90 mins) Venue: Room 2 Co-Chair: Brighton Mudadigwa
	Rina Durandt <u><i>A qualitative perspective on fostering tertiary students' modelling competency through an independence-oriented teaching style</i></u> M2026_048_SP	Belinda van der Westhuizen <u><i>Navigating Disciplinary Transitions: From STEM Research to Educational Scholarship through Autoethnography</i></u> Sc2026_033_LP	Musa Adekunle Ayanwale <u><i>Mapping AI literacy for sustainable and transformative teaching practice in Schools</i></u> T2026_020_SP	Sakyiwaa Boateng & Brighton Mudadigwa <u><i>Building resilience through teacher-led interventions: A study on physical science teachers' implementation of strategies to mitigate learner anxiety</i></u> Sc2026_073_LP
	Khayaletu Myoli & Batseba Mofolo-Mbokane <u><i>Proportionality difficulties in matric geometry: An analysis of results in two Gauteng township secondary schools</i></u> M2026_051_LP	Elizabeth Mavhunga & Marissa Rollnick <i>Retaining disciplinary integration in science education</i> Sc2026_103_SP	Warda Abrahams <u><i>Exploring pre-service engagement with AI for assessment design</i></u> T2026_026_SP	Ferhana Raban & Sam Ramaila <i>Designing a microlearning intervention in natural sciences: a qualitative inquiry using Gagné's nine events</i> Sc2026_059_SP

	Matsepe ME & Ogbonnaya <u>Reasoning-and-proof in Euclidean geometry: a comparative analysis of Grade 11 South African mathematics textbooks</u> M2026_056_LP	Ekias Zvirevo & Doras Sibanda <u>An Examination of Zimbabwean Chemistry Teachers' Stoichiometry Sequencing Practices and Their Alignment with National Guideline</u> Sc2026_055_SP	Ravendhran Rangasamy, Nadaraj Govender, Doras Sibanda & Raymond Moodley <u>Integrating AI in Scaffolding Element of STEM Project Based Learning in online paired group learning of grade 9 science club learners</u> T2026_036_SP	Ernest Mazibe & Eunice Nyamupangedengu <u>Mentoring in and out of field: a comparative case of a biology teacher educator supervising biology and mathematics pre-service teachers</u> Sc2026_096_SP
	Anele Lindile Mnguni & Sarah Bansilal <u>Investigating grade 11 teachers discourses in teaching negative angles of trigonometric functions</u> M2026_036_SP		Charity Ausiku, Theresia Siyave, Petrina Mafuro & Leena Kanandjebo <u>Teachers' views on AI driven teaching strategies at the junior primary phase</u> T2026_038_SP	Keyaleboga Nameng, Nomfundo Radebe, Emmanuel Mushayikwa & Brighton Mudadigwa <u>Investigating stoichiometry anxiety among South African out-of-field science teachers: strategies for building resilience in grade 10 chemistry teaching</u> Sc2026_094_SN
10H00 – 10H30 COFFEE/TEA BREAK VENUE: School of Tourism and Hospitality (STH)				
10H30 – 11H30	SCIENCE SYMPOSIUM Venue: Room 10B		MATHEMATICS SYMPOSIUM Venue: Room 5B	

	Chair: Kenneth Mlungisi Ngcoza Presenters: Kenneth Ngcoza; Martha Aimwata; Makgwedi Malemela; Albertina Shigwedha & Sinethemba Mdleleni <u><i>Harnessing Cultural Heritage: Towards Two-Eyed-Seeing and Cultural Revitalisation Amongst Learners from Rural Schools</i></u> Sc2026_039_SYM		Chair: Kate le Roux Presenters: Ruach Slayen, Kate le Roux, Faith Katabwa, Sharon Layton, Jon Shock, Alf Coles <u><i>Collaboration towards Innovating Mathematics Curriculum for local Relevance in a Globally Connected Socio-Ecological World</i></u> M2026_018_SYM	
11H30 – 13H00	MATHEMATICS PAPERS Venue: Room 10B Theme: Pre-service teacher education / Teacher Education & Development (90 mins) Co-Chair: Million Chauraya	SCIENCE PAPERS Venue: Room 5B Theme: Engaging Pedagogies in Science Education (90 mins) Co-Chair: Maria Tsakeni	TECHNOLOGY PAPERS Venue: Room 4 Theme: Engineering Education (70 mins) Co-Chair: Samuel D Khoza	SCIENCE PAPERS Venue: Room 2 Theme: PCK/TPACK in Science Education (60 mins) Co-Chair: Bongani Prince
	Fabiano Jamba & Million Chauraya <u><i>Developing pre-service mathematics teachers' specialised content knowledge using artificial intelligence tools: a case study in Zimbabwe</i></u> M2026_037_LP	H Climant Khoza, Tshilidzi M Ramakoma, Ngetheni Nkomo & Lungile G Zondo <u><i>The nature of interactive patterns and discourses in life sciences classrooms: a Bloom and Solo taxonomy analysis approach</i></u> Sc2026_006_SN	Mbali Pridy Mbonani & Samuel Dumazi Khoza <u><i>Teaching Engineering Graphics without Computer-Aided Drawing (CAD): A Bourdieu-Informed a Case Study of Quintile-One Educators in the Victor Khanye Circuit</i></u> T2026_022_LP	Thokozani Nkosinathi Jackson Radebe & Bongani Prince Ndlovu Science Teachers' <u><i>Articulations of Content and Curricular Connections in Natural and Physical Sciences: A Case in King Cetshwayo District</i></u> Sc2026_067_SP
	Ayando Zondo & Hlamulo Mbhiza	Maria Tsakeni & Stephen Chinedu Nwafor	Mbali P Mbonani & Samuel Dumazi Khoza	Ntatise Puputla, Mamohato Makhechane & Makomosela

	<u>Reimagining learners' engagement behaviours when responding to a grade 10 Euclidean Geometry task</u> M2026_023_LP/SP	<u>Leveraging Google Classroom-Enabled Flipped Learning To Enhance Critical Thinking Skills and Achievement In Secondary School Chemistry</u> Sc2026_044_LP	<u>Lack of Electronic Design Automation (EDA) in Learning Electrical Systems and Control in Quintile One Schools</u> T2026_027_LP/SP	<i>Qhobela</i> <i>Missed opportunities coming fore in a biology teacher's enacted TSPCK</i> Sc2026_070_SP
	Vasuthavan Gopaul Govender <u>Reflections on the transition from grade 12 to first year Mathematics - related modules</u> M2026_006_LP	Angeline Duma; Magdeline Stephen & Emmanuel Mushayikwa <i>Why Learners Still Struggle in Organic Chemistry: It's Not the Teaching; It's the Knowledge Structuring Patterns</i> Sc2026_058_LP	Brighton Mudadigwa & Tawanda Chinengundu <u>Anxiety Reduction and Resilience Building among Preservice Engineering Graphics and Design Teachers: a Mixed-Method Intervention Study</u> T2026_032_LP	Sinegugu Khulu & Elizabeth Mavhunga <u>Developing Teacher-related Science Content Knowledge (TerSCK) for Powerful Knowledge in Chemistry Education</u> Sc2026_101_SP
		Nomzamo Xaba, Marissa Rollnick & Eunice Nyamupangedengu <i>A development of a tool for assessing meaning making opportunities in biology lectures: insights from a South African university</i> Sc2026_011_LP		
13H00 – 14H00 LUNCH				

VENUE: School of Tourism and Hospitality (STH)		
14H00 – 16H00	CALTSTEAM Showing Venue: Room 10B	Poster session Venue: Foyer FADA Auditorium
16H00 – 16H30 Break		
16H30 – 17H30 AGM VENUE: STH Auditorium		
17H30	SAARMSTE Choir practice Venue: Room 10B	Book Launch – Karin Brodie <i>Mathematics Teacher Development in South Africa</i> Venue: Foyer STH Auditorium

WEDNESDAY 21st JANUARY 2026 (DAY 3)

08H30 – 10H00	MATHEMATICS PAPERS Venue: Room 10B Theme: <i>Pre-service teacher education / Teacher Education & Development</i> (90 mins) Co-Chair: Frank Murangira	SCIENCE PAPERS Venue: Room 5B Theme: <i>Engaging pedagogies in Science Education</i> (90 mins) Co-Chair: Makomosela Qhobela	TECHNOLOGY PAPERS Venue: Room 4 Theme: <i>Coding & Robotics and computational thinking</i> (75 mins) Co-Chair: Clement Simuja	SCIENCE PAPERS Venue: Room 2 Theme: <i>PCK/TPACK in Science Education</i> (70 mins) Co-Chair: Thumah Mapulanga
	Frank Murangira, Alphonse Uworwabayeho, Innocent Twagilimana & Thumah Mapulanga <i>The Effect of Practical Instruction on Learners' Attitude towards Secondary School Mathematics</i> M2026_045_LP	Vusani V Mathada, Lynne Pilcher, & Zakhele Nkosi <i>Exploring Self-Regulated Learning Strategies in Geosciences: A Study at a South African University</i> Sc2026_077_SN	Rene Northmore <u><i>Pre-Service Teachers' Experiences with an Online Coding and Robotics Course in a Private Institution</i></u> T2026_005_LP	Mamohato Makhechane, Makomosela Qhobela & Lereko Mohafa <i>Experiences of Physical Science teachers about how the curriculum was implemented</i> Sc2026_069_SN
	Frans N Haimbodi & Emilia N Haimbodi <i>Analysis of grade 10 learners' difficulties on solving algebraic problems</i> M2026_022_SP	Sechaba Koma, Umesh Ramnarain & Joseph Krajcik <i>Secondary School Students' Ability and Engagement in Science and Engineering Practice of Asking Questions</i> Sc2026_051_SP	Mariaan Avenant <u><i>A comparative study of self-paced, online learning versus traditional in- class instruction in a coding and robotics course for pre-service teacher education in a private higher education setting</i></u>	Thumah Mapulanga & Loyiso Currell Jita <u><i>A Systematic Review of Studies Using the Topic- Specific Pedagogical Content Knowledge Framework in Science Education: Trends, Gaps and Opportunities</i></u>

			T2026_008_LP	Sc2026_079_SP
	Mmakgabo Angelinah Selepe <i>Implementing play-based assessment to enhance early mathematics skills through scaffolding and the ZPD</i> M2026_001_SP	Lereko G Mohafa, Sechaba Koma & Makomosela Qhobela <i>Exploring how students describe the factors that foster or hinder the success of science clubs in selected Lesotho high schools</i> Sc2026_078_SP	Cosmas John Kathumba & Clement Simuja <i>Legitimate code theory as an object to work with in understanding computational thinking applications in the physical sciences methods course</i> T2026_009_LP	Mpumelelo Faith Zondi & Elizabeth Mavhunga Lessons <i>Learned from Implementing Digital-TSPCK</i> Sc2026_100_SP
	Stella Mutlane <i>The use of the mental starters assessment programme and professional learning in the foundation phase: A design research perspective</i> M2026_043_LP	Makomosela Qhobela <i>Discourse patterns practiced by Grade 11 students during discussion of magnetic field patterns in a physics class</i> Sc2026_084_SN		Tshilidzi M Ramakoma & Hlologelo Climant Khoza <u><i>The Pedagogical link- making of one teacher Educator in their biology higher education class</i></u> Sc2026_063_LP
	Qetelo Moloi <i>Exploring innovative enhancements to the PRIMTED mathematics assessment through AI and Rasch Modeling</i> M2026_060_LP	Olalekan T Badmus and Loyiso C. Jita <u><i>Diagnose, Intervene, Sustain: A Review of Conceptions, Pedagogies, and Equity in Electricity and Magnetism Instruction (2019–2025)</i></u>		

		Sc2026_106_SP		
10H00 – 10H30 COFFEE/TEA Break VENUE: School of Tourism and Hospitality (STH)				
10H30 – 11h30	PLENARY ADDRESS <i>Is everything possible? The potential of Artificial Intelligence for science teaching and learning</i> Prof Knut Neumann <i>Director of the Department of Physics Education at the IPN–Leibniz Institute for Science and Mathematics Education and a Professor of Physics Education at the Christian-Albrechts-University in Kiel, Germany</i> Introduced by Prof Umesh Ramnarain Venue: FADA Auditorium			
11H30 – 13H00	MATHEMATICS PAPERS Venue: Room 10B Theme: <i>Mathematical Knowledge for Teaching (MKT)</i> (100 mins) Co-Chair: Melloy Graven	SCIENCE PAPERS Venue: Room 5B Theme: <i>Engaging Pedagogies in Science Education</i> (85 mins) Co-Chair: Bongani P. Ndlovu	TECHNOLOGY PAPERS Venue: Room 4 Theme <i>Coding & Robotics and computational thinking</i> (65 mins) Co-Chair: Soené Botha	SCIENCE PAPERS Venue: Room 2 Theme: <i>Sustainability, Social Impact, and STEM education</i> (90 mins) Co-Chair: Nadaraj Govender
	Naomi Kgothego, Tarryn Lovemore & Mellony Graven	Busisiwe Ndawonde <u><i>Evolution of Teaching and</i></u>	Soené Botha; Maryke Mihai & Pieter du Toit	Francinah Futhane <i>Chemical Safety and Security</i>

	<u>Exploring grade 3 teachers' prior knowledge and experiences of mental calculation strategies using the empty number line</u> M2026_052_LP	<u>learning Strategies for Natural Sciences: A Bibliometric Approach</u> Sc2026_109_SP	<u>Activating Whole Brain® thinking in coding and robotics education: How grade 4 learners engaged the four thinking quadrants</u> T2026_014_SP	<u>Education: Laboratory Personnels' Views</u> Sc2026_040_SP
	Luisa Tembe & Sihlosokuhle Zwane <u>Comparing Mental Fluency in In-Service and Pre-Service Early Grade Teachers</u> M2026_050_LP	Tswelelo Mokonyane & Nomfundo Radebe <u>Exploring the Influence of Art on the Quality of Learner-Learner Talk During the Teaching of Mitosis in Grade 10 Life-Sciences</u> Sc2026_093_SN	Clement Simuja, Chikondi Sepula & Tomas Shivolo <u>Development of Computational Thinking through Visual Programming Language in first-year Pre-service Teachers</u> T2026_015_LP	Midret Ncube & Kakoma Luneta <u>Reimagining STEM Education For Social Impact: A Critical Review Of Interdisciplinary Approaches And Community Partnerships</u> Sc2026_042_LP
	Sikeme Raphoka, Matselsa N Lekarapa & Maboi Mphunyane <u>The Usefulness of Mathematics Examiner's Reports to inform mathematics instruction: Reports by Secondary School Mathematics teachers and learners</u> M2026_046_SP	Nandipha Nyangiwe, Nomfundo Radebe, Emmanuel Mushayikwa & Brighton Mudadigwa <u>Pre-service Science Teachers' perceptions on integration of the resilience toolkit when learning electric circuits through experiments</u> Sc2026_089_SN	Mokiti Janefeke, Asheena Singh-Pillay & Nadaraj Govender <u>Exploring Robotics Education at a Secondary School in Lesotho: Innovation, Impact and Sustainability for STEM Advancement</u> T2026_025_LP	Vincentas Lamanauskas & Daiva Malinauskienė <u>Environmental Education In Preschool Stage: Preservice Teachers' Position In The Context Of Lithuanian Initial Teacher Education</u> Sc2026_098_LP

	Maryke le Grange & Angela Stott <u>Motivation by design: a quadrant framework for teacher development in rural schools</u> M2026_038_SP	Fadeela Kirsten & Nadaraj Govender <u>Teachers using Inquiry-Based Science and Information and Communication Technology to teach The Atom in Grade 10</u> Sc2026_075_SP	Benjamin Seleke <u>Integrating Indigenous Knowledge in Senior Phase Technology: Evidence from Rural Eastern Cape with a Focus on Structures and Resource Management</u> T2026_003_LP	
	Vasuthavan Gopaul Govender <u>Exploring the influence of cultural factors on Mathematics teaching and learning</u> M2026_007_SP	Labani Kanyonga, Heike Wendt & Doris Neubauer-Hametner <u>Differences in understandings of Inquiry-Based Learning Environmental Education in Tanzania and Austria</u> Sc2026_090_SN	Lwazi N Mkhwebane & Alex Mbanze <i>Pre-Service Teachers Levels of readiness and preparedness to utilize interactive whiteboards to promote active learning</i> T2026_028_LP	
13H00 – 14H00 LUNCH Venue: School of Tourism and Hospitality (STH)				

14H00 – 15H30	MATHEMATICS SYMPOSIUM Venue: Room 10B Presenters: Mellony Graven, Hamsa Venkat, & Corin Mathews <i>Assessment of mental mathematics strategies and number sense</i> M2026_017_SYM	SCIENCE PAPERS Venue: Room 5B Theme: <i>IBL and Science Education</i> (85 mins) Co-Chair: Angela Stott	SCIENCE PAPERS Venue: Room 2 Theme: <i>Sustainability, social impact, and STEM education</i> (70 mins) Co-Chair: Eunice Nyamupangedengu
		Lusia Simon & Linus Kambeyo <i>Challenges Experienced by Grades 10–11 Teachers When Preparing and Conducting Biology Practical Work in the Ondobe Circuit, Ohangwena Region</i> Sc2026_007_SN	Portia Mabenge & Eunice Nyamupangedengu <i>Reimagining Teacher Education for Sustainability: Interdisciplinary Conversations as Catalysts for ESD Integration</i> Sc2026_057_SP
		Samantha Naidoo & Philani Nkomo <i>Exploring grade 10 science learners in developing observation and inference skills during laboratory work</i> Sc2026_014_SP	Caitlin Govender, Angela James, & Nadaraj Govender <i>Researching pre-service science teachers’ experiences of Climate Change Education: Implications for future studies</i> Sc2026_082_SN

		Brian Mhaleni, Kgadi Mathabathe & Rethabile Tekane <i>Using POGIL to teach Stoichiometry: First-Year Engineering Students' Perceptions</i> Sc2026_019_SN	Christopher Chekwa & Eunice Nyamupangedengu <i>Digging Deeper: A Self- Study on Using Permaculture to Teach Climate Change Adaptation to Grade 6 Learners</i> Sc2026_099_SP
		Lereko G Mohafa, Umesh Ramnarain & Joseph Krajcik <i>Chemistry teachers' conceptions and implementation of inquiry-based learning: Empowerment Evaluation baseline study</i> Sc2026_065_SP	Aparna Sandeep Ghorpade & Rudiger C. Laugksch <u><i>Development and validation of an inventory for Western Cape primary science teachers' conceptions of formative assessment</i></u> Sc2026_016_SP
		Angela Stott <i>Structured Project-Based Learning to Build Science Teaching Expertise in a Didactics Module</i> Sc2026_074_SP	
15H30 – 16H00 COFFEE/TEA BREAK VENUE: School of Tourism and Hospitality (STH)			

16H00 – 17H30	RIG 1 Theme: <i>Technology integration</i> Facilitator: Prof Clement Simuja (Rhodes University) Venue: Room 10B	RIG 2 Theme: <i>Teacher learning and development</i> Facilitator: Dr Ernest Mazibe (UNISA) Venue: Room 5B	RIG 3 Theme: <i>Learning and assessment</i> Facilitator: Dr Zukhiswa Nhase (UJ) Venue: Room 4
18H30 Gala Dinner VENUE: School of Tourism and Hospitality (STH)			

THURSDAY 22ND JANUARY 2026 (DAY 4)

08H30 – 10H00	SCIENCE SYMPOSIUM Chair: Clement Simuja Presenters: Clement Simuja, Kenneth Ngcoza, Tholani Tshuma, Sakyiwaa Boateng & Tulsi Morar Title: <i>Strengthening the continual existence and participation practices of the Eastern Cape SAARMSTE Chapter through technology integration</i>	MATHEMATICS PAPERS Theme: <i>Mathematical Knowledge for Teaching (MKT)</i> (80 mins) Venue: 5B Co-Chair: Judah Makonye	TECHNOLOGY PAPERS Theme: <i>Simulations, Gamification, Virtual & Augmented Reality integration</i> (90 mins) Venue: 4 Co-Chair: Maglin Moodley	SCIENCE PAPERS Theme: <i>Teacher Development in Science Education</i> (90 mins) Venue: 2 Co-Chair: Halalisani Mngomezulu
	Sc2026_041_SYM Venue: 10B	Lisnet Elizabeth Mwadzaangati & Mercy Kazima <u>Teachers' Learning in a Geometry Lesson Study: From viewing learners as a problem to viewing teaching practice as a problem</u> M2026_021_LP	Aifa Jan Bhat & Maglin Moodley <u>Educator perspectives on Game- based learning for enhancing English language proficiency in multilingual South African classrooms</u> T2026_011_SP	Halalisani Mngomezulu, Sam Ramaila & Ferhana Raban Old but Still Gold: The Role of Seasoned Physical Sciences Teachers as Mentors to Novice Teachers Sc2026_012_LP
		Aarifah Gardee & Karin Brodie <u>Accounting for complexity: A framework for teachers' mathematical identities</u>	Leonah Lindiwe Baloyi, Mari van Wyk, Linda van Ryneveld <u>Exploring Key Considerations for Developing a 3D Immersive</u>	Brighton Mudadigwa & Nomzamo Xaba Resilience as pedagogy: novice teacher voices on affective

		M2026_013_SP	<u>Learning Prototype in Online Education</u> T2026_018_LP	interventions in life sciences education Sc2026_060_LP
		Annie Mamoretsi Kgosi & Paul Judah Makonye <u>Transforming Professional Noticing Sophisticated Levels through Self- Reflection: Teaching of Inverse Functions in Grade 12 Learners</u> M2026_014_SP	Mathlatsi Precious Maleka <u>Designing for Innovation: A Conceptual Model for Gamified Learning in STEM Teacher Training</u> T2026_021_LP	Linus Kambeyo <u>Enhancing Physics Teaching through Lesson Study: A Collaborative Professional Development Model for Teaching Projectile Motion in Rural Namibian Schools.</u> Sc2026_015_SP
			Unarine Ndou & Mafor Penn <u>Grade 10 Learners' Perceptions of Augmented Reality for Active Participation and Engagement in Learning Mitosis</u> T2026_031_SP	Mariette Erwee & Angela Stott <u>Making waves in science teacher education: enhancing engagement and pedagogical competence through project-based learning</u> Sc2026_049_SP
10H00 –10H30 Break				
10H30 – 11H30	PLENARY ADDRESS Towards an ecological practice of mathematics education Prof Alf Coles Professor of Mathematics Education at the University of Bristol			

	Introduction by Prof Mellony Graven VENUE: FADA Auditorium			
11H30 – 13H00	MATHEMATIC PAPERS Theme: <i>Mathematics Teaching & Language</i> (95 mins) Venue: Room 10B Co-Chair: Tarryn Lovemore	SCIENCE PAPERS Theme: <i>ICT integration in Science Education</i> (90 mins) Venue: Room 5B Co-Chair: Luis Bras	MATHEMATIC PAPERS Theme: <i>Mathematics Teaching & Learning in Primary School</i> (65 mins) Venue: Room 4 Co-Chair: Hamsa Venkat	SCIENCE PAPERS Theme: <i>Inclusivity, gender, language, culture and IK integration</i> (90 mins) Venue: Room 2 Co-Chair: Kenneth Ngcoza
	Tarryn Lovemore & Mellony Graven <i>Exploring pre-service teachers' bilingual and multimodal communication when teaching calculation strategies on the empty number line</i> M2026_061_LP	Luis Bras & Nadaraj Govender <u><i>Teachers' Agency and Pedagogical Resilience in ICT for Inquiry Learning in STEM Education in a Low-Resource School Context</i></u> Sc2026_034_LP	Arpana Pal, Mellony Graven, & Roxanne Long <u><i>Understanding a Caregiver's Experiences of using a family Math Storytime Programme Resources at Home: A Case Study</i></u> M2026_029_LP	Thokozani Busakwe & Thamsai Dhurumraj. <u><i>Teaching for Justice: Equity-Centered Pedagogies in Science Education</i></u> Sc2026_097_LP
	Kate Sehowa & Anthony A Essien <u><i>Teacher talk in mediating examples for meaning making in multilingual mathematics classrooms: A focus on</i></u>	Anwar J Molwele, Sam Ramaila & Patrick Thabo Makhubalo <u><i>Leveraging digital technologies in life sciences teaching to enhance 21st century skills development</i></u>	Angel Mukuka & Hamsa Venkat <u><i>Insights from Primary School Teachers' Instructional Explanations in Early Grade Mathematics</i></u>	Unathi Notshweleka, Thasmai Dhurumraj & Sam Ramaila <u><i>Pedagogy and Praxis in the Science Curricula: A case study of Inclusivity in South African Classrooms</i></u>

	<u>Exponential equations</u> M2026_058_LP	Sc2026_052_LP	M2026_032_SP	Sc2026_086_LP
	Sikeme Raphoka <u>The critical role of teacher communication on learner mathematical discourse and conceptual understanding</u> M2026_035_SP	Unarine Ndou <i>Exploring Grade 10 Learners' Perceptions of Augmented Reality for Active Participation, Motivation, and Engagement in Life Sciences</i> Sc2026_072_SP	Nomzamo Jack <u>Enactment of Differentiated Instruction in Grade 3 Foundation Phase Mathematics Classrooms: Leveraging Theory of Practice Architecture Lenses</u> M2026_015_SP	Tarisai Mudzatsi <u>Physical Sciences teachers' understanding of community cultural wealth and heritage in teaching grade 10.</u> Sc2026_095_SP
	Masilo France Machaba & Rosina Nkadi Ngoako <u>Shifting mathematical discourse: a case study of critical discourse analysis of teacher talk before pedagogical intervention</u> M2026_027_LP	Itumeleng Moukangwe, Glen Legodu & Angela Stott <i>South African natural science preservice teachers' beliefs about Phet simulations: a post-covid-19 survey</i> Sc2026_085_SP		Martha N Aimwata & Kenneth M. Ngcoza <i>Cultivating Cultural Knowledge Brokerage: Mobilising Traditional Marula Oil Extraction and Preparation of Sorghum flour</i> Sc2026_024_SP

13H00 – 14H00			
LUNCH			
VENUE: School of Tourism and Hospitality (STH)			
14H00 – 15H30	MATHEMATICS PAPERS	SCIENCE PAPERS	MATHEMATICS PAPERS
	Theme: <i>Mathematics Education for Social Transformation & Sustainable Development</i> (95 mins) Venue: Room 10B Co-Chair: Thuthukile Jita	Theme: <i>ICT Integration in Science Education</i> (75 mins) Venue: Room 5B Co-Chair: Patrick Makhubalo	Theme: <i>Mathematics Teaching & Learning in Primary School</i> (60 mins) Venue: Room 4 Co-Chair: Erica Spangenberg
	Simon Adjei Tachie <u><i>From Classrooms to Communities: Leveraging Mathematics Education for Sustainable Development and Social Transformation</i></u> M2026_044_LP	Patrick Thabo Makhubalo & Jacqueline <u><i>Batchelor Introducing Coding and Robotics through Project- Based Learning in Grade 6 Natural Science and Technology</i></u> Sc2026_054_LP	Emilia N. Haimbodi & Mellony Graven <u><i>Exploring the use of a digital app for developing place value understanding with Namibian primary learners</i></u> M2026_020_SP
	Puleng Edwin Rankweteke <u><i>The Influence of Technology-enhanced Mathematics Education in Promoting Inclusive Education</i></u> M2026_040_LP	Ritha Mazibuko & Eunice Nyamupangedengu <u><i>From planning to practice: A sequential process for Integrating Smartboard Affordances in teaching Photosynthesis to grade 11 learners</i></u> Sc2026_061_LP	Thagang Kola & Erica Spangenberg <u><i>A Flipped Approach to Teaching Two-Dimensional Shapes: Enhancing Grade 7 Learners' Cognitive Engagement</i></u> M2026_041_SN

	Adebayo Akinyinka Omoniyi, Loyiso Currell Jita & Thuthukile Jita <u>Unlocking the Transformative Potential of Mathematics in STEM Education to Drive Innovation, Social Impact, and Sustainability</u> M2026_003_LP	Lucia N. Lisene & Maphole Marake <u>Interactive simulations for teaching science in Lesotho secondary schools: teachers' perspectives and practices</u> Sc2026_102_LP	Terungwa James Age & Masilo France Machaba <u>Mathematics teachers' pedagogical content knowledge in resource-constrained settings: an analysis of primary educators in Capricorn district, Limpopo Province</u> M2026_034_LP
15H30 – 16H00 Tea/Coffee Break Venue: School of Tourism and Hospitality (STH)			
16H00 – 17H15	MATHEMATICS SYMPOSIUM Chair: Anthony A Essien Presenters: Anthony A Essien, Ingrid Sapire, Lindiwe Tshuma & Shemunyenge Taleiko Hamukwaya Mathematics Teacher Education In Multilingual Contexts M2026_072_Sym Venue: 2		
17H30 – 18H30 Closing Ceremony Venue: FADA Auditorium			

POSTERS

- M2026_069_PO:** Common Errors that point to profound learner misconceptions in algebraic equations
- M2026_033_PO:** Exploring the role of the Empty Number line in developing grade 5 learners' additive reasoning at a school in the Eastern Cape
- M2026_010_PO:** The relationship between Mathematics teachers' Pedagogical Content Knowledge and classroom practice in developing 21st-century skills in a South African township high school.
- M2026_042_PO:** Exploring how junior primary pre-service teachers co-design tasks using multiple representations for developing fraction understanding
- M2026_053_PO:** Grade 4 Teachers' Experiences of Planning, Developing, and Implementing Bilingual Teaching and Learning Mathematics Resources in isiXhosa and English
- M2026_047_PO:** Exploring Grade 4 Mathematics Teachers' Experiences of Teaching with and Planning of Mother Tongue-Based Bilingual Education Resources in the Northern Cape
- M2026_026_PO:** Exploring the effect of learning multiple calculation strategies for enhancing addition and subtraction calculation proficiency
- M2026_011_PO:** Exploring how an Intervention can Enhance Foundation Phase Pre-Service Teacher Knowledge for Teaching Mental Computation Strategies
- M2026_066_PO:** The use of ICTs to teach mathematics - teacher beliefs and perceptions

Sc2026_027_PO:	Designing for impact: managing an interdisciplinary stem collaboration between universities and communities in multilingual early childhood centres
Sc2026_081_PO:	Exploring critical thinking in first-year chemistry students: A case study of the University of Zululand students
Sc2026_105_PO:	Learning experiences of grade 11 Life sciences progressed learners in Sedibeng West District
Sc2026_046_PO:	An inclusive approach to chemistry laboratory practicals in higher education
Sc2026_022_PO:	A Comparative Analysis of Robotics Integration in Chemistry Education: A Quasi-Experimental Study Across Two Schools
Sc2026_064_PO:	Exploring the effect of virtual reality on cognitive load, attitude, and spatial ability among grade 11 physical sciences learners
Sc2026_108_PO:	Exploring the role of computer simulations in promoting inclusive learning in science classrooms
Sc2026_031_PO:	Igniting Understanding: Cultural Practices and Stories in Electrostatics Lessons
Sc2026_107_PO:	Integrating gender responsive pedagogy to promote inclusivity in life sciences classrooms
Sc2026_021_PO:	A Model for the design and validation of the spiral curriculum
Sc2026_020_PO:	Students' Perceptions of Teaching, Learning Support and the Assessment in the Additional Chemistry Course

- Sc2026_088_PO:** STEP Study - Strengthening Primary School Teacher Professional Development in Tanzania: Generating Evidence for Policy and Practice
- Sc2026_101_PO:** Developing an augmented reality application to support digital game-based inquiry learning of the mitotic process in Life Sciences
- Sc2026_109_PO:** The effect of augmented reality experiences on the STEM career interests of grade 9 Natural Sciences learners at a township school
- Sc_2026_053_PO:** Exploring Grade 9 teachers' pedagogical practices when using WhatsApp in Natural Sciences Teaching and Learning