



23RD ANNUAL CONFERENCE OF THE

SOUTHERN AFRICAN ASSOCIATION FOR RESEARCH IN MATHEMATICS, SCIENCE AND TECHNOLOGY EDUCATION

SAARMSTE 2015 PROGRAMME



PEDAGOGICAL UNIVERSITY AND
EDUARDO MONDLANE UNIVERSITY



Mathematics, Science and Technology
Education for Empowerment and Equity

TUESDAY 13 – FRIDAY 16 JANUARY 2015

MAPUTO, MOZAMBIQUE

INSTITUTO DE FORMAÇÃO DAS TDM – TELECOMUNICAÇÕES DE MOÇAMBIQUE
Prolongamento da Av. Kim Il Sung 96, Sommershield, Cidade de Maputo



TUESDAY 13 JANUARY 2015

TIME	ACTIVITY								VENUE
08:00 – 10:25	REGISTRATION and TEA								Registration Hall
10:30 – 12:00 PRE-CONFERENCE WORKSHOPS									
	Dr. Corine Castela, ROUEN University, France <i>Tools for Analising the Level of Difficulty of Mathematics Exercises for High School</i>								Room 203
	Professor Meshach B. Ogunniyi, University of Western Cape, South Africa <i>Making your Theoretical Framework Breathe Through your Research Study</i>								Room 207
	Professor Boaventura Cuamba, Eduardo Mondlane University, Mozambique <i>Using Renewable Energies for Enhancing Science and Technology Education: Challenges and Opportunities.</i>								Room 208
	Professor Edward Lungu, University of Botswana, Botswana <i>Problems that can spice the teaching of mathematics.</i>								Room 210
12:00 – 12:45	LUNCH								
13:00 – 14:40	Opening Ceremony								
13:00 – 13:15	Cultural moment								Auditorium
13:15 – 13:35	Opening: Prof. Emília Nhalevilo (LOC Chairperson)								
13:35 – 14:00	Welcome: Prof. Rogério José Uthui (Rector of the Universidade Pedagógica)								
14:00 – 14:20	Welcome: Prof. Mercy Kazima (SAARMSTE President)								
14:20 – 14:30	Welcome/Introduction to the conference Programme (LOC Programme Chairperson)								
14:45 – 15:30	Plenary Professor Boaventura Cuamba, Eduardo Mondlane University, Mozambique <i>Renewable Energy: Its Potential Role to Enhance Socio-economic Development of the Country, with Particular Focus on the Educational Sector</i>								
15:30 – 16:00	TEA								Registration Hall
16:00 – 17:30	Parallel SESSIONS: Short Papers								Symposium
	Room 107	Room 109	Room 111	Room 203	Room 207	Room 208	Room 210	Room A	Auditorium
Time	Parallel 1 Chair: Bentry Nkhata	Parallel 2 Chair: Willy Mwakapenda	Parallel 3 Chair: Femi S. Otulaja	Parallel 4 Chair: Suresh Kamar Singh	Parallel 5 Chair: Loyiso C. Jita	Parallel 6 Chair: Antonio Cristo Madeira	Parallel 7 Chair: Vongai Mpofu	Parallel 8 Chair: Gil Mavanga	16:00 – 17:30 Chair:
16:00 – 16:30	<i>Comparing junior secondary school girls' and</i>	<i>What is Creative Mathematical Reasoning?</i>	<i>TEXTBOOK USE IN A FLIPPED CLASSROOM</i>	<i>Discourse on function concept</i>	<i>Enhancing teaching practices of</i>	<i>Using mixed methods to evaluate and</i>	<i>O contributo da Teoria da Carga Cognitiva na</i>	<i>Carteira para a Minimização de Riscos em</i>	<i>PCK Instruments: Are we measuring PCK?</i>

	<i>boys' performance on spatial ability questions</i> Sibusiso M. Dlamini_ & Minenhle Ngcobo	<i>How do we know if we are observing it?</i> Matthew Kellen & Marc Schafer	Margot berger	Lizeka Gcasamba	<i>science and technology in malawi primary schools</i> Vanwyk K.M. Chikasanda, Doris Mtemang'ombe & Yusuf Alide	<i>refine promising practices in Foundation Chemistry</i> Christine Mundy & Marietjie Potgieter	Educação Tecnológica Félix Singo	<i>Cobertura Médica no Hospital Central de Cabinda</i> Alcides Simbo	M Rollnick, S Malcolm, N Bam, D van der Merwe, G Zimmerman, E Mavhunga, and others
16:30 – 17:00	<i>Exploring the influence of micro-politics on teacher professional development</i> Clyde Felix	<i>Teachers' trainers' reflections on prospective teachers' non standard reasoning – some potentialities and constrains for teachers' training</i> Maria Mellone, C. Miguel Ribeiro' Arne Jakobsen	<i>How children develop mathematical ideas to mathematical concepts? Examples of didactical transposition from socio-cultural artifacts</i> Marcos Cherinda	<i>Effectiveness of a Professional Development Programme for Mathematics, Science and Technology Teachers for Content and Pedagogical Knowledge Improvement</i> Harrison Atagana, Chukunoye E. Ochonogor, David Mogari, & others	<i>The Relationship between the intended curriculum, enacted curriculum and assessed curriculum for standard 7 school Natural Science in Botha-Bothe, Lesotho</i> MD Kokonyane and L C Jita	<i>Developing pre-service teachers' pedagogical content knowledge (PCK).</i> Adam Bertram	<i>We use guided inquiry and open discovery in our lessons': Investigating the extent to which this is true in the practice of in-service science teachers in Malawi</i> Dorothy Nampota	<i>Experiências de Óptica Geométrica nas aulas de Física "Caso de uso material de fácil acesso e de baixo custo como medida de superação de falta de laboratórios de Física"</i> Joao Filipe Muchanga Inacio Chauque Tomas Anibal Massicame	
17:00 – 17:30	<i>Pre-School teachers' Pedagogical Content Knowledge of Mathematics: A Case of Selected Schools in Lusaka, Zambia.</i> Hilda Nthani Zulu Bentry Nkhata	<i>What it means to be introduced to mathematics: An exposition from an intervention study</i> Williams Ndlovu & Willy Mwakapenda	<i>Indigenous knowledge of plant healing: What classroom science material can be drawn from it?</i> Vongai Mpfou, Emmanuel Mushayikwa, & Femi S. Otulaja	<i>Using student teachers' drawings of themselves teaching science to inform teacher training</i> Suresh Kamar Singh	<i>Natural Sciences HODs and their capacity to lead instruction: an exploratory survey of four districts in the Gauteng province of South Africa</i> Cynthia B. Malinga & Loyiso C. Jita	<i>Undergraduate Students' Views on the Relationship between Science, Technology and Society - Case Study of Pedagogical University in Mozambique.</i> Antonio Cristo Pinto Madeira	<i>Teach indigenous knowledge in schools: 'We cannot teach what we do not know'</i> Vongai Mpfou' & Zvikomborero Muropa	<i>Produção de tomate em pó: Uma Tecnologia de Conservação de Tomate para Apoio as Comunidades e Proposta Metodológica para Ensino de Química no Contexto.</i> Djabrú João Manuel & Gerre Zebedias Samo Sithole	
18:00	Welcome Function: Cocktails – Conselho Municipal da Cidade de Maputo								

WEDNESDAY 14 JANUARY 2015

TIME	ACTIVITY							VENUE
08:45 – 09:50	Plenary: Dr. Corine Castela, ROUEN University, France <i>When Praxeologies Move from an Institution to Another One: The Transpositive Effects</i>							Auditorium
10:00 – 10:45 Parallel SESSIONS: Long Papers								
Auditorium	Room 107	Room 109	Room 111	Room 203	Room 207	Room 208	Room 210	Room A
Parallel 1 Chair: Minenhle Ngcobo	Parallel 2 Chair: Maria Mellone	Parallel 3 Chair: Margot Berger	Parallel 4 Chair: Asheena Sigh- Pillay	Parallel 5 Chair: Cynthia B. Malinga	Parallel 6 Chair: Vongai Mpofo	Parallel 7 Chair: E. Mushayikwa	Parallel 8 Chair: Yusuf Alide	Parallel 9 Chair: Harrison Atagana
<i>Identifying stages of numeracy proficiency to enable remediation of foundational knowledge using the Learning Framework in Number</i> Mellony Graven; Debbie Stot; Zanele Mofu; Siviwe Ndongeni	<i>An exploration of learners' learning of Mathematics by using selected (VITALmaths) video clips: A case study.</i> Thomas Haywood & Marc Schäfer	<i>A modeling and models approach: Improving primary mathematics learner performance on multiplication</i> Emmanuel Dlamini, Hamsa Venkat & Mike Askew	<i>ACE technology educators understanding of the design process and its influence on their pedagogical practice</i> Bongeka Mabaso & Busisiwe Alant	<i>Mentoring Physical science subject advisors on acid-base titration</i> Washington T. Dudu	<i>Effects of high school students' chemical concept understanding level on achievement in kreb's cycle</i> Ikhifa Grace Onyenenu & Chukunoye Enunuwe Ochonogor	<i>Teaching the design process in the grade 9 technology class</i> Frank Ohemeng Appiah and A. Singh- Pillay	<i>Emancipating secondary school teachers from their Technology knowledge and pedagogical challenges: An action research study</i> Mapotse and Gumbo	<i>An Experiment with Peer Instruction in Computer Science to Enhance Class Attendance</i> Maria Keet
10:45 – 11:15	TEA							
11:20 – 12:50 Parallel SESSIONS: Short Papers								
Auditorium	Room 107	Room 109	Room 111	Room 203	Room 207	Room 208	Room 210	Room A
Parallel 1 Chair: Bongile Putsoa	Parallel 2 Chair: Arne Jakobsen	Parallel 3 Chair: Z. Wababa	Parallel 4 Chair: Jane Cowley	Parallel 5 Chair: L C Jita	Parallel 6 Chair: Ikhifa G. Onyenenu	Parallel 7 Chair: Dorothy Nampota	Parallel 8 Chair: Z. Muropa	Parallel 9 Chair: Maria Keet
<i>Investigating the Teaching and Learning Strategies Employed by Science Teachers in High Performing Secondary Schools in Swaziland</i>	<i>Using the van Hiele phases of instruction to inform the design and implementation of a circle geometry teaching and learning programme</i> Beata L. Dongwi	<i>Developing pre-service primary mathematics teachers' knowledge for teaching</i> Sharon Mc Auliffe	<i>The errors displayed grade 08 learners in addition, subtraction, multiplication and division of proper fractions</i> Irene Mnisi and Kakoma Luneta	<i>Mapping and Stimulating Science Teacher Knowledge Growth</i> Mpunki Nakedi Marissa Rollnick	<i>Life Sciences teachers' perceived continuous professional development needs</i> Bulelwa Keke & Edith	<i>Integration of local knowledge about the production of alcohol in the teaching chemistry, in Chidenguele.</i> Geraldo Filipe Nhapulo	<i>Enhancing Students' learning of Latitude and Longitude in Nigeria Secondary Schools Using Computer Assisted Instruction (CAI)</i>	<i>What type of Technological Pedagogical Content Knowledge is appropriate for spreadsheets algebra instruction?</i> 'M'amosa Ntsohi

Dudu Mamba & Bongile Putsoa							C.A. Akintade; U.I. Ogbonnaya & L.D Mogari	
<i>Profiles of educators' views on the teaching of social justice in science</i> M Sadeck, Z Ahmed and F Lubben	<i>Teacher educators' perceptions of problem solving in mathematics</i> Mercy Kazima & Arne Jakobsen	<i>Systematic code-switching as an appropriate strategy for the identification of key science and mathematics concepts and their development in indigenous languages.</i> C. Diwu & Z. Wababa	<i>The development and implementation of a Spatial Skills Assessment Tasks (SSAT) instrument in order to assess the spatial skills of Grade 10 learners.</i> Jane Cowley & Marc Schäfer	<i>Exploring the integration of grade 9 learners' prior everyday knowledge and experiences with practical activities when teaching the topic on acids and bases in Physical Science: A case Study.</i> Linus Kambeyo	<i>An Investigation into Teaching Strategies of Numeracy in Primary Schools in Chipata District of Zambia</i> Saidi Mwanamonga Bentry Nkhata	<i>Topic Specific PCK of Subject Matter Specialists in Organic Chemistry</i> Marissa Rollnick and Bette Davidowitz	<i>The south African Environmental Observation Network Science Education Camps and Science Career Choice: A Four Year Case Study among Grade 11 Phalaborwa Learners</i> Joe Sibiya Barbara Thorne	<i>The influence of teacher professional identity on inquiry-based laboratory work (iblw) in school chemistry</i> Maria Tsakeni, Saloshna Vandeyar, Marietjie Potgieter

12:50 – 13:50

LUNCH

14:00 – 15:30 Parallel SESSIONS: Short Papers

Symposium

	Room 107	Room 109	Room 111	Room 203	Room 207	Room 208	Room 210	Room A	Auditorium
Time	Parallel 1 Chair: F Lubben	Parallel 2 Chair: Mercy Kazima	Parallel 3 Chair: C. Diwu	Parallel 4 Chair: Marc Schäfer	Parallel 5 Chair: Mpunki Nakedi	Parallel 6 Chair: Bulelwa Keke	Parallel 7 Chair: Bette Davidowitz	Parallel 8 Chair: Djabrú João	Chair:
14:00 – 14:30	Teachers' experiential learning and the development of dialogue in mathematics classrooms Lyn Webb	<i>Challenging students through mathematics: a culturally relevant problem solving</i> J.K. Molefe & L.T. Mamiala	<i>Language choices in the teaching of human reproduction at Grade 7 level</i> Doidge, Lelliott	<i>Towards a sustainable technology education: a case in a technology teacher education programme</i> Asheena Singh-Pilay	<i>Exploring a Story-Based Learning Design in a Grade 4 Science and Technology Classroom.</i> Kathija Adam and Hermione Kemp	<i>The influence of information and communication technology on science learning in secondary schools</i> Levi Muunyu & Lesego Tawana	<i>In-service teachers - use of web enabled video technology and the cell phone SWIVL technology as a model progressive reflection in practitioner research</i> Andrew Petersen	<i>Desenhos de Meios Didáticos para a área da Física Ambiental: Fogão solar rectangular</i> Jossias Vilanculo & Rogério Uthui	<i>The mechanism by which pre-service teachers build PCK in new science topics: A case across Chemistry; Physics; Natural Science and Life-Sciences topics</i> E Mavhunga B Ibrahim E Nyamupangedengu A Pillay, M Rollnick
14:30 – 15:00	<i>Educators' exposure to "at most" and "at least" during the teaching of linear programming</i> D.P. Mamiala &	<i>Mathematical concepts embedded in the traditional buildings and their connections to the high school</i>	<i>Models and strategies for additive relations in primary mathematics: Findings from a case study</i>	<i>Exploring meta-cognitive activity in a third year guided-inquiry organic chemistry laboratory</i> KC Mathabathe, M Potgieter &	<i>Communication and Alternative Communication Strategies for Hearing Impaired Learners: A Case Study of Primary</i>	<i>Chemistry Teachers' Demonstration of Pedagogical Content Knowledge: A Case Study of Two Teachers</i>	<i>Teacher's perceptions on the use of ICT in a CAL environment to enhance the conception of science concepts.</i>	<i>Experiencias de demonstração no tratamento de Trabalho e Energia na 8a Classe</i> E. Bande A. Cupane	

	A.Mji	<i>mathematics.</i> Seroto NM , Mamiala LT & Kwayisi N	Herman Tshesane & Hamsa Venkat	M Rollnick	<i>and Junior Secondary School Science</i> Boniwe Vilakati, Victoria Kelly & Sabelo	Nkhululeko Nxumalo, Victoria Kelly & Sabelo Manyatsi	Frikkie George, M Ogunniyi		
15:00 – 15:30	<i>Mathematics learning of rwandan and south african grade 6 learners</i> Jean F. Maniraho &Iben Maj	<i>Intercultural experiences of Japanese volun- teer teachers of mathematics in southern African schools</i> Y. Ono, S.Nakamuar, M. Maeda	<i>Teacher in- volvement in planning teach- ing-learning sequences in chemistry edu- cation</i> Doras Sibanda	<i>Science teachers and learning of meanings of non-technical words when presented in the science context in South African physical science classrooms</i> Emmanuel Zinda Ncube and Samuel Ouma Oyoo	<i>Interpretations of everyday words when used in the phys- ics context by South African High School Learners: the role of the phys- ics teacher?</i> M Ncube and Samuel Ouma Oyoo	<i>Exploring issues related to language in multilingual South African science classrooms: A literature review</i> Kathija Adam, Albert Africa, Tracey Woods and Sancia Johnson	<i>Content and Language Integrated Learning (CLIL) as a language support strategy in a Grade 8 Natural Science classroom</i> Kathija Adam & Rochelle Thorne	<i>Análise exploratória do nexo modernidade e fecundidade na cidade de Maputo</i> Rogers Hansine	
15:30 – 15:55		TEA							
16:00 – 17:30 Parallel SESSIONS: Long Papers									
Auditorium	Room 107	Room 109	Room 111	Room 203	Room 207	Room 208	Room 210	Room A	
Parallel 1 Chair: D.P. Mamiala	Parallel 2 Chair: Kwayisi N	Parallel 3 Chair: Hamsa Venkat	Parallel 4 Chair: M. Potgieter	Parallel 5 Chair: KC Mathabathe	Parallel 6 Chair: Kathija Adam	Parallel 7 Chair: Victoria Kelly	Parallel 8 Chair: Frikkie George	Parallel 9 Chair: A. Cupane	
<i>Adapted Mathe- matical Knowledge for Teaching Measures: Relia- ble, But Still Chal- lenging</i> Reidar Mosvold , Janne Fauskanger, & Arne Jakobsen	<i>Handbook of Research on Science Education: Volume II</i> Norman Lederman	<i>Platforms that display the na- ture of compo- nent interactions of topic specific professional knowledge: a review of learnt vs. transferred cases</i> E Mavhunga	<i>Confronting, navigating and resolving re- search tensions</i> Debbie Stott	<i>Applying a lin- guistic complexity checklist and formulae to the 2013 Grade 4 mathematics national assess- ments</i> Lucy Sibanda & Mellony Graven	<i>Examining the impact of dialogi- cal argumen- tation on grade 9 learners' beliefs about weather and indigenous knowledge</i> AD Riffel	<i>Pre-service tech- nology teachers' misconceptions about the con- cept of a lever</i> Sylvia Ramaligela, Andile. Mji and Ugorji Ogbonnaya	<i>The effect of computer simula- tions on the speed of writing tests</i> Sam James Murungi Kaheru & Jean Kriek	<i>Teachers and learners level of computer literacy to use educational technologies inte- gration in teaching and learning: a case study six pub- lic secondary schools in Atter- idgeville Township</i> Olika Moila & Moses Makgato	

<i>Teachers' Pedagogical Content Knowledge in the teaching of grade 3 mathematics concerning equivalent fractions in some rural schools of Limpopo Province</i> Kgalushi Themane & Kakoma Luneta	<i>Exploring frameworks for identifying learning dispositions: the story of saki</i> Diliza Hewana & Mellony Graven	<i>Seeking synergy: The need for research at the literacy/ numeracy interface</i> Sally-Ann Robertson	<i>The relevance of mathematics teacher identity in the context of a mathematics teacher development programme (MTEP).</i> Nyameka Kangela & Marc Schafer	<i>In-Service Mathematics Teachers' Interpretation of Students' Errors</i> Chauraya Million Mashingaidze Samuel	<i>Mathematics education in South Africa: the problems and the causes</i> Marie Joubert	<i>Arithmetical Discourse Profile in College Mathematics Classroom: An Issue worthy exploring?</i> N. Chitera & J. Adler	<i>Mathematical Literacy: Are we making any headway?</i> Mark Jacobs' Duncan Mhakure	<i>Representation of the equal relationship in the development of mathematical thinking: A case of grade one's</i> Jojo Zingiswa Mybert Monica
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17:15 – 19:00	Book launch: Exploring Mathematics and Science Teachers' Knowledge: Windows into teacher thinking Edited by Hamsa Venkat, Marissa Rollnick, John Loughran, Mike Askew	Auditorium
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THURSDAY 15 JANUARY 2015

TIME	ACTIVITY	VENUE
08:45 – 09:50	Plenary: Professor Edward Lungu, University of Botswana, Botswana <i>Mathematical research as a tool for understanding diseases (Non-mathematical approach).</i>	Auditorium

10:00 – 10:45 Parallel SESSIONS: Round Tables

	Room 107	Room 109	Room 111	Room 203	Room 207	Room 208	Room 210	Room A
Time	Parallel 1 Chair: Kakoma Luneta	Parallel 2 Chair: Mellony Graven	Parallel 3 Chair: E Mavhunga	Parallel 4 Chair: Chauraya Million	Parallel 5 Chair: AD Riffel	Parallel 6 Chair: Sylvia Ramaligela	Parallel 7 Chair: Sam James	Parallel 8 Chair: A.Cupane
10:00 – 10:45	<i>Investigating the Development of Pre-Service Secondary School Mathematics Teachers' Mathematical Knowledge for Teaching Equations</i> Florence Mamba	<i>Mathematical knowledge for teaching geometry proof: learning from teachers' practices.</i> Lisnet Mwadzaangati	<i>An Analytic Framework for Describing the Affordances of a Mathematics Text-book</i> Moneoang Leshota	<i>Establishing coherence within the specified, the implemented and the assessed curricular</i> Sophia Majara	<i>Using the storyline method to elicit teachers' perceptions of their learning to teach about chemical bonding</i> R Toerien; A Hattingh; M Rollnick	<i>Opening up the dialogic space. Using questions to facilitate deeper informal learning</i> M. Braund and A. Lelliott	<i>Examining the Impact of PCK on Learner Achievement</i> Marissa Rollnick, Elizabeth Mavhunga and Mary Grace Villanueva	<i>Percepções dos professores a respeito do ensino da matemática: um estudo com cinco professores moçambicanos</i> Geraldo Vernijo Deixa, José Piletichi

10:45 – 11:15 TEA

11:20 – 12:50 Parallel SESSIONS: Short Papers

	Room 107	Room 109	Room 111	Room 203	Room 207	Room 208	Room 210	Room A	
Time	Parallel 1 Chair: Kgalushi Themane	Parallel 2 Chair: Diliza Hewana	Parallel 3 Chair: Sally-Ann Robertson	Parallel 4 Chair: Sophia Majara	Parallel 5 Chair: R Toerien	Parallel 6 Chair: M. Braund	Parallel 7 Chair: Mary Grace Villanueva	Parallel 8 Chair: Duncan Mhakure	
11:50 – 12:20	<i>Reading practices and successful learning in secondary school mathematics and science in multilingual contexts in South Africa.</i> Liveness Phiri & Willy Mwakapenda	<i>Developing algebraic thinking: The case of South African Intermediate Phase textbooks.</i> Cornelis Vermeulen	<i>School-Based Professional Development Interventions: The Effects of a Lesson Study Approach on Mathematics Teachers in the Motheo District of the Free State Province.</i> David Letloenyane & Loyiso Jita	<i>South African physical sciences learners' difficulties with every day (non-technical) words presented in the science context: the case of a Dinaledi school</i> Govero Memory Kurwa & Samuel Ouma	<i>South African Grade 12 physical science learner difficulties with meanings of everyday words used in science: proficiency in the language of instruction just one factor</i> Nasimu Semeon & Samuel Ouma	<i>The usefulness and limitations of photographs as a tool for exploring Grade 12 learners' understanding of some physical science concepts</i> Nkomo Asaph & Willy	<i>Learners' views on a science-indigenous knowledge curriculum in South Africa: A case of science lessons using indigenous sound instruments</i> D. Angaama and C. Diwu	<i>Blurring the boundaries of assessment and students' science learning: Teachers' challenges of assessment design</i> M Matimolane M Keane E Brenner	
12:20 – 12:50	<i>Mathematical discourse in instruction (MDI): A socio-cultural framework for studying mathematics teaching</i> Jill Adler & Erlina Ronda	<i>Constitution of the enacted object of learning in object focused pd model</i> Shadrack Moalosi	<i>Misconceptions and resulting errors in the learning of grade 11 geometry</i> Yeyisani Evans Makhubele and Kakoma Luneta	<i>Teachers' subject matter knowledge and attitudes for teaching the theory of evolution in some South African schools</i> Dick Motshegoa Ndlovu & Fhatuwani Mundalamo	<i>Interpretations of everyday words when used in the physics context by South African High School Learners: the role of the physics teacher?</i> Mqabuko Ncube & Samuel Ouma Oyoo	<i>An analysis of the low intake of male learners in the field of consumer studies</i> Olivia N Mafa, L. Thapelo Mamiala & Arthur A Ngwezi	<i>Creating teaching and learning dialogical spaces for the integration of science and indigenous knowledge</i> K. R. Langenhoven S. Dinie		
12:50 – 13:50	LUNCH								
14:00 – 15:30 Parallel SESSIONS: Short Papers									
	Room 107	Room 109	Room 111	Room 203	Room 207	Room 208	Room 210	Room A	Symposium
Time	Parallel 1 Chair: Erlina Ronda	Parallel 2 Chair: Shadrack Moalosi	Parallel 3 Chair: Yeyisani E. Makhubele	Parallel 4 Chair: Dick Motshegoa	Parallel 5 Chair: Mqabuko Ncube	Parallel 6 Chair: Lebala Kolobe	Parallel 7 Chair: Thapelo Mamiala	Parallel 8 Chair: Ribas Guambe	Chair:
14:00 – 14:30	<i>What constitutes an explanation for algebraic equations?</i> Nontsikelelo Luxomo	<i>The impact of improving teachers' mathematical content knowledge on learner attainment</i> Craig Pournara & Jeremy Hodgen	<i>The Primary Teachers' Assessment Practices in Mathematics within the Context of the New Integrated Curriculum in Maseru</i>	<i>Developing pre-service science teachers' topic specific strategies for teaching chemical bonding</i> Mpunkhi Nakedi Elaosi Vhurhumuku	<i>Pedagogical Content Knowledge for Nature of Science (PCKNOS): A critical appraisal of a decade of research</i> Washington	<i>An investigation into the development of my PCK as I teach chemical energy changes at grade 11)</i> XJ Sithenjwa and M Nakedi	<i>Zimbabwean female participation in physics: The influence of Identity Formation on Perception and Participation</i> Anna Gudyanga;	<i>Proposta de realização de experiências em turmas numerosas</i> Djairose Sairosse Mujanje & Alberto Felisberto	<i>Language, literacy and science learning: A baseline study of the language demands on learners, teachers and teacher educators in multilingual</i>

			Nkoja Khechane and Dr Benedict		T.Dudu, Elaosi Vhurumuku, S. Singh & A.Chikochi		Kathija Adam & Raj Kurup		<i>contexts in South Africa.</i> K. Adam; W. Mwakapenda; A. Msimanga; Z Msimanga
14:30 – 15:00	<i>Developing mathematical discourse in a primary classroom: A case of fractions</i> Chitera, Adler, Jumbe	<i>Describing Grade 11 Learner Discourse on Graphs in terms of Ritualised and Exploratory Thinking</i> Regina Essack	<i>Does gender-ised-cultural and economic students' background influence their spatial abilities in three-dimensional descriptive geometry education?</i> Daniel Dinis da Costa	<i>Do you know how you look like? Science teachers' perspectives of their teaching approaches to chemical equilibrium</i> Lebala Kolobe and Paul Hobden	<i>Pedagogical content knowledge for nature of science: in search for a meaning for the construct</i> E. Vhurumuku, WT. Dudu and S. Singh	<i>Pre-service teachers' development of knowledge of school context</i> Makomosela Qhobela, Eunice Kolutsoe Moru & Neo Paul Liphoto	<i>Does the cost of pedagogical efforts towards learner involvement in science match the reward of learner engagement and conceptual understanding?</i> A. Msimanga	<i>Métodos de construção de celeiros em Angónia e algumas ideias matemáticas para o ensino</i> Pedro Justino Júnior	
15:00 – 15:30	<i>Analysing the Mathematics on Offer in Text-books</i> Erlina Ronda & Jill Adler	<i>What do you believe?The role of contesting beliefs in the professional development of pre-service mathematics teachers</i> Viren Ramdhany	<i>A aula de matemática como um espaço de transição e implementação de valores</i> Dulcidia Carlos Guezimane Ernesto	<i>An investigation of the performance of the girl child in physical science in a single and a co education school in high schools in swaziland.</i> Dlamini Mafihlo & Poncian Obert Tagutanazvo	<i>Research on misconceptions in electricity: Does the knowledge reach the classroom?</i> Kimera Moodley and Estelle Gaigher	<i>Modeling Students' Conceptions of Gases using CmapTools Software</i> Nadaraj Govender & Bekele Gashe Dega	<i>Comparison of the Teaching Orientations of an Experienced and a Novice First Year Molecular and Cell Biology Lecturer</i> Hester Kriel & Marietjie	<i>O Género e Aprendizagem da Geometria descritiva no Ensino Pré-Universitário em Moçambique</i> Mateus Machanguana & Daniel Dinis da Costa	
15:30 – 15:55	TEA								
16:00 – 17:30	Assembly General Meeting								
18:00 – 21:30	Conference GALA DINER								

FRIDAY 16 JANUARY 2015

TIME	ACTIVITY							VENUE
08:45 – 09:50	Plenary: Professor Meshach B. Ogunniyi, University of Western Cape, South Africa <i>Empowering Socioeconomic Development Efforts In Africa Through the Indigenization of Science, Mathematics and Technology Education</i>							Auditorium
10:00 – 11:30 Parallel SESSIONS: Short Papers								
	Room 107	Room 109	Room 111	Room 203	Room 207	Room 208	Room 210	Room A
Time	Parallel 1 Chair: Regina Essack	Parallel 2 Chair: Guðbjörg Pálsdóttir	Parallel 3 Chair: Dulcidia Carlos	Parallel 4 Chair: Mqabuko Ncube	Parallel 5 Chair: Kimera Moodley	Parallel 6 Chair: Estelle Gaigher	Parallel 7 Chair: Cristiano Pires	Parallel 8 Chair: Amália Uamusse
10:00 – 10:30	<i>Between an innovative curriculum and the Syllabus: The Mozambican Grade 8 Mathematics curriculum.</i> Balbina Mutemba	<i>REPRESENTATIONS AS CATALYSTS FOR DEVELOPING CATEGORIES OF LANGUAGE FOR MATHEMATICS TEACHING</i> Pieter van Jaarsveld	<i>Error Analysis in Mathematics: Giving Voice to the Voiceless</i> Faith Nyoni, Million Chauraya	<i>What do teachers take away from Initial Teacher Education?</i> DL Taylor, AD Lelliott	<i>Exploring Pre-service Science teachers' perceptions about Teaching practice: Insights from a case</i> Lesege Tawana	<i>Curriculum Implementation Profile: Student Competences in Study, Thinking, Investigative Skills in Zomba Schools</i> Nellie Mbano	<i>Materiais Instrucionais para Realização de Experiências no Ensino de Química: "Equilíbrio Químico"</i> Malaquias Tsambe & José de Barros	<i>Os saberes prévios dos alunos da 9ª Classe sobre o conceito de pressão nos fluidos e fenómenos a ele ligados.</i> Gil Mavanga & Xavier Assane
10:30 – 11:00	<i>Girls' participation in the learning of mathematics in secondary schools in the oshana educational region in namibia</i> J. J. lipinge, H. M. Kapenda, and C. D. Kasanda	<i>Investigating the Teaching Methods utilized by Secondary Mathematics Teachers within learner centred classrooms in Maseru Lesotho</i> MC Makara and B Khoboli	<i>Promoting pre-service teachers' learning of argumentation in Rwanda</i> Sibel Erduran, Ebru Kayaand Pinar S. Cetin	<i>Experiences of some Life Sciences teachers in Vhembe District of the Limpopo Province, South Africa, with regards to teaching biological evolution</i> 'Mamotena Mpetu, Rian de Villiers, & William Fraser	<i>Learners' knowledge and views of human origins in the Cradle of Humankind, South Africa.</i> A.D. Lelliott	<i>Epistemologies of students and laboratory demonstrators in the introductory physics laboratory: physics majors versus non-physics majors</i> F. Lubben, A, Buffler, S. Wheaton	<i>Contributos das confissões religiosas na educação para a saúde sexual e reprodutiva dos adolescentes e jovens em Moçambique - Estudo de caso a partir de exemplos específicos da cidade de Chimoio</i> Dizimalta dos Santos Fernando Miquitaio	<i>Proposta sobre Produção de Modelos Biológicos com material de baixo custo na Escola Secundária Comunitária "Armando Guebuza" em Maputo</i> Faira Amade Ibrahimo, Ana Bela Bernardo
11:00 – 11:30	<i>Understanding the entrance examinations results from</i>	<i>SOLO Taxonomy – a vehicle to promote open learner expression and a</i>	<i>Pre-Service Science Teachers' Visual Representations of Scientific Practices</i>	<i>The Challenges and Affordances of Designing and Developing Multi-</i>	<i>Student teachers using drama to teach science in grades 6 and 7</i>	<i>Teacher's views on the use of socio-scientific scenarios in science teaching</i>	<i>Aplicação de Mapa de Conceitos no Ensino de Química</i> Stelia Nahia &	<i>Avaliação de competências: Uma reflexão sobre a prática no</i>

	<i>Universidade Pedagógica Celso Albino</i>	<i>sustainable classroom environment L.T. Mamiala</i>	Ebru Kaya & Sibel Erduran	<i>media Simulations for Chemistry Education Catherine Milne</i>	Martin Braund, Trevor Moodley, Christelle Ekron & Zaiboenisha Ahmed	Z Ahmed, F Lubben and M Sadeck	Emilia	<i>ensino de Química Geraldo Gueze & Emilia Nhalevilo</i>
11:30 – 11:55		TEA						
12:00 – 12:30 Parallel SESSIONS: Snap-shots								
	Room 107	Room 109	Room 111	Room 203	Room 207	Room 208	Room 210	Room A
Time	Parallel 1 Chair: C. D. Kasanda	Parallel 2 Chair: Pieter van Jaarsveld	Parallel 3 Chair: Faith Nyoni	Parallel 4 Chair: Sibel Erduran	Parallel 5 Chair: A.D. Lelliott	Parallel 6 Chair: Nellie Mbano	Parallel 7 Chair: A, Buffler	Parallel 8 Chair: Eugénia Cossa
12:00 – 12:15	<i>Improving progress through Formative Assessment in Science and Mathematics Education – FaSMEd Ingrid Mostert & Marie Joubert</i>	<i>Exploring the littering habits of south african university students and effectiveness of litter prevention awareness programme Adejoke Christianah Olufemi, Andile Mji and Murembiwa Stanley Mukhola</i>	<i>Morningness-eveningness in Mozambican 10 grade school pupils as function of sex, age, and residence and its relationship with school achievements Adriano Nafital, Christoph Randler & Cristiano Pires</i>	<i>How can we see the stereotyped lesson conduct observed in schools in a rural area of Zambia?-Possibility of the approach of the approach from “Comparative institutional analysis (CIA)” KC, YO, HO and HA, and Chikamori, Ono, Ozawa and Akai</i>	<i>Preservice Science Teachers’ Decision-making Processes in Interactive Classroom Contexts Thomas D.T. Sedumedi</i>	<i>How teachers handle learners’ questions and responses during lessons on genetics: A case study of two secondary school biology classrooms in Malawi Margaret M. Mdolo & Fhatuwani Mundalamo</i>	<i>South African physical sciences learners’ difficulties with every day (non-technical) words presented in the science context: the case of a Dinaledi school Govero Memory Kurwa & Samuel Ouma Oyoo</i>	<i>Avaliação das medidas adotadas em Moçambique para minimizar o número de acidentes de viação – Estudo de caso da cidade da Beira. Natércio Paulo Mucavele</i>
12:15 – 12:30	<i>How Can the Singapore Mathematics Curriculum be Effectively Implemented in the Foundation Phase in South African Schools Charmon Naroth Kakoma Luneta</i>	<i>Learning outcomes in specialised courses in mathematics teacher education Guðbjörg Pálsdóttir & Guðný Helga Gunnarsdóttir</i>	<i>Teachers’ biodiversity knowledge and instructional practices in peri-urban classrooms. Cecilia Mukundu</i>	<i>Self-regulated learning in the online environment of a large first year biology class. Angelique Kritzinger, Marietjie Potgieter & J-Claude Lemmens</i>	<i>Difficulties in language and verbal reasoning experienced by BSc-Extended students Naledi Jele & Helen Drummond</i>	<i>Evaluation of factors influencing learners’ level of utilization of physics concept to real life situation in Limpopo province F. Afolabi & Willy Mwakapenda</i>	<i>The Physical Sciences teachers’ perception of professional support provided within Lejweleputswa District MB Maope and B Khoboli</i>	<i>Teachers’ Views and Perspective for Using Content Representation (CoRe) Matrix for Pedagogical Practice of Difficult Topics in Life Sciences: Genetics Livhuwani Ramabulana; Thomas Sedumedi; Fhatuwani Mundalamo</i>
12:30 – 13:30		LUNCH						

13:30 – 14:15 Parallel SESSIONS								
Long Papers			Round Tables					
Auditorium	Room 107	Room 109	Room 111	Room 203	Room 207	Room 208	Room 210	Room A
Parallel 1 Chair: Charmon Naroth	Parallel 2 Chair:	Parallel 3 Chair: Cecilia Mukundu	Parallel 4 Chair: J-Claude Lemmens	Parallel 5 Chair: Angelique Kritzinger	Parallel 6 Chair: Thomas D.T. Sedumedi	Parallel 7 Chair: F. Mundalamo	Parallel 8 Chair:	Parallel 9 Chair: Felix Singo
<i>Mathematical Knowledge for Teaching in Africa – A Review of Empirical Research</i> A: Jakobsen, R. Mosvold	<i>ML teachers' non-recognition of realistic constraints in solving a problem set within a real life context</i> Cathrine Kazungu, Sarah Bansilal	<i>Grade 11 mathematics learners approaches to working with vertical and horizontal shifts of parabolas</i> Happy Kunene, Sarah Bansilal	<i>The place of culturally-aligning science teaching (CAST) as a framework for integrating Indigenous knowledge into classroom science.</i> Dominic Mashoko, Emmanuel Mushayikwa & Moyra	<i>Characteristics of prior knowledge and its impact on understanding 'O' level algebraic concepts</i> Maturure Evelyn	<i>Centers of power in mathematics assessment: analysis from mathematics and mathematical literacy learners' responses</i> Sibanda, J. & Mwakapenda, W.	<i>Assessing the Development of Pre-Service Primary School Teachers' Mathematical Knowledge for Teaching (MKT)</i> Dun Nkhoma Kasoka		<i>O impacto da informatização dos processos de ensino, aprendizagem e gestão</i> Célio Sengo
14:15 – 14:45 Parallel SESSIONS: Snap Shots								
Time	Room 107	Room 109	Room 111	Room 203	Room 207	Room 208	Room 210	Room A
	Parallel 1 Chair: Emilia Nhalevilo	Parallel 2 Chair: Daniel Dinis	Parallel 3 Chair: Happy Kunene	Parallel 4 Chair: Dominic Mashoko	Parallel 5 Chair: Gerre Zebedias Sithole	Parallel 6 Chair: Dun Nkhoma Kasoka	Parallel 7 Chair: F. Afolabi	Parallel 8 Chair:
14:15 - 14:30	<i>Impacto dos Saberes Locais nos Conhecimentos e Práticas relativas à prevenção e combate ao HIV e SIDA em adolescentes e jovens das Escolas Moçambicanas.</i> Alberto Boane, Fernando Come & Geraldo F. Nhapulo	<i>Ideias dos professores de Física do Ensino Secundário Geral sobre o papel da experiência no processo de ensino e aprendizagem.</i> Emídio Muzila Gil Mavanga & Valery Kuleshov	<i>Factors that contribute to low interest of female learners in technical education</i> N.M. Skosana, L.T. Mamiala & AA Ngwezi	<i>Language in South African Science Classrooms: Difficulties with meanings of non-technical words presented in the science context: at a High School in Soweto, Johannesburg</i> Victor Mbiza and Samuel Ouma Oyoo	<i>Uma reflexão sobre o des(uso) do livro escolar como recurso para formação e desenvolvimento de competências para a vida, através da leitura nas aulas de Física. Qual é a situação nas nossas escolas?</i> Gil Mavanga	<i>Attitudes, behaviour and practices on the use of technology in Mathematics teaching and learning</i> Mathomo Moila	<i>Environmental and Sustainability Education for In-service teachers - a blended eLearning approach</i> Andrew Petersen & Nomvuyo Mgoqi	<i>Students' Self-Efficacy in Technology as an Inclusive Subject to their University Degree: A Case of Education Students in a Johannesburg University</i> Samuel Khoza Vasidevan Naiker

14:30 - 14:45	<i>O Cartola e o Método Sociolinguístico: Objectos de Aprendizagem Virtuais Dialógicos e Interactivos na Aula de Língua</i> Rodolfo Cipriano João Salgado; Alves Evandro & Félix Singo	<i>Artefactos culturais emákhwas e o impacto do seu uso no ensino da matemática: Um estudo de caso do ensino secundário geral na Província de Nampula.</i> Abudo Atumane Ossofo	<i>Assessing the Enactment of Engineering Science Curriculum Objectives Content</i> Babele Moletsane	<i>An assessment of Design and Technology student teachers' professional adequacy: The case of the University of Botswana and University of Malawi – The Polytechnic</i> Victor Thabang Ruele, Richard Moalosi, & Vanwyk Khobidi Mbubzi Chikasanda	<i>A Prática de resolução de problemas de Física na sala de aulas. Qual é o ponto de situação na escola moçambicana?</i> Gil Mavanga & Henrique Uamusse	<i>Environmental and Sustainability Education for In-service teachers - a blended eLearning approach</i> Andrew Petersen & Nomvuyo Mgoqi	<i>Research Trends in Technology Education</i> John Williams	
15:00 – 15:30								
Closing ceremony								
15:00 – 15:05	Cultural moment						Auditorium	
15:05 – 15:10	Prof. Emília Nhalevilo (LOC Chairperson)							
15:10 – 15:20	Prof. Mercy Kazima (SAARMSTE President)							
15:20 – 15:30	Prof. Orlando Quilambo (Rector of the Eduardo Mondlane University)							