

From the President's Desk...



We have come to the end of another year and we need to reflect and take stock of what has transpired over the year. We, as AMESA members, should answer the following questions:

- What difference(s) have we made to our learners/students in Mathematics?
- What difference(s) have we made to teachers who look up to us for guidance and support?
- What lessons have we learnt from 2015 and how will we take these forward to 2016?

I firmly believe that we should give of our best at all times. Our learners/students/ teachers look to us for support, guidance and leadership and we must rise to the occasion.

Let me take the opportunity of wishing our members all the best for the festive season and a prosperous and mathematically enriching 2016!

Editor's Comment...



In this issue of AMESA News we focus on our Congress held in Polokwane in June/July with an extensive report by Kwena Masha. Edward Silver, our International Plenary speaker reflects on his visit to South Africa. Some of the reports presented at our 21st AGM held on Tuesday 30 June 2015 are included. We also feature the Western Cape mini-conferences, Eastern Cape regional conference and workshops conducted by our sponsors SHARP and CASIO. Michael de Villiers writes an interesting piece on the order of operations and there is some history of mathematics (BOOLE2SCHOOL)

Enjoy reading! If you wish to contribute an

article or share AMESA activities in your area, write to me at vicepresident@amesa.org.za.

Contents

From the President's desk	1
Editor's comment	1
Changes in the National Council (2014-2016)	2
Mathematics awards for South Africa's top learners and schools	3
AMESA Western Cape mini conference report	5
AMESA Eastern Cape Regional conference	7
My reflections on South Africa by Ed Silver	8
Order of operations: The myth and the math by Michael de Villiers	9
Letter to the AMESA News editor	12
Some history of Mathematics : BOOLE2SCHOOL	13
AMESA Curriculum Committee	14
AMESA Phase committee reports	16
SHARP activities	25
CASIO activities	26
AMESA Congress 2016	27
Report on the AMESA 2015 Congress	27
AMESA National Council Report	38
President's address at 21st AGM of AMESA	41
Minutes of the 21st AGM of AMESA	42
AMESA audited statement (2014)	45
AMESA Budget for 2015 & 2016	46
Obituary	47
AMESA National Council	47

CHANGES IN THE NATIONAL COUNCIL (2014-2016)

The National Council of AMESA has undergone some changes in the past 6 months. In this edition of AMESA News we feature three representatives; from Kwa-Zulu Natal, Limpopo and Free State.



Prof Alfred Mvuyelwa Msomi is the new regional representative for KwaZulu-Natal region. Alfred holds a PhD in Mathematics (UKZN), MSc Mathematics (Natal), BSc (Honours) Mathematics (UNIZULU), BSc (Education) (UNITRA). He is currently working at Mangosuthu University of Technology (MUT) as the Head of Department of Mathematical Sciences. His research interests are solutions of Differential equations using Lie symmetries and e-learning. He has published in a number of publications to his credit and has published in journals such as the Journal of Physics and the Journal of General Relativity and Gravitation. He has presented papers in a number of conferences. In 2014 he received the Excellence Gold Award from the Vice Chancellor of Teaching and Learning at MUT for the best lecturer in the Faculty of Natural Sciences. Alfred is currently the Chairperson of AMESA in KZN.



Manare Setati is the new representative for Limpopo region. Manare started teaching in primary and secondary schools from 1991 and ended up teaching at the university level. He has taught at post-matric level for 18 years. In addition, Manare has been exposed to a number of challenges which have shaped his teaching of Mathematics and Mathematics Education. These challenges have guided him in developing different teaching strategies for his students.

With these strategies, he has influenced, motivated and inspired students to learn mathematics, in and out of the classroom. Further, he uses the Bloom's Taxonomy approach in his teaching. Currently, Manare is a Mathematics Education Consultant at Ukuqonda Institute, involved in teacher development and materials development and has been doing this work with two other NGOs since 1997. He joined the mathematics education community in the days of NOTMO (Northern Transvaal Mathematics Organisation) and has been a member of AMESA for 22 years.



Dr Annari Milne is the new chairperson of AMESA and regional representative for AMESA Free State. She is currently a Senior Education Specialist (SES) for Mathematics FET in the Xhariep District

Other changes: Mr Eddy Thavhanyedza is the current North West AMESA Chairperson and the regional representative to the National Council. Mr Freddy Tlhavani is the new regional representative of AMESA Gauteng.



MATHEMATICS AWARDS FOR SOUTH AFRICA'S TOP LEARNERS AND SCHOOLS

Bronson Rudner and Aaron Naidu received awards as top performers of the 2015 South African Mathematics Olympiad (SAMO) organized by the South African Mathematics Foundation (SAMF). Their annual awards function took place on the 19th September 2015 at the Square Boutique Hotel in Durban.

Liberty and the South African Institute of Chartered Accountants (SAICA), the sponsors of the SAMO presented the SAMO achievers' awards. The gold medallist in the senior division Bronson Rudner is a grade 11 learner at South African College High School in the Western Cape. He has been a medallist since 2013 and also represented South Africa at the International Mathematical Olympiad since 2013. Aaron Naidu came out tops in the junior division with the gold Dawie Du Toit medal. Aaron is a grade 9 learner at St Henry's Marist Brothers College in Kwazulu Natal.

The South African Mathematics Olympiad (SAMO) is celebrating its 50th anniversary. A special address was made by Mr Allan Graham a medallist of the 1966 Olympiad. Mr Graham, a mathematics teacher and school principal, paid tribute to the contribution the SAMO made to further the cause of mathematics for all in South Africa and the role it played to foster a love for mathematics. "For me, winning a medal in the first Maths Olympiad opened the doors to a fulfilled life. It is a lucky man or woman who can say, 'love doing what I do, and I want to keep doing it for as long as I am capable!."

The main aim of the SAMO is to identify talent. Maths skills and knowledge are then further developed through SAMF training programmes such as the Siyanqoba Regional Olympiad Training Programme sponsored by the Department of Science and Technology. Twelve learners who attended Siyanqoba classes participated in the Final Round of the SAMO this year.

Professor John Webb from the University of Cape Town received the first honorary award for his involvement in Olympiad programmes for well over 40 years.

Another flagship project of the SAMF is the South African Mathematics Challenge (SAMC) for grades 4-7 learners. The award to the top performing school was awarded to Sweet Valley Primary School in Cape Town by SASOL, sponsor of the SAMC. 221 learners from the school wrote the final round of the Challenge and 131 learners passed.



Dr Dirk Basson; Aaron Naidu (SAMO junior winner and Thomas Hagsphil





Allan Graham, Bronson Rudner (SAMO senior winner) and Joe Mwase-Divisional Director of Corporate Affairs at Liberty).

Learners who perform well in the above mentioned programmes are selected for the South African teams for the International Mathematical Olympiad (IMO), the Pan African Mathematics Olympiad (PAMO) and the South African Mathematics Team Competition (SAMTC). The two winning captains of the SAMTC received their prizes from the Actuarial Society of South African and Casio.

Professor Johann Engelbrecht, Executive Director of the South African Mathematics Foundation emphasised the role of Olympiad programmes to improve analytical and logical thinking skills. "The 50th anniversary publication presented tonight is a clear indication that the SAMO has played an important role to create a passion for mathematics, and the Olympiads also opened the door to a diverse field of career opportunities to participants. We hope that this competition will continue to produce many more problem-solvers over the next 50 years. Only a few will become medallists or will represent South Africa at international competitions, but thousands of others will benefit from the experience of participating in the South African Mathematics Olympiad." Issued by the South African Mathematics Foundation.

Issued by the South African Mathematics Foundation

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AMESA WESTERN CAPE MINI-CONFERENCE REPORT

By Gary Powell (AMESA Western Cape Mini-conference Coordinator)

During August and September 2015, AMESA Western Cape ran three mathematics mini-conferences in three rural districts in the Western Cape. This brings the total number of such mini-conferences up to six over the past three years. This initiative started off during 2013 with a mini-conference in George, which focused on senior phase mathematics teachers. During 2014, the focus on senior phase teachers continued in the Eden/Central Karoo, with an attendance of 110 teachers. During the same year, AMESA Western Cape took the mini-conference idea to the West Coast District, but with a focus on primary school teachers. This event was supported by an unprecedented number of 200 teachers.

These mini-conferences are set up in collaboration with the local education district offices, and are intended to bring regional conference presentations, as well as national congress presentations to teachers in rural areas. The strategy is quite simple. Fundamentally, good relationships form the foundation of these events, in that the organisation of each event relies on collaboration with WCED district officials.

Each mini-conference takes place on a singular day - a Saturday in the case of these events. The education district offices invite the teachers, arrange the venue, and fund the catering on the day. AMESA Western Cape sets up the initial programme for the day, and provides the presenters, who are usually people who have presented at the AMESA Regional Conference, or at the AMESA National Congress. The AMESA region pays for the transport and accommodation (if required) of the presenters, and also provides a modest stipend if the presenters are overnighing. Subject advisors and/or lead teachers from the district also present workshops. It is clear to see that the bulk of the work is done by the district officials. They must be acknowledged for their efforts.

It is really exciting to be able to work in collaboration with the district officials, as this seems to allow for a "dovetailing" of development and support for mathematics teachers between the AMESA initiatives and the day-to-day work of the education department.

At the same time, these mini-conferences have raised the profile of AMESA among both teachers as well as district officials. Certainly the main outcome of these events is to initiate, and eventually support, AMESA Western Cape branches in these rural centres. These events have so far resulted in the establishment of an interim branch committee in George. The Cape Winelands Education District office has since undertaken to assist with the establishment an AMESA branch in Worcester.

The 2015 Western Cape mini-conferences attracted more than 700 teachers altogether across the three rural districts involved.

These were:

- Eden/Central Karoo - 302 FP and IP teachers
- West Coast - 35 SP teachers
- Cape Winelands - 376 FP and IP teachers

The following table shows the attendance at the AMESA Western Cape mini-conferences over the past three years.

District	2013	2014	2015	Total
Eden/Central Karoo	130	110	302	542
West Coast	-	200	35	235
Cape Winelands	-	-	376	376
Total	130	310	713	1153



In 2015, SHARP and CASIO made presentations at the mini-conferences.
They also sponsored prizes.



Delegates at the George conference on 29 August 2015

Our comment: We would like to congratulate AMESA Western Cape on this great initiative of taking AMESA to areas outside the Cape Town metropolitan region. Well done, AMESA Western Cape!



AMESA EASTERN CAPE REGIONAL CONFERENCE AND AGM REPORT

By Mzwakhe Sokutu (AMESA Eastern Cape chairperson)

AMESA Eastern Cape had its regional conference on Saturday 5 September 2015 at Rhodes University (Faculty of Education building) in Grahamstown, Eastern Cape. The keynote speaker was Pam Vale from Rhodes University. Her talk was entitled “*Encouraging the development of positive learner dispositions to mathematics through peer collaborative tasks and dynamic approaches to assessment*” and covered Mathematics across the phases. This went well with delegates as both primary school and high school teachers were in attendance. Taj Moore from SHARP did a workshop on the use of calculators in teaching and presented each conference delegate with a SHARP calculator.

Due to the post office strike, not all Eastern Cape members received notice of the conference and AGM. Nevertheless, 40 delegates attended the conference and were treated to some inspiring and informative presentations.



Delegates at the AMESA Regional Conference in Grahamstown

The regional AGM also took place during this conference and the following members make up the new executive of AMESA Eastern Cape:

Position	Name
Chairperson	Mzwakhe Sokutu
Vice Chairperson	Wandile Hlalaleni
Secretary	Sue Richards
Treasurer	Zanele Mofu

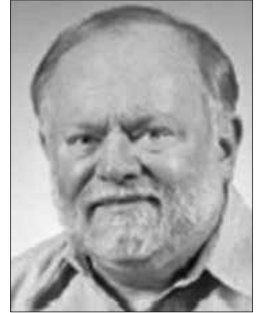
The incoming chairperson paid tribute to the outgoing treasurer Lise Westaway for her sterling work as a member of the AMESA Eastern Cape executive for the past six years.

Our comment: We would like to thank AMESA Eastern Cape for its hard work in the Eastern Cape Region, despite various challenges.



MY REFLECTIONS ON SOUTH AFRICA

Ed Silver (Plenary speaker at the National Congress 2015 in Limpopo) reflects on his visit to South Africa for the SAARMSTE Research school and the AMESA Congress



Writing this brief note triggered a cascade of South African sights, sounds, and memories!

Wonderful people! Joyous Singing! Spirited Dancing!

Intellectual Engagement! Professional Commitment!

Amazing Sightseeing! Beautiful Parks! Abundant Animals!

Lions, cheetahs, elephants, rhinos, zebras, giraffes, and kudu!

Springbok, hippos, wildebeest, gemsbok, ostrich, gazelles, and wild dogs!

My wife and I thoroughly enjoyed our time in South Africa. We met so many wonderful people and saw so many amazing sights. Our journey began at the Heia Safari Ranch, where the 13th Annual SAARMSTE Research School was held. This beautiful setting, with a resident population of zebras, giraffe, springbok, and other wildlife, was a splendid introduction to South Africa. The superb faculty, eager students, pleasant venue, along with the singing, dancing and camaraderie in the evenings, made this a wonderful week to remember!

After a weekend visit to Pilanesberg, where we saw an amazing array of animals, we arrived in Polokwane, where I had the honor of providing the keynote address at AMESA 2015— the 21st Annual National Congress. In music the keynote is the first note of a musical scale, the note upon which a musical key is based. Deriving from its meaning in music, the word keynote is now used to characterize the opening lecture at a professional meeting. In July 2015 it was my great privilege to sound the keynote at the National Congress, which marked an important milestone in AMESA's journey over more than two decades.

The theme of the congress on this momentous occasion was "deepening the quality of mathematics teaching and learning," and I spoke on the theme of "mathematics for all." As I mentioned in my lecture, I chose this focus because I can think of no more urgent and important issue facing the international community of mathematics educators than the need to provide all students with opportunities to learn high quality mathematics. As the work of the Congress progressed during the week, I was impressed with the quality of the presentations, the desire and commitment of the participants, and the spirit of collegiality and professionalism that permeated the entire event. The singing, dancing, camaraderie, and great food in the evenings made the experience even more enjoyable and truly memorable!

In closing I want to express my gratitude to the AMESA leadership and to the national program committee for the invitation to participate. I also want to thank the local organisers of the AMESA and SAARMSTE events for their facilitation of my and my wife's travel. I look forward to continued interaction with colleagues from South Africa in the months and years ahead. And I am certain that my wife and I will return to South Africa to visit our many new friends and to seek the elusive Cape Buffalo!



ORDER OF OPERATIONS: THE MYTH AND THE MATH



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In a recent paper Bay-Williams & Martinie (2015) claimed that the order of operations is not an arbitrary convention, and that it is a myth that the mathematical community arbitrarily decided on the order of operations. They then go on to try and substantiate their argument as follows: "Let's look at an example that will help use see *why* multiplication precedes addition: $4 + 3 \times 5$

Because multiplication is repeated addition, we can rewrite this expression with an equivalent expression: $4 + 5 + 5 + 5 \dots$ "

Though I've seen similar presentations in many South African textbooks and materials in the primary school, this is mathematically not correct at all! The authors are clearly unaware that they are already *assuming* here that the number sentence $4 + 3 \times 5$ follows PEMDAS/PEDMAS¹; and that the 3×5 in the number sentence *must be done first*, and hence implies $5 + 5 + 5$. This is a totally CIRCULAR line of argument! One might as well say that $4 + 3 \times 5$ MEANS that one has to calculate from left to right, first doing the addition and then the multiplication. In conventional notation, in other words, that it means $(4 + 3) \times 5$, which means that the number sentence represents adding up $(4 + 3)$ five times, i.e. $(4 + 3) + (4 + 3) + (4 + 3) + (4 + 3) + (4 + 3)$. The authors Bay-Williams & Martinie (2015) don't seem to realize that they are essentially just saying 'it is so' because 'it is so'!

I think we are so used to the convention about what $3 + 4 \times 7$ means that often people think it just HAS to be like that. It's kind of ingrained into us, and most people think it just has to be so, and don't question it at all.

The authors' use on p. 23 of the following example to supposedly demonstrate to students why multiplication should precede addition is unfortunately also a *subterfuge*:

"She wrote $8 + 3 \times 5 + 7$ on the board and said, "The Haktaks have one stack of eight coins, three stacks of five coins, and one stack of seven coins. Tell me how many coins the Haktaks have."

Again PEMDAS/PEDMAS is already assumed here for the number sentence, and Ms. G just conveniently **chose** or **selected** a real world context that fit her *preconceived interpretation* of the meaning of the number sentence. Again the illustration is entirely circular, and does NOT in the least explain why multiplication is done before addition. In fact, it is a subterfuge and entirely fake, misleading students completely from the real reason why there has to be a defined order of operations, namely, that of avoiding *ambiguity* (in number sentences, as well as in symbolic algebra).

For example, try out the following three examples with your students² as an experiment:

"Write $8 + 3 \times 5 + 7$ on the board and say, "The Haktaks have five stacks of eight plus three coins in each stack, and one stack of seven coins. Tell me how many coins the Haktaks have."

"Write $8 + 3 \times 5 + 7$ on the board and say, "The Haktaks have five plus seven stacks of eight plus three coins in each stack³. Tell me how many coins the Haktaks have."

"Write $8 + 3 \times 5 + 7$ on the board and say, "The Haktaks have a stack with eight coins and three stacks of five plus seven coins in each stack. Tell me how many coins the Haktaks have."

¹ Called BODMAS in South Africa and UK (where BIDMAS is also sometimes used).

² Assuming here, of course, students who have NOT yet learnt or been taught the standard order of operations.

³ This is of course, a very clumsy way of really saying twelve stacks of eleven coins in each.



ORDER OF OPERATIONS: THE MYTH AND THE MATH

(Continued from page 9)

In the first example, children are likely to *understand* the context and will calculate a solution as 5 times 11 plus 7 to obtain 62, while in the second example, they will get 12 times 11 to obtain 132. In the third example, they will get 12 times 3 and adding 8, will obtain an answer of 44. In other words, it is the **context** that *determines* the calculation procedure, and NOT the representation of the calculation procedure that determines the order of operations.

If instead the children had initially been asked to represent the calculation procedure used in each context, rather than having the number sentence $8 + 3 \times 5 + 7$ **imposed** on them *a priori*, they might represent each case in several different ways. From personal experience of the implementation of the problem-centered approach of the University of Stellenbosch in the 1980's in the elementary school, where students were allowed to develop their own algorithms to solve 'real world' problems as well as use their own written representations, it is also hardly likely that young children themselves would choose to model or represent their calculations by the same number sentence that the teacher chose to artificially impose upon them. The following is an example of what they themselves might write to represent the order of operations in each case⁴:

$$3 \times 5 \rightarrow 15 + 8 \rightarrow 23 + 7 \rightarrow 30$$

$$8 + 3 \rightarrow 11 \times 5 \rightarrow 55 + 7 \rightarrow 62$$

$$5 + 7 \rightarrow 12 \quad 8 + 3 \rightarrow 11 \quad 12 \times 11 \rightarrow 132$$

$$5 + 7 \rightarrow 12 \times 3 \rightarrow 36 + 8 \rightarrow 44$$

Let us now discuss the real reason behind the need to have a well-defined order of operations. Let us take the first example of the authors, namely: $4 + 3 \times 5$.

What does this MEAN? In the *absence* of any predetermined rule or definition this number sentence can be interpreted in two completely different ways, namely:

$$1) 4 + 3 \rightarrow 7 \times 5 \rightarrow 35$$

$$2) 3 \times 5 \rightarrow 15 + 4 \rightarrow 19$$

In fact, as is probably known to most readers, there are some calculators that calculate from left to right exactly in the order in which the operations have been written down in (1), and are called *sequential logic* calculators. However, with an *algebraic logic*⁵ calculator, the given answer would be 19, as such a calculator follows the assumed convention of order of operations, and will do the multiplication before the addition⁶.

It might be an interesting exercise to readers, as I've done on occasion, to ask people on the street or a non-mathematician in the staffroom, what the answer is to $4 + 3 \times 5$, and one is likely to find a large proportion of people who will naturally use sequential logic.

The problem is that the number sentence $4 + 3 \times 5$ is *ambiguous*, and in mathematics we try to avoid confusing situations like this where one can interpret something in two entirely different ways to obtain different 'answers'. This is not allowed in mathematics, and to avoid such ambiguity, we need to define a unique, unambiguous way that avoids this confusion. This can be achieved by defining a specific order of operations such as PEMDAS/PEDMAS that will inform us how to interpret such a number sentence. One must also realize here that our whole algebra of the real

⁴ In this approach, it was suggested to children to use flow diagram 'arrows' to illustrate their calculation, and not the 'equal' sign – see for example, Murray, Olivier & Human (1998).

⁵ Calculators that are called 'scientific' usually use algebraic logic.

⁶ Some calculators use Reverse Polish Notation (RPN) like the HP calculators where the operators come after the operands, for example to determine $4 + 3$, one would key in the following sequence: 4; 3; +, and starting 'inside' brackets and working out, one does not need to key in any brackets, or use the = sign.



ORDER OF OPERATIONS: THE MYTH AND THE MATH

(Continued from page 10)

number system is based on the same *assumed notation* (convention) that the algebraic expression $a + b \times c$ follows PEMDAS/PEDMAS, and that multiplication has priority over addition⁷.

I realize it is often very difficult for teachers to stand back and appreciate this fundamental point since the order of operations has become so much part of them, they take it is a 'given' rather than as a mere convention. To better perhaps better understand and appreciate that it is a convention is to step outside of school arithmetic and high school algebra. For example, consider any two binary operators, say # and *, defined in some way over a closed set of numbers, critically think about what the following means?

$$a \# b * c$$

Does it mean, first carry out the binary operation #, and then the *? Or does it mean, do it the other way round? Clearly there is ambiguity here until we agree on what this notation MEANS! I find that doing something like this often helps teachers to realize that we need to AGREE on what a # $b * c$ means; otherwise we'll have chaos⁸!

One could also use set theoretic, logical or Boolean algebra operators to explain it as I've often done with teachers who struggle with this. For a set theoretic example:

what does $A \cup B \cap C$ mean?

Suppose set $A = \{1\}$, set $B = \{3; 4\}$ and set $C = \{4\}$. If we use SEQUENTIAL logic, processing from left to right then we get $A \cup B = \{1; 3; 4\}$ and its intersection with C then gives $\{4\}$. However, if we first do the intersection of B with C we get $\{4\}$ when joined (\cup) with A gives $\{1; 4\}$. So again we get an AMBIGUITY!!! So it is necessary to decide how to deal with something ambiguous like $A \cup B \cap C$ in a CONSISTENT way. If we choose that we will interpret such a sequence in a sequential way then we obviously need to DIFFERENTIATE the other case by using a suitable notation; e.g. say curly brackets as in $A \cup \{B \cap C\}$, which will then mean that the brackets $\{\}$ have 'priority' over \cup , and that we then first do the intersection before we do the union. So it's all about avoiding ambiguity, and of trying to achieve precise, accurate communication!

It may interest some of the readers of *AMESA News* that several years ago I developed possible worksheets for elementary school students on the order of operations around the ambiguity issue (De Villiers, 1992), and have tried them out with children on a couple of occasions with some success. In these sheets, children are led to the confusing situation, where the same number sentence produces two different answers, which then obviously needs some form of resolution. Though I'm not suggesting that exactly the same approach be used, a similar kind of 'cognitive conflict' creating approach could go some way towards developing a sound mathematical and deeper conceptual understanding of why the order of operations is a necessary convention.

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⁷ Though somewhat whimsical, it is quite conceivable that on another planet somewhere in the universe, should there be other intelligent life, that let alone them having a different notation for arithmetic and algebra, they may have chosen a different 'order of operations' to ours.

⁸ Obviously, it gets even more confusing if more binary operators, say @ and & are added into the mix to obtain longer and longer strings, and one has no clear set of rules about the order in which these operators should be used.



LETTER TO THE AMESA NEWS EDITOR

An interesting email from AMESA member, Graham Alexander, was received by AMESA News Editor, Busisiwe Goba, on the LTM journal. We would like to thank him for sharing his views with us. If you would like to respond to Graham's question in the last paragraph please email him at graham.alexander@telkomsa.net. We reproduce the full text of the email received:

Dear Sirs,

I have been a member of AMESA for many years and have always enjoyed the more "mathematical" articles published in the LTM journal. The June 2015 edition was especially interesting! Thank you!!

Something I "discovered": If one differentiates the equation of a function ($y=f(x)$), we know from elementary Calculus that $y'=0$ gives us the x -values of any turning points, maxima or minima, and that $y''=0$ gives us the x value of any points of inflection. Applying this to the equation of the Normal Curve (Statistics), the turning point (maximum value) is, as expected at $x = \mu$, the mean. What surprised me was that $y''=0$ yielded two answers: $x = \mu + \sigma$ and $x = \mu - \sigma$, where σ is the standard Deviation. That the two points of Inflection occur σ distance on either side of the mean gives a graphical interpretation for the Standard Deviation. This for me, underscored the "beauty" I find in Mathematics!

I have not found a reference to this in any of the books on Statistics I have read, and was wondering if any of your readers know of this or if such a reference exists.

All good wishes

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SOME HISTORY OF MATHEMATICS: “BOOLE2SCHOOL”

University College Cork (UCC) from the Republic of Ireland highlights the contribution made by George Boole (born 2 November 1815) as part of its Boole2School celebrations. Its objective is:

“To grow awareness among children and students of the impact of science in modern life, exemplified by the unique contribution of George Boole, and to stimulate their interest in the disciplines of Mathematics, Computer Science and Engineering which underpin our modern information society”.

Boole was the first Professor of Mathematics at University College Cork (UCC), Ireland, and it is a little known fact that his research in logic and algebra laid the foundations of much of the modern technology that we use today. We want to reach out to young students, to provide them with an alternative way of looking at mathematics and to engage in a mathematics lesson that centres on Boole’s work. In order to reach into the classrooms *Maths Circles Ireland* and UCC’s School of Mathematics have developed a series of age appropriate mathematics lesson plans for teachers, and worksheets for children, which introduce them to George Boole, his mathematics and his legacy. These lessons are developed to minimise preparation for teachers and contain a ‘fun’ element for the students.

Mathematics is a life skill and problem solving is one of its primary transferable assets which can be applied to all forms of study and further life roles. In *Boole2School*, logic puzzles stimulate children to use logic, reasoning and principles of deduction and to apply these skills to everyday scenarios. Through the use of the process of elimination, students will be able to deduce the only possible solutions to the puzzles. The *Boole2School* lesson plans are designed to stimulate high-order thinking and problem solving skills, and to encourage students to use their existing knowledge and experience in order to increase their problem solving ability.

The aim of *Boole2School* was to ensure that children around the world aged from 8 to 18 have the opportunity to join in *Boole2School* on 2nd November 2015.

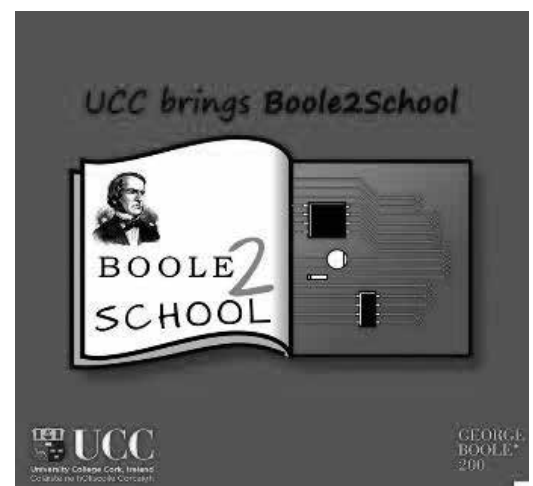
Over 1,600 classes were signed up, representing OVER 40,000 students. Although the majority of them were in Ireland, the number includes 30 schools from Lincoln (Boole’s birthplace in England) and the surrounding areas. There were over 40 classes in India as well as classes in the US, China, Australia, Germany and Russia. Over 100 *Mathlete* world leaders have been raising awareness of the programme in their countries.

For further information on George Boole and the bicentenary celebrations please see <http://georgeboole.com/> or email georgeboole200@ucc.ie.

Find us on Facebook here www.facebook.com/GeorgeBoole200 and Twitter @Boole2School <https://twitter.com/Boole2School>

Watch a short video on George Boole’s legacy here:
<http://www.georgeboole.com/boole2school/more/>

You are also welcome to establish contact with UCC *brings* Boole2School on Boole2School@ucc.ie



THE AMESA CURRICULUM COMMITTEE

The AMESA Curriculum committee consists of two National Executive members, Vasuthavan Govender (President) and Rajen Govender (treasurer) and representatives from all 9 regions of AMESA. The regional representatives play a very key role in gathering input from members on a number of curriculum and examination issues.

Both AMESA National executive members are also AMESA's representatives on the Advisory Committee for Mathematics (ACM). Some new reports of the committee will be released early in 2016. We ask AMESA members to be on the lookout for these reports which will be published on the SAMF website (www.samf.ac.za). The reports due for release are the following:

- *Geometry readiness for the grade 12 examinations by Dr R Govender*
- *National survey of PD programmes for in-service FET math teachers by Prof W Olivier*
- *Trends observed in some schools: Mathematics in grade 9 compared to Mathematics in grade 12 (three years later) by Dr VG Govender*



Teachers in the Eastern Cape (above) and North-West (right) busy with the 2015 review of the grade 12 papers in November 2015

The AMESA Curriculum committee is currently hard at work with the review of the grade 12 papers which we hope to complete before the marking starts. Some teachers were asked a few questions about their participation in the review of the 2015 exam papers. The questions and their responses are captured here:

(1) Is it important to participate in such a review? Yes/No - Give one or two reasons (for your choice)

- *It is always good to share ideas. No one should be so brash as to think that s/he knows it all*
- *I have a better idea now of how to set a question paper and the different inputs gave me a new perspective*
- *Different people have different views about the question paper, which makes it more challenging for the individual to have another in depth look at what was said by others.*
- *One person might have overlooked something which is brought to the attention of others in this review.*



THE AMESA CURRICULUM COMMITTEE

(Continued from page 14)

(2) What did you learn (if any) from participating in the review?

- *To take several points of view on board; one always learns something new in these discussions*
- *I have a better understanding of the different cognitive levels and this is valuable for further teaching and classroom practice. It is always good to share ideas. No one should be so brash as to think that s/he knows it all*
- *It is always good to hear what others think, have a debate on that and then reach consensus.*

(3) What effect (if any) will participation in this review have in the teaching of Mathematics/Mathematical Literacy

- *Valuable insights can be taken on board and used in time to come*
- *It made me aware of exactly how and what I should teach when I start a topic*
- *Educators can use what they have learnt to the best in their classrooms*

(4) Other comments

- *I realize now that I must consult a variety of resources and steer away from mere text book-orientated teaching or even on just focusing on previous exam papers Valuable insights can be taken on board and used in time to come*
- *More teachers should be exposed to this type of professional activity It made me aware of exactly how and what I should teach when I start a topic*
- *One can learn a lot about the structure of questions and the knowledge/skill required to answer such questions*

NB: The full report will appear in the next AMESA News



AMESA PHASE COMMITTEE MEETINGS

On Thursday 2 July 2015, as part of the Congress 2015 programme in Polokwane, Limpopo , the various AMESA phase committee meetings took place. The meetings were convened as follows:

Phase	Convener
Foundation Phase	Patricia Walaza (North West)
Intermediate Phase	Mzwakhe Sokutu (Eastern Cape)
Senior Phase	Wandile Hlalaleni (Eastern Cape)
FET (Maths)	Steven Muthige (Limpopo)
FET (Mathematical Literacy)	Jackie Schieber (Gauteng)

For the first time two hours were allocated to the phase committee meetings. This ensured that there was sufficient time for discussion and the capture of the issues arising out of the discussions. With the exception of Mathematical Literacy, attendance in the various venues was very good. Our thanks go out to all the conveners and the participants.

Foundation Phase

1. CAPS implementation and monitoring

There was overwhelming support for more CAPS training in the Foundation Phase. Some of the reasons given were:

- New teachers in the grade and in the phase need specialised CAPS training;
- including those who moved from high schools to the foundation phase
- Teachers need help in the implementation of the policies
- Specialists need to guide teachers specifically on time frames verses curriculum coverage.
- In some districts, there has been no follow up since the initial CAPS training.

Teachers experience with regard to implementing the CAPS curriculum indicated the following key issues:

- There is a lot of content to cover in a restricted time.
- Teachers have to contend with a lot of paper work and report writing
- In a number of cases interaction with learners is severely compromised due to overcrowded classrooms and the need to complete paper work/ reports

Support received in terms of monitoring

- Free State: Learning facilitators(Subject Advisors) are very supportive; Learning facilitators (Subject Advisors) distributed paced ATP for each teacher to assist with time allocation of different topics
- Limpopo and Gauteng: training done by NGOs to give additional support
- North West: - Subject Advisors are supportive, they conduct Professional Support programmes quarterly or when need arise to clarify policies.
- Other issues: SASAMS was a challenge when it came to recording of marks



AMESA PHASE COMMITTEE MEETINGS

(Continued from page 16)

2. New content in the CAPS curriculum: training

- Limpopo and Gauteng: training done by NGOs to give additional support
- There is a challenge with regard to tasks which are not in line with CAPS (eg the ANAs) and these limit contact time and affects teaching and learning.
- Those who are specialists tend to teach with confidence while those who come from other grades tend to struggle with younger children.
- Free State: Learning facilitators (Subject Advisors) are very supportive; learning facilitators (Subject Advisors) distributed paced ATP for each teacher to assist with time allocation of different topics.
- Limpopo and Gauteng: - training done by NGOs to give additional support
- North West: Subject Advisors are supportive, they conduct Professional Support programmes on a quarterly basis or when need arises.

3. Assessment

Various concerns about assessment, were expressed by teachers in the FP

- Provincial/ District common assessment and the ANA takes place at the same time in September. The teachers recommended that ANA be used for progression.
- Terminology used in ANA not relevant for Home Language eg. Sesotho,
- Sepedi and Setswana; test is difficult due to language used.
- Question papers are given with incorrect memorandum
- Teachers feel that workbooks increases the workload and results in the decreased use of textbooks; they require guidance support on how to manage the use of both the workbook and the textbook in their everyday teaching

4. Learner performance: Challenges and successes

- Most teachers indicated that there is progression and performance is increasing and higher than targets set in January 2015
- Most teachers do not have time to reflect due to lots of paper work and report writing

5. Lesson planning and preparation

- There is group/phase planning team work in most schools
- Teachers plan their lessons daily to ensure that teaching and learning takes place
- Teachers try to include as many resources as possible when teaching

6. Participation in the Mathematics challenge and other problem solving competitions

- Although not applicable to the phase, the convenor explained different challenges and problem solving competitions conducted by AMESA and SAMF and requested teachers to assist in encouraging their intermediate colleagues to encourage learners to participate.



AMESA PHASE COMMITTEE MEETINGS

(Continued from page 17)

7. Teacher self- development and in-service training

- Most teachers were not aware of teacher self-development opportunities in their regions
- Some subject advisors and NGOs do training in the Foundation phase but more is needed
- They found the presentations at Congress 2015 to be very practical and helpful and attending these sessions helped in their development

Intermediate Phase

1. CAPS implementation and monitoring

- Training is never enough especially when it comes to a new policy, more training has been viewed as an on-going thing that must take place
- No specific problem in implementation of CAPS especially to the provinces that got training before implementation
- Most districts have been reported to have massive work in moderating. The policy is clear, all teachers should know what to do.
- LOLT in Grade four is still a problem due to the fact that FP is only doing mother tongue teaching. Code switching has been suggested to the phase even if mother tongue is mostly used in teaching.
- The scope of work is huge for all the terms; no teacher can touch each and every topic to be done, considering the time that the common papers start. Once exam starts in term 2, the whole teaching ceases.
- Multi grade teaching needs to be revisited, must not consider the number of learners but the quantity and quality of content to be delivered.
- ANA also hinders completion of term three work, although there is no problem with administering it, teachers need to balance

2. New content in CAPS curriculum

- Content is understandable, teachers must try to read and plan the delivery of the lesson in a proper and confident way
- AMESA Conferences should equip teacher for content challenges

3. Assessment

- Better assessment direction although the feeling is that more could be done .
- Setting papers that are considering all cognitive levels needs attention
- Common tasks might be a good idea; but Common tasks have lots of mistakes on question papers; moderation must be done properly
- Teachers spend too much time teaching a certain topic only to find a 1 mark question on that section, very much demoralising, proper guidance need to be given by examiners
- Contexts used in common papers should be suitable for learners from all the areas



AMESA PHASE COMMITTEE MEETINGS

(Continued from page 18)

4. Lesson planning and preparation

- Design of activities has been viewed as very important in a day's work. One who fails to plan, plans to fail. Planning is giving direction.
- Maximum plan and order of activities to interpret the content so it can be digested by the learners is of great value

5. Participation in the Mathematics Challenge and other mathematics competitions

- Schools agreed that the participation is very minimal due to the fact that a lot of schools do not get information regarding the challenges
- Teachers need on-going training to problem solving until they gain confidence in delivering to their learners.

6. Teacher self-development

- Teachers agreed that some teachers do take responsibility for self-development through attending congresses like this one and workshops.
- Some teachers develop themselves by registering with institutions of higher learning
- The fact that teachers are just given maths to teach irrespective of their back ground in the subject is inappropriate; not all teachers are able to teach IP mathematics

7. Quality and quantity of presentations at Congress 2015

- Few papers in the intermediate phase have presented; and a lack of quality been noticed in some presentations.
- Some activities should be repeated to allow those who missed the sessions to Attend these sessions.

Senior Phase

1. Training in CAPS

- All regions indicated that more training and support is required for SP teachers
- Changing of teachers from one subject to another might lead to an individual having missed the CAPS training when it was done.

2. CAPS Implementation and monitoring

- Some teachers who attend workshops do not pass on the information to others at their schools
- There is too much content per term and teachers struggle to complete their work.
- Subject Advisors visits schools once a term; they could be contacted when needed.
- Cluster meetings and workshops - developing a community of practice



AMESA PHASE COMMITTEE MEETINGS

(Continued from page 19)

- There is a need for training in SP assessment
- Content training needs: Problem solving; Transformation Geometry; Algebraic fractions; algebraic expressions and equations.

Other issues regarding CAPS.

- Meeting feels there was no new content in CAPS although they do appreciate content specification for each grade as opposed to NSC CAPS is grade specific
- How many written tasks need to be done in a certain amount of time.
- Formal + informal tasks, only formal tasks prescribed in policy documents.
- More should be done to prepare learners i.e. each teacher should consider the needs of his learners.
- DBE workbooks should be used because a lot of money has been invested in these books
- Those who have not yet been issued with workbooks should do their best with what they have until receive support or books.

3. Assessment

- Assessment in the Senior Phase is always a challenge. The pass mark for Mathematics is now 40% (level 3) compared to level 2 previously
- Teachers need guidance regarding cognitive levels in tests and examinations
- There was a debate on the amount of informal assessment (class work) which should be given weekly; this should be reflected in the school's assessment policy
- There are differences between papers set by clusters and those set by districts and provinces
- There is a perception that district/provincial papers are not moderated; all moderation processes should be followed
- Learners tend to perform better in investigations/assignments as opposed to tests/examinations; overall the vast majority of learners in the Senior Phase (especially in grade 9) are not doing well. This tends to restrict the numbers of learners taking Mathematics in the FET.
- Parents are doing the assignments and investigations for their children; children are deprived of the opportunity for "self-directed" learning

4. Lesson planning & Preparation

- This is very important as teachers need to be well prepared when going into our classrooms
- Although each learner should have a basic textbook, teachers should consult with a variety of textbooks and other sources when preparing their lessons
- A basic lesson plan should consist of date; topic/content; 23 classwork/homework; some informal assessment; reflection by the teacher
- Teachers who are inexperienced or new to teaching mathematics should prepare in detail



AMESA PHASE COMMITTEE MEETINGS

(Continued from page 20)

5. Problem solving activities and participation in Mathematics Competitions

- Teachers are not doing enough to promote problem solving activities in their classrooms
- This has an impact on participation in Mathematics Competitions; learners are not encouraged to participate in the Mathematics Challenge (grade 7) and the South African Mathematics Olympiad (grades 8 & 9)
- Some internal school competitions should take place to motivate learners (school challenges, relays, quizzes etc)

6. Teacher self-development and training

- Teachers tend not to take responsibility for their own training needs as there are "no incentives" for studying
- AMESA, HEIs and NGOs all organise workshops and seminars for teachers and we should take advantage of these opportunities
- Currently, grade 8 7 9 teachers are busy with the 1 + 4 programme (organised by the Department of Basic Education); some successes and challenges
- Teachers were very positive about sessions at the AMESA 2015 Congress; they claimed they learnt a lot from the sessions

FET Mathematics report

1. Caps training, implementation and monitoring

- Educators indicated that they still need training on the implementation of Caps. 2014 was the first year which candidates sat for exams based on Caps curriculum and the decline in results shows that there are still some gaps.
- Monitoring and support for the implementation is seldom done and it usually focuses on grade 12. Support should be given to all educators irrespective of the grades they are responsible for.

2. New content in the caps

- Some teachers feel that they are not confident enough to teach some of the topics i.e. Probability and Euclidean Geometry. These are topics which were discussed during CAPS training. They indicated that they still need more training on the topics mentioned.
- We also have a lot of new educators who did not do the then P3 and never done Geometry and Probability in their studies.
- Training is also needed in the following topics though they are not new: Trigonometry and Functions. They indicated that instead of focusing on content only the training should also focus on the methodology of teaching those topics as learners are not performing though teachers feel they master the content.
- They suggested that integration of content should also be emphasised during teaching for learners to be able to see the relationship between different topics i.e. Number patterns and functions, transformations in Algebraic functions and Trigonometric functions.



AMESA PHASE COMMITTEE MEETINGS

(Continued from page 21)

3. Assessment

- This was the most controversial of them all were some teachers were complaining about common tasks which are full of mistakes while others were in favour of common tasks.
- Most teachers cannot type maths hence they literally cut and paste questions from previous exam if they are to set an assessment task.
- Teachers want a thorough training on setting quality assessment task that address all the cognitive levels as per Caps document including typing Maths.
- The challenge identified is there are few curriculum advisors to do the job.
- Branches were encouraged to identify people who are knowledgeable to conduct workshops and regions were requested to assist in terms of logistics.

4. Learner performance: challenges and successes

- Learner performance is not good at all based on half yearly results. One of the reason indicated was pass requirement that was based on age cohort and they are anticipating further drop in the final matric results.
- Teachers were worried about the knowledge of learners they receive in grade 10 that they know almost nothing hence they are expected to do too many extra lessons.
- They suggested that in future there should be joint meeting between Senior Phase and FET at so that they can share their frustrations.
- They were worried that Senior Phase is not given attention and in most cases teachers who are teaching in this phase are unqualified to teach Mathematics and they are not given support hence they do the little that they know.

5. Lesson planning and preparation

- Most teachers do not write formal lesson plans as they say it was indicated that to reduce paper work they may not write lesson plan.
- It was agreed that without a plan on how the content and skills will be presented logically to learners our teaching will frustrate learners i.e there were topics that took teachers time to understand them and expecting learners to master them without proper plan will be unreasonable.

6. Participation in the mathematics problem solving competitions

- Most teachers indicated that their learners do not participate. They indicated lack of information about the competition registration and competition dates.
- Information should be directed to all members in order to encourage learners to participate. Some teachers do not have confidence in problem solving and need support to be able to support their learners.



AMESA PHASE COMMITTEE MEETINGS

(Continued from page 22)

7. Teacher self-development and in-service training

- Teachers were encouraging each other to register to further their studies with institutions of higher learning.
- They were also encouraged to enrol for SAMF problem solving course which most teachers were not aware of. Life Long learning will keep teachers relevant and on top of their career.
- Teachers were encouraged to write papers or plan workshops to close the identified gaps or to solve the indicated problems and present in the 2016 National Congress.

Mathematical Literacy

1. Caps training, implementation and monitoring (Mathematical Literacy)

- The teachers did not feel the need for more generic CAPS training. They enjoy teaching the current curriculum.
- The teachers find that the sections that the learners find the most difficulty with are *Measurement; Maps, plans and other representations of the physical world*

They would appreciate more workshops on these sections both at the regional and national conferences

2. Assessment

- Language is still problem and learners are struggling especially with Paper 2.

Some suggestions.

1. Maybe each exam should contain a list of words that learners might have difficulty with, with an explanation of the meaning of these words. Could AMESA try to get the DBE to include something like this??
 2. Maybe use same scenarios in both Paper 1 and Paper 2.
 3. It was discussed that the teachers should make sure that they cover all the scenarios listed in the CAPS document as the learners would be asked questions on these scenarios in Paper 1.
- Often Mathematical Literacy learners feel that the Mathematics learners look down on them and Mathematical Literacy teachers often feel that the Mathematics teachers look down on them.
 - It would help if a list of tertiary courses available to Mathematical Literacy learners is made available to them.
 - Paper 1 in 2014 was far more difficult than Paper 1 in 2013. The teachers felt that the straight forward questions should be returned to Paper 1.

3. Mathematical Literacy sessions for teachers at the AMESA Congress

- It is not always clear which of the sessions on the programme are for Maths Lit teachers. Also there are not many Mathematical Literacy sessions. If there were more Mathematical Literacy sessions, the teachers could be encouraged to attend
- The Mathematical Literacy teachers who attended the Limpopo Congress should be prepared to present a How I Teach session next year in Mpumalanga.



AMESA PHASE COMMITTEE MEETINGS

(Continued from page 23)

Some key decisions made:

- Andrew Gilfillan has agreed to run a workshop next year on setting ML questions for the exam.
- Jackie Scheiber will run a session on the marking of ML papers and Rencia Lourens will provide exam papers to use for the marking. The teachers are not always sure when to allocate marks for "CA" when marking.
- SLC Mnisi and MH Chiloane will each present a "How I Teach" Session.
- M Mabushe from the Gert Sibande district in Mpumalanga will present a workshop.

5. Other issues

- Generally Grade 10 Mathematical Literacy learners struggle for the first three months as they have built up a resistance to maths over the years. However, they start to feel more confident with the subject as the year progresses.
- Some teachers felt that it was a struggle to only teach the learners in Grade 12 as the teachers in Grade 10 and 11 did not always cover all the work that they should have. The group felt that it was best practice to take one group through from Grade 10 to Grade 12.
- ML will definitely continue being taught for at least the next 6 years.
- It was agreed that everyone's names and e-mail addresses should be circulated so that we could keep in contact. The group should start with drawing up a list of words the learners have difficulty with and a list of explanations
- The "Mind the Gap" document has been written and printed but had not yet reached the schools.



Senior Phase teachers in action during phase committee meetings



Foundation Phase teachers in action during phase committee meetings

Our comment: Once again, we thank our phase committee conveners for convening these meetings and ensuring that the minutes of each phase committee reaches the AMESA National Curriculum Committee. We also like to thank our members for attending these meetings and contributing constructively to the robust discussions in each venue.



In our previous AMESA News we spoke about our agreements with both CASIO and SHARP. In this issue, we report on the workshops conducted by both SHARP and CASIO throughout South Africa in 2015.

SHARP ACTIVITIES

Sharp has had a busy year with workshops around the country. They also announced their new upgraded model of the EL-W535HT scientific calculator which now has the prime factorizing button and an even easier to use statistics mode. The calculator comes with a **drill mode** where students can practice their mental maths on the calculator! The best part about **drill mode** is that teachers don't need to do any marking!

SHARP participated in the Sasol Techno X Expo which is a huge career expo for students in Secunda. Here students (and teachers) were able to play with the brand new EL-W535HT calculators. Most students (especially the grade 11 and 12's) did not want to stop playing with the drill mode, or give the calculators back for that matter.



SHARP also conducted workshop for primary school mathematics teachers in Welkom, where each teacher was given their very own EL-W535HT scientific calculator (picture inserted above). Teachers were thrilled to receive this gift and learn how to use it.

SEARTEC has also started a project called the SEARTEC School of the month. Every month a school that is doing something in their community, despite a lack of funds and resources, receives from SEARTEC a class set of 40 Sharp EL-W535HT scientific calculators to benefit their maths teaching in the classroom. Below is the SEARTEC school of the month for May 2015, City Kids.



Teachers can check out www.mathsatsharp.co.za for free grade 8 -12 Mathematics and Mathematical Literacy worksheets, exam papers and fully worked out memorandums all done according to the CAPS curriculum. Primary school teachers should take a look at www.e-classroom.co.za for free CAPS aligned grade R-7 worksheets for all subjects.

Find Maths At Sharp on Facebook and communicate with them about the impact of SHARP in your communities and the lives of learners. One of the schools could become the SEARTEC school of the month for January 2016!



CASIO ACTIVITIES

2015 has been a busy year for TEAM CASIO.



Since the very successful, AMESA National Congress in Limpopo the Calculator Training team has conducted 80 Educator workshops & 131 Learner workshops.

Please contact your local trainer for free workshops at your school or cluster meeting:

Region	Name	Cell number	Email address
Gauteng and Free State	Astrid Schieber	071 354 0137	astrids@jamesralph.com
Western Cape and Eastern Cape	Merrick James	072 793 4806	casio.calc.wc@gmail.com
Mpumalanga, Limpopo North-West	Mirriam Mafojane	078 528 1505	mirriam@jamesralph.com
Kwa-Zulu Natal & Eastern Cape	Lauren Izaaks	073 609 7613	laureni@jamesralph.com

Visit the CASIO website for CAPS calculator resources

<http://www.jamesralph.com/education/sa-caps-curriculum-resources.html>



AMESA Congress 2016

We have started with preparations for the 2016 AMESA Congress to be held at Tshwane University of Technology (Mbombela Campus) in Mbombela, Mpumalanga from 27 June 2016 till 1 July 2016. We have a very important and appropriate theme for our Congress in one of the more beautiful parts of our country.

Theme: Reclaiming our African pride through Mathematics teaching

The Congress 2016 first announcement is being sent with this AMESA News to members; followed by the final announcement in February 2016. For further details contact the following persons:

Conference position	Name	Cell number	Email address
Congress Director	Isaiah Shabungu	083 767 0286	Isaiah@amesa.org.za
Academic coordinator	Busisiwe Goba	073 848 3377	vicepresident@amesa.org.za



See you at Congress 2016 in Mbombela, Mpumalanga

Report on AMESA 2015 Congress by Kwena Masha (Congress Director)

INTRODUCTION

The 21st Annual National Congress of the Association for Mathematics Education of South Africa (AMESA) took place during the week 29th June to 03 July 2015 at the University of Limpopo in the Limpopo Province. Through this report, I provide a snapshot of the planning activities, proceedings during the congress, and the afterthoughts in the form of recommendations for future congresses.

THE CONGRESS 2015 PLANNING ACTIVITIES

The activities comprised Congress Committees, Congress 2015 Calls, Congress papers and workshops, Congress 2015 Registrations/Applications, and Congress Facilities.

Congress Committees

The Congress 2015 had two committees that were responsible for the planning and the execution of the congress activities. At the national level we had the National Organising Committee under the leadership of Alwyn Olivier and at the local level we had the Local Organising Committee under the leadership of Kwena Masha. The full membership of the two committees is in table 1.

Table 1: Congress 2015 Local and National Organising Committee

Name	Role
Local Organising Committee	
Kwena Masha	Congress Director
Steven Muthige	Deputy Congress Director
Satsope Maoto	Academic Coordinator
Paul Mutodi	Academic Coordination
Bernard Chigonga	Academic Coordination
Manare Setati	Registration and Memorabilia Coordinator



Report on AMESA 2015 Congress by Kwena Masha (Congress Director)

(Continued from page 26)

Name	Role
Local Organising Committee	
Ramokone Maake	Registrations
Mahlatse Dikgale	Registrations
Paul Mapheto	Registrations
Mikateko Sithole	Registrations
Manamela	Registrations
Kgadi Khumalo	Congress Treasurer
TB Chewe	Finances
Tshililo Mukhaninga	Finances
Mameta Phoshoko	Excursions
Elias Mathekga	Social Events
Khutso Letsoalo	Administration Assistant
Zwelithini Dhlamini	Accommodation Coordinator
Lesetja Maboja	Accommodation
Frans Thosago	Accommodation
Manthiba Ramaboka	Catering Coordinator
Kgaladi Maphutha	Catering
Matjie Masha	Catering
Dimakatso Muthelo	Transport Coordinator
Malose Kola	Transport
Elliot Ndlovu	Activity Centre Coordinator
Maria Moja	Congress marketing and branding
Makoma Ramaphakela	Congress marketing and branding
Dikeledi Letsoalo	Congress marketing and branding
BO Doubata	Congress marketing and branding
Joe Chewe	IT Support
Pheladi Nakeng	IT Support

National Organising Committee	
Alwyn Olivier	Chair and Sponsorship Coordinator
Vasuthavan Govender	Academic Committee
Nombulelo Mandindi	Congress Secretary
Rajendran Govender	Treasurer support
Gary Powell	Secretarial support
Phillip Mokoena	Congress 2016 Planning

In addition to these committees we had 38 Congress 2015 Helpers. The group comprised final year mathematics education students at the University of Limpopo. We also had Stalwarts like Joseph Mongwe, Joseph Maivha and others stepping in to assist where necessary.

The National Committee was instrumental in ensuring that all key congress activities are attended to in time and to the detail required. These behind the scene activities were the ones that ensured the overall success of the congress. The Local Organising Committee learnt a lot from this support and we recommend the continuation of the services for the forthcoming Congresses.



Congress 2015 Calls

The Congress theme was conceptualised and approved by the National Council at the beginning of 2014. This allowed the LOC to prepare a congress flyer and a short DVD announcing the congress theme and the tourist attractions of Polokwane at the end of Congress 2014 in Kimberly. A lot of energy went into this production and we acknowledge the role of the Polokwane Tourism Information Centre and the University of Limpopo Printing section for the professional work. This marked the beginning of many collaborative activities the LOC had with many service providers.

The first announcement for Congress 2015 and call for papers went out during November 2014. This came through following lots of interactions with the NOC and in particular with the Alwyn who had to pay us a visit. At this stage we had revisited our experiences from Kimberly and we were going through those point by point deliberating how we should improve the delegates' experiences at the 2015 Congress.

The second and final call went out during February 2015. At this stage we had tentative agreements with almost all service providers for accommodation, catering, cultural events, transport, and role-players during the opening and closing ceremonies. The challenge now was to monitor the number of delegates responding to the call.

Congress Papers and workshops

The responses for call of papers reflected the trends from previous Congresses but with a significant increment in the category of long papers. Collectively 112 submissions were received and of those 103 were accepted. A team of 31 reviewers took part in reviewing the submissions. Both the LOC and the NOC remain thankful for the selfless role played by the reviewers and we wish they remain available for future congresses. The details of the spread of the different submissions is in table 2.

Table 2: Spread of submissions for Congress 2015

Number of submissions	112
Number of plenary paper submissions:	5
Number of long paper submissions:	44
Number of short paper submissions:	2
Number of workshop submissions:	27
Number of 'How I teach' paper submissions:	14
Number of poster submissions:	0
Number of Maths Market	20
Number of submissions accepted:	103
Number of submissions rejected:	9
Number of submissions withdrawn by authors:	8

Congress registrations

AMESA National Congresses' registrations are the most challenging activity. Each LOC will tell you a story around congress registrations. Initially, each LOC has to make a prediction about how many delegates are likely to attend the Congress. The number is then used for all planning activities. That is, your accommodation, social events, catering, production of proceedings and ultimately the congress budgets are based on that prediction. For 2015, the planning number was 1200. The number was revised down to 100 at the end of May 2015. Both the LOC and the NOC believed the number was realistic. However, at the end of the registration during the second day of the Congress, we had 898 delegates as reflected in table 3.



Congress 2015 Calls

(Continued from page 29)

Table 3: Delegates registrations for Congress 2015

Registration Category	Number	%
Early Registration	189	21%
Normal Registration	314	35%
Late Registration	396	44%
Total	899	100%

That is, the actual registration was 102 delegates less than expected. The first and the second day of the congress were affected by this low turn-up as all the services for catering and accommodation were based on the planning number. This led to escalation of the costs as addressed under the section on budget. We, however, want to commend the Provinces for mobilising delegates for Congress 2015. In particular we commend the leadership of the Northwest Province for bring the biggest number of delegates than all the Provinces. In terms of the logistics around the registration, AMESA has made a significant progress. All delegates register through the National Office and the LOC can track the trends through the drop box facility. The facility has all the necessary information around congress activities. That is, the spread sheets allowed us to track the delegates requiring different services such as accommodation, social events, memorabilia, etc.

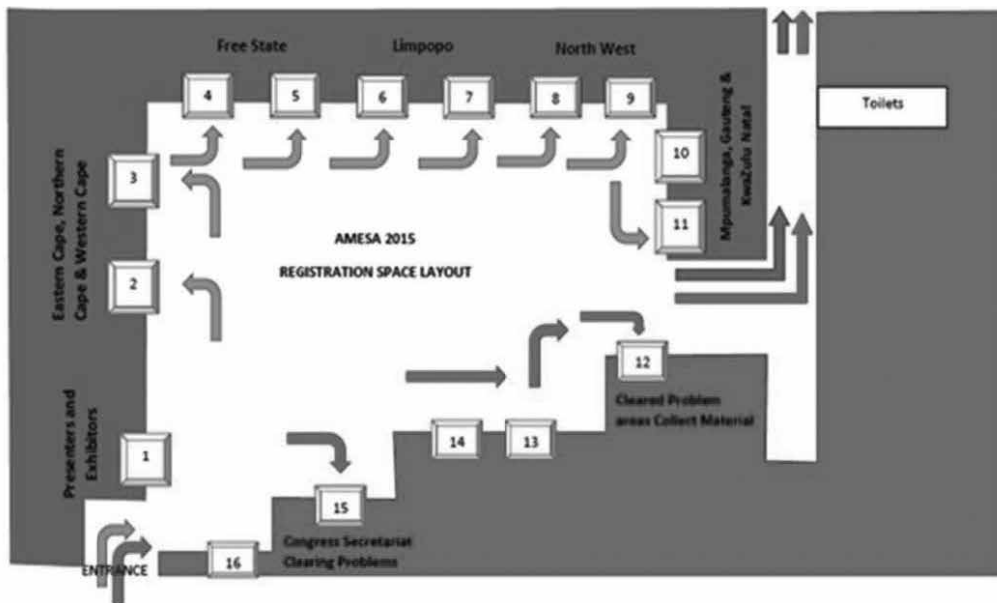


Figure 1: Congress 2015 Registration Floor Plan (North and West: No Problems; East and South: Problems)

And even more important the facility has the up to date section on finances. This has really improved the way AMESA Congresses are managed. It is because of this innovation that we took a decision to manage Congress registrations according to the Provinces. Furthermore, we also took a decision, following the interactions with Alwyn Olivier, to divide the registration process into "No problem delegates" and the "Problem delegates". The first category comprised all delegates who had settled everything regarding their registrations whilst the second had those with incomplete registrations. The result was a registration floor plan as in figure 2. During the actual registration, the "problems" area was relocated to the DMSTE building where we had a reception room and Offices for the Congress secretariat. The "no problems" area remained in the University Administration building as in the plan. This improved the efficiency of the registration. Whilst there were few cases where delegates still encountered challenges, the majority commended the plans and how they were executed. We hope we have, in a small way, contributed to an improved way through which the congress will be managed going forward.



Congress 2015 Calls

(Continued from page 29)

Congress Facilities

The University allocated a number of venues for the congress activities at no cost. That included 2 Offices for the secretariat, two board rooms for LOC and reception for day delegates, Administration foyer and 5 serving points for Congress registration, Tiro Hall for all plenaries, opening and closing ceremonies, 4 computer labs, 15 lecture halls, Anglo Platinum Multipurpose Centre for all social events and New Cinema Hall for lunch.

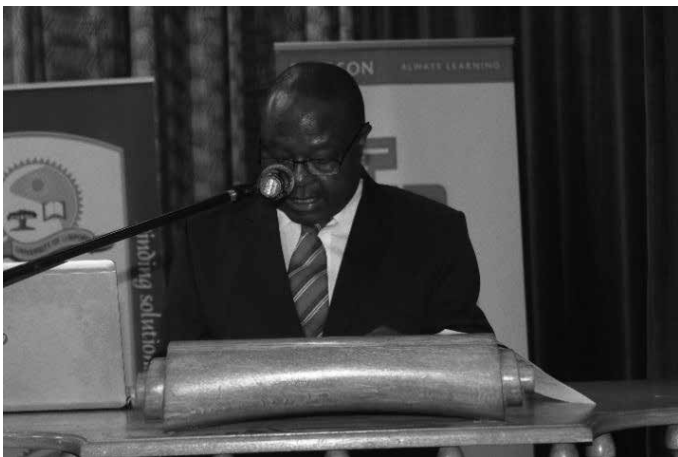
The week before the Congress

This was a crucial week as the LOC had to go through all the planning activities again and again to ensure the smooth running of the congress. We worked on fulltime basis ensuring that the proceedings were in place, the accommodation was in order and all systems were ready for the Congress. The Department of Mathematics Science and Technology Education (DMSTE) and the Limpopo Province AMESA Council played a pivotal role during the week ensuring that members had food. All the helpers were taken through their tasks and this came out handy during the Congress. The team-work among this 80 members team was just amazing.

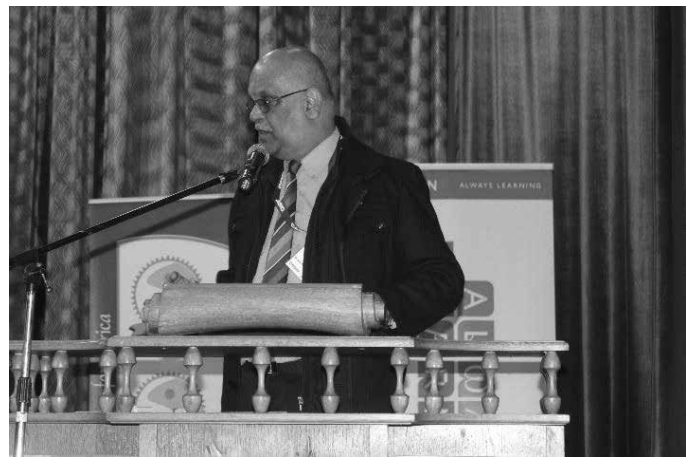
CONGRESS ACADEMIC PROCEEDINGS AND SOCIAL EVENTS

Congress 2015 Opening Ceremony

The Congress opening ceremony started at 10h00 in a packed Tiro Hall. Following the welcome words by the Congress Director Kwena Masha and the Chairperson of the Limpopo Province Steven Muthige, Professor Richard Madadzhe, the Executive Dean of the Faculty of Humanities gave message of support whilst Professor Mbulaeni Sibara, the Deputy Vice Chancellor Research and Teaching, welcomed the delegates to the University on behalf of Professor Mahlo Mokgalong, the Vice Chancellor and Principal. Vasuthavan Govender introduced and welcomed all the invited guest speaker and ultimately declared the Congress 2015 officially opened. The Thune Primary School learners gave sweet melodies during the ceremony and rendered a moving National anthem.



Prof Mbulaeni Sibara DVC - Research and Teaching AMESA President



Vasuthavan Govender AMESA President



CONGRESS ACADEMIC PROCEEDINGS AND SOCIAL EVENTS

(Continued from page 31)



Thune Primary School



Delegates during the Opening Ceremony

So, Congress 2015 was finally on. The delegates were all on board, the presenters were ready to roll, the different conference venues were ready and it was all systems go!

Congress Academic Proceedings

The Congress 2015 programme comprised two parallel programmes - the Main programme and the Mathematics Activity Centre programme.

The main programme had 5 plenary speakers comprising 3 females and two males. The 3 females were Kabelo Chuene from the University of Limpopo in the Limpopo Province, Sara Banslal from the University of KwaZulu Natal in the KwaZulu Natal Province, and Sarah Johnson from the University of South Africa in the Gauteng Province. The 2 males were Percy Sepeng from the North West University in the North West Province and Ed Silver from the United States of America. Geographically, this was the most balanced team of experts. The same spread was also observed in the topics that the presenters made giving the delegates an all-round experience. Once more, the LOC and the NOC remain thankful for the contribution by this team in making Congress 2015 very special.



*Edward Silver - USA
University of Michigan*



*Sarah Jane Johnson
UNISA*



Percy Sepeng - NWU



CONGRESS ACADEMIC PROCEEDINGS AND SOCIAL EVENTS

(Continued from page 32)

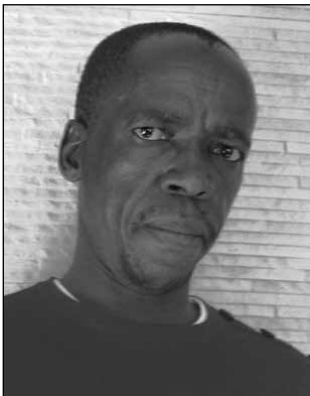


Sarah Bansilal
UKZN



Kabelo Chuene
UL

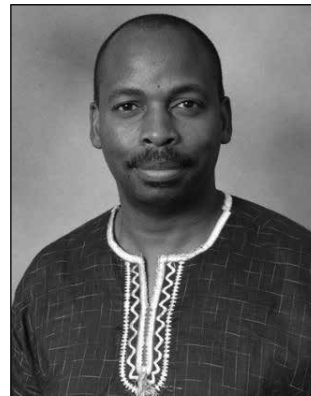
There were also two plenary panels that were put together and thanks for the hard work by Alwyn. The first plenary discussion focused on the role of textbooks in mathematics learning and in particular addressed the question - *“Can textbooks/workbooks improve the quality of mathematics teaching and learning?”* The panel was chaired by Phillip Dikgomo from the National Department of Basic Education and Training. Other panellists included Manare Setati from Ukuqonda Institute, David Sako from the National Department of Basic Education and Rufus Wesi from Sasol Inzalo foundation.



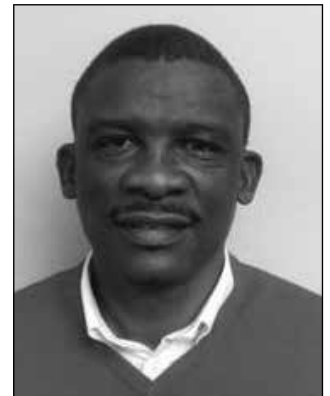
Manare Setati



Philip Dikgomo (Chair)



Rufus Wesi



David Sako

The second plenary panel discussion focused on e-learning and was chaired by Lynn Bowie from OLICO. The other panellists were Eric Gulbis from Mathematics for Siyavula Education and Michael Goodman from Via Africa. The question addressed was *“can e-learning improve the quality of teaching and learning?”*



Lynn Bowie (Chair)



Eric Gulbis



Michael Goodman



CONGRESS ACADEMIC PROCEEDINGS AND SOCIAL EVENTS

(Continued from page 33)

Bravo guys, you did us and the whole nation proud. We hope the experienced shared in the two sessions will go a long way in improving the quality of mathematics teaching and learning. The rest of the long papers, workshops and mathematics market sessions unfolded through 16 to 25 parallel sessions at a time. We have no words to express how thankful we were for the excitement generated by the presenters. You kept us on course and for that we say thank you.

The Mathematics Activity Centre was sponsored by Pearson and was allocated two venues - EL1 (Computer Lab with 88 stations) and the DMSTE Postgraduate Centre with 20 stations. Pearson Staff was mainly responsible for the running of workshops in EL1 whilst the other centre was shared by different presenters.

The AMESA Annual Regional Meetings were held in the afternoon of the 29th June 2015 and that led to the AMESA Annual General Meeting that was held on Tuesday 30 June 2015.



Dr Mangena receives a token of appreciation

Social Events

The social events during Congress 2015 lived up to the theme of the congress - quality. Thune Primary School choir kick-started what would be remembered as the best social/entertainment programme that AMESA has experienced. The learners sang beautifully and received a standing ovation.

The welcoming dinner did not disappoint. With food aplenty, a glittering venue that was packed to capacity, Charlie's Jazz Band what was arguably their best performance in a while. The band members had energy and moves that kept the delegates on their feet from the start to the end. It was really exciting to observe the quality performance that was being dished out. To top it all we had the Honourable Ishmael Kgetjepe, the MEC for Education in Limpopo Province welcoming the delegates to the Province.

On the 30 June 2015, we had Cultural evening in which we were entertained by cultural groups from the Province. The cultural food was just amazing and the venue was fully transformed from what it was the previous evening. Ntate Mongwe was also in his elements drumming the Provinces up and down the stage. The setting was magnificent. The evening, however, belonged to the DJs kept everybody meandering round.





Mrs Matlaka Bopape addresses audience at Gala Dinner, honouring her husband Dr Mathume Bopape

On Wednesday 1st July 2015, two buses left for GaMothapo to pay tribute to the local Chief. A royal treatment was dished out and delegates came back with one comment - oh! How we wished everybody was there! Six buses also left for Polokwane Nature Reserve and Meropa Casino. Whilst the animals seemed not to be aware of the invasion, the tour gave the delegates a wild experiences from the hectic academic schedule.

Thursday the 2nd July 2015 was reserved for the AMESA2015 Gala Dinner that was dedicated to the AMESA founding president Dr Mathume Bopape. Dr Mosibudi Mangena, the former Minister of Science and Technology, was the main speaker and gave reflections on Dr Mathume Bopape's role in shaping the mathematics education landscape in South Africa.

Mrs Matlaka Bopape, Dr Bopape's wife, gave an emotional reply taking us through Dr Bopape's health status whilst expressing the family's appreciation of what AMESA did for her husband. Dr Bopape's sister was also in attendance. The entertainment for the night came from Limpopo Youth Orchestra and our campus DJs.

Congress meals were suitable, at least from the second day of the Congress. Sometimes reality is the best teacher. It does not matter how many times you warn the service providers about the expected speed of services - they are always overwhelmed by the first day. So we were not an exemption. However, the recovery was noticeable and the food, hopefully met the delegates' expectations.

The Congress Budget Structure

The National Congresses Budgets cater for three main categories of costs and two forms of income. The first category of costs - core costs, involve production of proceedings booklets and CDs, transporting and accommodation of guests (plenary and panellists), congress bags and stationery, food (lunches, teas and welcoming dinner), entertainment during welcome dinner, music items during opening and closing ceremonies, and sometimes congress venue hire. It is these costs that are normally covered by the Congress registration fees. The second category involves social events (cultural evening, congress excursions, Gala Dinner, and associated entertainment) and memorabilia (t-shirts, jackets, caps, and scarfs). These are non-core costs and the Congress can



CONGRESS ACADEMIC PROCEEDINGS AND SOCIAL EVENTS

(Continued from page 34)

still happen with or without them. Whilst the LOC and the NOC work hard to keep the costs as low as possible, it is often a challenge to cover the core costs from the registration fees. The third category of costs involve accommodation of delegates at the Congress venue. These costs include catering (breakfast). The income for the congresses is raised through the registration fees and the sponsorship. The sponsorship is not always certain and represents a varying income.

From our experiences in the 2015 Congress and the previous one in 2006, it will be helpful to develop guidelines in how to deal with the congress budget structure. We could, for example, say the registration fees should cover at least 90% of the total costs for the core-expenses (excluding the accommodation at the venue). In this way, the sponsorship minimum target could be 10% of the core expenses. Furthermore, we could consider minimum standards for catering (a lunch meal of not more than R65.00 per person). In this way, delegates will know what to expect for meals.



Mrs Bopape receives a framed certificate from AMESA President Vasuthavan Govender honouring her husband Dr Bopape as the first President of AMESA

RECOMMENDATIONS FOR FUTURE CONGRESSES

1. The NOC has developed comprehensive congress data base. The LOCs need to be work-shoped on those and the NOC must always insist on their usage. When used properly, the systems can really go a long way in improving the efficiencies of the congresses. Thanks to Alwyn for the hard work.
2. Congress registration fees structure needs to be deliberated by the delegates so that they have a clearer understanding of what it takes to run the congresses.
3. A decision need to be taken regarding the Gala Dinner. Should it be considered as part of the core-cost or not. Ideally, all delegates should have access to the Gala Dinner.
4. Congress memorabilia: This often keeps the LOC engaged until well beyond the congress. We support the current idea where we could have a partner who can be licensed to produce and sell these products directly to the delegates during the congresses.
5. Catering for exhibitors - Where possible, lunches and tea for the exhibitors should be provided in their exhibition room. We tried this arrangement and the exhibitors appreciated the effort.

CONCLUSION

AMESA 2015 was an exciting experience for the LOC and hopefully for the NOC and the delegates. I know there are still plenty of areas where we can and need to improve the services. Thanks to each and every delegate, sponsor, exhibitor, caterer, service provider, cleaner and security personnel!



More pictures from Congress 2015



Our comment (s): We would like to place on record our sincere thanks and hard work to the 2015 Congress Director Kwena Masha and his team for an exciting, informative and eventful 2015 Congress. We also thank the chairperson of our National Organisation Committee Alwyn Olivier and members of the AMESA Executive committee for their important roles at the 2015 Congress.



AMESA NATIONAL COUNCIL REPORT (2014 - 2015)

Purpose of the report:

This report intends to inform members of AMESA activities and developments across the whole of South Africa. It wishes to provide a "bigger picture" of AMESA, from meetings and workshops in schools, to the national congress

Executive office bearers

Vasuthavan Govender (President)
Busisiwe Goba (Vice-President)
Rajen Govender (Treasurer)
Gary Powell (Secretary)
Alwyn Olivier (Additional Member)

National Council

Region	National representative
Eastern Cape	Mzwakhe Sokuthu
Free State	Annari Milne
Gauteng	Freddy Tlhavani
Kwazulu Natal	S'thembiso Khanyile
Limpopo	Steven Muthige
Mpumalanga	Phillip Mokwena
Northern Cape	Peace Mojaki
North West	Peace Mojaki
Western Cape	Desiree Timmet

National council meetings held July 2014 to June 2015

- 9 July 2014 - Kimberley
- 6 February - Kempton Park (executive meeting)
- 6 & 7 February - Kempton Park
- 26 & 27 June - Polokwane

National Congress 2014

- Dates: 7 to 11 July 2014
- Venue: Diamantveld High School, Kimberley
- Congress Director: Lawrence van Heerden
- Co-director: Nina Scheepers
- Total number of delegates: 1 055



National Congress 2015

- Dates: 29 June to 3 July 2015
- Venue: University of Limpopo, Polokwane
- Congress Director: Kwena Masha
- Deputy Director: Steven Muthige
- Total number of delegates: 892 (at the time of the AGM)

Congress 2015 attendance according to regions

Region	Number of participants
Eastern Cape	25
Free State	182
Gauteng	119
Kwazulu Natal	39
Limpopo	179
Mpumalanga	57
Northern Cape	4
North West	251
Western Cape	36
Total	892

Membership

- Noeline Tomsett is our membership secretary and all queries regarding membership must be directed to her
- We appeal to members to please fax/email/post both the deposit slip/receipt and membership form to her (**PLEASE REFERENCE YOUR DEPOSIT SLIP WITH YOUR NAME**)
- In the event of "mass" registration (at regional conferences), the regional secretary must draw up a list of the new members and this must accompany the payment, along with the registration forms - to Noeline Tomsett
- We need to work on increasing membership - by providing a regular, quality presence in all regions
- We convey our special thanks to Alwyn Olivier, Noeline Tomsett, Nombulelo Mandindi and Corlé Lourens for developing and running the system of registration at this congress

Distribution of membership and branches

Region	Individual	Institutional	Total	Active branches
Eastern Cape	80	25	105	3
Free State	182	75	257	N/A
Gauteng	208	77	285	9
Kwazulu Natal	389	42	431	13
Limpopo	296	30	326	6
Mpumalanga	172	25	197	14
Northern Cape	21	20	41	1
North West	82	116	198	5
Western Cape	93	71	164	1
Foreign	17	2	19	N/A
Total	1540	483	2023	52



Activities, per region, for July 2014 - June 2015

Region	Meetings, launches	Regional Conferences & AGMs	Mini-conferences, workshops, seminars	Maths Challenges, Olympiads	ANA reviews	Matric paper reviews	Total events
Eastern Cape	6	1	1		1	1	10
Free State		1					1
Gauteng	7	1	1		1		10
Kwazulu Natal	7	3	10	2	1	1	24
Limpopo	25	1	1	2		1	30
Mphumalanga	6	1	9		1	1	18
Northern Cape	6	1	1				8
North West	3	2	1	1			7
Western Cape	4	2	3	1	1	1	12
Total	64	13	27	6	5	5	120

AMESA Publications

Publication Editor-in	Editor-in-chief /Person responsible	Number of issues in reporting period
Pythagoras	Alwyn Olivier	2
Learning and Teaching Mathematics (LTM)	Duncan Samson	2 (#17 in December 2014 and #18 in June 2015)
AMESA News	Busisiwe Goba	3 (#54 and #55 from 2014 and #56 in June 2015)

AMESA Committees

Advertising committee: Convened by Vasuthavan Govender

Curriculum committee: Conveners: Vasuthavan Govender and Rajen Govender

Sponsorship committee: Consists of the President, Treasurer, Secretary and Alwyn Olivier

AMESA Website: Alwyn Olivier manages the website, along with the FaceBook page.

SANCIMU (South African National Council for the International Mathematics Union): AMESA representatives in the SANCIMU are Busisiwe Goba; Lindiwe Tshabalala; Jaya Naidoo; Debbie Stott and Percy Sepeng

Partnerships

SAMF (South African Mathematics Olympiad; South African Mathematics Challenge; Advisory

Committee for Mathematics: ACM)

Statistics South Africa (STATS SA) (Maths4Stats)

National Science and Technology Forum (NSTF)

Department of Basic Education (DBE)

Department of Science and Technology (DST)

SAASTA (National Science Week)

Capacity-building workshop

As per February 2015 National Council meeting, all regional office bearers (or those aspiring to be office bearers) will participate in a workshop on 2 July 2015. The first half will be a generic presentation by the President followed by sessions conducted by our National Secretary and Treasurer. The main aim of the workshop will be to institute best practices in the running of regional offices.



Presidents' address at the 2015 AMESA AGM

The current president of AMESA Vasuthavan Govender delivered his first president's address at the 21st AGM on Tuesday 30th June 2015. Some of the points made in this address are listed below:

- The president made reference to AMESA's constitution and its mandate to serve Mathematics Education. Various initiatives and activities over the past year were mentioned in the address (with regard to AMESA's contribution to Mathematics Education in South Africa).
- AMESA places high value on our National office staff Noeline Tomsett and Nombulelo Mandindi. They have their sets of responsibilities to keep the AMESA flag flying high but also work collaboratively when required to do so. They are based at WITS University and the President thanked Head of the School of Education, Prof Jean Baxen and her team, for the permission given for AMESA's continued use of office space at the university.
- The President reminded members of the importance of AMESA regions and the need to serve our members in the regions. For the first time, as per council directive, eight of our regions had already had their Annual General Meetings, before the National Congress. Special mention was made of two successful branches (Tshwane in Gauteng and Umlazi in Kwa-Zulu Natal) where there are high-quality activities for members. At the same time, the president spoke about challenges in the Free State leadership since the beginning of 2014. He reported that as per council decision, the matter was addressed with the election of an interim regional committee. The President oversaw this process.
- One of our flagship activities has been our review of the grade 12 Mathematics/Mathematical Literacy papers since 2009. Our reports have been well received by the Department of Basic Education (DBE) and the President urged more members to take part in this very informative and enriching professional activity. The President also mentioned that AMESA also reviewed the Annual National Assessment (ANA) for Mathematics in grades 3, 6 and 9. Once again, the Department of Basic Education thanked us for our professional engagement in this regard. Our reports to the DBE are also available on our website.
- Our AMESA publications have been well received by members and the President promised that backlogs of AMESA News to members have been sorted. However, AMESA has been hamstrung by the lack of interest in advertising in our publications, despite various efforts to do so. At the same time, AMESA was grateful for the sponsorships received for Congress 2016 (arranged by Alwyn Olivier). We were also fortunate that the Oppenheimer Memorial Trust also gave us some sponsorship to assist us with our activities and operational expenses. The President also informed members about our national agreements with CASIO and SHARP.
- The president informed members of the strict financial controls within AMESA National (set up by the treasurer Rajen Govender and previous President Alwyn Olivier) and expected the same to happen within AMESA regions.
- A concern was expressed about our membership numbers which have remained fairly constant over the years (in the region of 2000). The President stated that membership is a key part of AMESA's strive towards financial sustainability and implored members to actively recruit more members.
- The President thanked the AMESA 2015 LOC under the able leadership of Dr Kwena Masha as well as Alwyn Olivier (NOC Chair) for all the AMESA 2015 arrangements. Our National Congress is our main National activity and is epitome of what AMESA stands for "volunteerism in the pursuit of excellence in Mathematics". However, concerns were expressed about the clash of Congress 2015 with the training of subject advisors in the Western Cape.



- An important part of Congress 2015 is the phase committee meetings. These were to be held on Thursday 2 July 2015 and the President urged members to attend these meeting. (A summary of these discussions appears elsewhere in this edition of AMESA News)
- The President also informed members of a decision by the National Council in February 2015 to have a workshop for AMESA Regional office bearers. This was scheduled for Thursday 2 July 2015.
- In closing the President emphasised the need for local activities where we take mathematics activities to our teachers and learners. We have to make a difference in our classrooms. Our activities will soon be recognised as contributing to CPD points as AMESA was working on becoming a service provider to SACE. The President concluded his address by making a call (in keeping with the Congress 2015 theme) to all Mathematics teachers (especially our AMESA members) in South Africa, irrespective of grade taught, to give a solemn pledge to “*deepen the quality of mathematics teaching and learning*” in our classes.

Minutes of the 21st Annual General Meeting (AGM) of the Association for Mathematics Education of South Africa, held on Tuesday 30th June 2015 at The University of Limpopo, Polokwane

Present:

Vasuthavan Govender (President)
Busisiwe Goba (Vice-president)
Rajendran Govender (Treasurer)
Gary Powell (Secretary)
and delegates as per register

1. Welcome

- The president opened the meeting at 16h35

2. Finalising the Agenda

- The agenda was moved as accepted by Phillip Dikgano and seconded by Manyare Papiki

3. Apologies

- Eddy Thavhanyedza (North West representative to the national council) tendered an apology for his absence
- There were 227 members present, as counted



4. Minutes of the 2014 AGM

- The minutes of the 2014 annual general meeting held in Kimberley were presented by the secretary
- This was moved accepted by Gladys Mokaleng and seconded by OD Thibodi

5. National Council Report on the Activities of the Association

- The annual report was presented by the secretary
- The annual report was moved accepted by Wandile Hlalaleni and seconded by Joseph Mahiba

6. Financial Report and Budget

- Rajendran Govender presented the financial report.
- The finance report was moved accepted by Neil Eddy, and seconded by Khangelani Mdakane

7. President's Report

- The president presented the president's report
- He appealed for the meeting to pause and reflect on the annual report, as much of his report related to the figures from the annual report.

8. Motions

- The president presented the motion that featured on page 27 of the programme "change commissioner for inland revenue to commissioner for South African revenue services"
- This motion was accepted by the meeting.

9. Elections

- The office of the treasurer was open. Rajendran Govender was nominated by the council. There were no other nominations. Rajendran Govender would continue as the treasurer of the national council.

10. General

- One member from North West Province commented on the congress challenges experienced by participants, namely accommodation and memorabilia.
 - o Another member, also from North West Province, reported that she only saw her colleagues from the same branch at the congress each year.
 - o A member complained about issues around securing memorabilia. Stating that members were being directed from pillar to post at the 2015 congress. The member said that they wished to be treated as professionals.
- In response to the comment that members only saw fellow members at the congress, the president insisted that the regional councils needed to be accountable to their members, and ensure that quality activities take place in the regions throughout the year.
- A member from Limpopo suggested that the reports, especially the minutes, be included in the congress package so that members can peruse these.



- Phillip Dikgano, an LOC member, suggested a different time slot for the AGM.
- Themba, from KZN, stated that it is not enough just to say that these challenges relating to the congress will be addressed. He suggested a system of announcements to bring participants up to date regarding proceedings and developments.
- A member from Free State asked about how the congress can support teachers at special schools. He stated that these special schools do not have an ear that listens to them. He asked AMESA to consider being a champion for them in facing these challenges.
- Rajen Govender commented to the meeting that all the concerns which were raised would be addressed.
- Steve Muthige, the deputy congress director, made a few announcements regarding the congress logistics:
 - o He further explained that, with regard to the memorabilia, many people had not responded by the due date, and this has implications for production and sizes
 - o The lunch queue issue had been addressed. He reminded the participants that they should only go to the serving stations at 13h00, and not at 12h40, as this put pressure onto the caterers.
 - o He urged participants to utilise the activity centres. He explained the use of the computers - and that these were for the convenience of the participants
 - o He announced that the cultural evening would commence at 18h30

11. Closure

- The president thanked all those present for their attendance.
- He declared the meeting closed at 18h05.



Gary Powell
SECRETARY



Vasuthavan Govender
PRESIDENT



**AMESA audited financial statement for 2014 presented by Rajen Govender (Treasurer)
at the 21st AGM of AMESA in Polokwane on 30 June 2015)**

Annual Financial Statements for the year ending 31 December 2014

Detailed Income Statement

Figures in Rand	2014	2013
Revenue		
Old Mutual	80,000	550,000
Members fees - cash, cheques, internet transfer	379,401	457,049
Members fees - credit card	66,623	400
Congress	852,854	392,897
Sabinet, Dalro and other	166,362	123,549
	1,545,240	1,523,895
Other Income		
Interest received	72,081	52,975
Operating expenses		
Accounting fees	4,102	-
Auditor's remuneration	16,929	11,514
Bad debts	-	37,930
Bank charges	16,452	10,037
Bank charges internet fees	4,143	2,526
Bank charges credit card fees	8,811	6,607
Congress	185,943	304,917
Council January accommodation/meeting	-	49,742
Council January travel	93,712	99,505
Council June accommodation	99,346	51,407
Council June registration	-	32,125
Employee costs	226,229	170,846
Old Mutual Pythagoras	102,356	168,094
Old Mutual AMESA news	232,082	-
Old Mutual LTM	107,250	30,152
Old Mutual Postage and stationery	22,709	121,035
Old Mutual Congress registration	-	71,546
Old Mutual Congress 1st and 2nd call	47,931	-
Old Mutual Presidential projects	-	13,855
Old Mutual programme/books	26,653	31,162
Printing Stationery	58,557	13,627
Sundry	62,566	21,810
Subsidiaries to regions	122,316	140,318
Telephone and fax	9,067	6,528
	1,447,154	1,395,283
Profit for the year	170,167	181,587



AMESA audited financial statement for 2014 presented by Rajen Govender (Treasurer) at the 21st AGM of AMESA in Polokwane on 30 June 2015)

AMESA NATIONAL Budget 2015

EXPENDITURE	Figures in Rand
Salaries	R 215 000.00
Sundries	R 30 000.00
Printing and stationery	R 25 000.00
Council meetings	R 150 000.00
Subsidies to regions	R 150 000.00
Telephone	R 30 000.00
Bank fees	R 16 000.00
AMESA News	R 100 000.00
Pythagoras	R 100 000.00
Old Mutual LTM	R 80 000.00
Postage	R 18 000.00
Auditor's & Accounting fees	R 20 000.00
Congress (Seed)	R 10 000.00
Excess publication costs	R 50 000.00
Continuous Professional Development	R 100 000.00
TOTAL EXPENDITURE	R 1 094 000.00

AMESA NATIONAL Budget 2016

EXPENDITURE	Figures in Rand
Salaries	R 230 000.00
Sundries	R 30 000.00
Printing and stationery	R 60 000.00
Council meetings	R 180 000.00
Subsidies to regions	R 160 000.00
Telephone	R 30 000.00
Bank fees	R 30 000.00
AMESA News	R 120 000.00
Pythagoras	R 110 000.00
LTM	R 110 000.00
Postage	R 22 000.00
Auditor's & Accounting fees	R 30 000.00
Congress (Seed)	R 10 000.00
Excess publication costs	R 50 000.00
Continuous Professional Development	R 100 000.00
TOTAL EXPENDITURE	R 1 272 000.00

INCOME	Figures in Rand
Approximate Balance from 2014	R 1 979 653.00
Membership	R 500 000.00
Sundry income	R 300 000.00
Sales and advertisements	R 10 000.00
Interest received	R 30 000.00
Sponsor (Old Mutual)	R 80 000.00
TOTAL INCOME	R 2 899 653.00

INCOME	Figures in Rand
Approximate Balance from 2015	R 1 805 653.00
Membership	R 550 000.00
Sales and advertisements	R 10 000.00
Sales and advertisements	R 40 000.00
Interest received	R 30 000.00
Sponsors	R 500 000.00
TOTAL INCOME	R 3 225 653.00

Balance	R 1 805 653.00
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Balance	R 1 953 653.00
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Obituary



Zola Patrick

It is with deepest regrets that we inform AMESA members of the passing away of Zola Patrick, a prominent AMESA member from Gauteng. Zola taught at the South West FET College and was part of a group of members from that College at our National Congress in Polokwane. Zola passed away during the National Congress from natural causes. We formally express our condolences to his family and friends. In a true AMESA spirit of Ubuntu, members rallied around to collect monies for the family. A sizeable amount of money was collected at short notice and handed to his family in Gauteng. We express our thanks and appreciation to all AMESA members who made a contribution in this time of need for Zola's family.

It will be appreciated if we can receive information about AMESA members who have recently passed away in order to honour their hard work in AMESA. A brief description of their AMESA involvement and a recent photograph will be appreciated. Send the information to vicepresident@amesa.org.za.

AMESA NATIONAL COUNCIL 2014 - 2016

Name	Office	Elected	Cell no.	E-mail
Executive				
Vasuthavan Govender	President	2014	082 341 6060	president@amesa.org.za
Busisiwe Goba	Vice-President	2014	073 848 3377	vicepresident@amesa.org.za
Gary Powell	Secretary	2014	083 254 5682	secretary@amesa.org.za
Rajendran Govender	Treasurer	2015	082 451 3648	treasurer@amesa.org.za

Regional Representatives

Alwyn Olivier	Co-opted	2014	083 292 4077	aio@sun.ac.za
Mzwakhe Sokutu	Eastern Cape	2015	073 158 3609	easterncape@amesa.org.za
Annari Milne	Free State	2015	082 767 6653	freestate@amesa.org.za
Freddy Tlhavani	Gauteng	2015	078 458 7006	gauteng@amesa.org.za
Alfred Msomi	KwaZulu-Natal	2015	083 329 9318	kzn@amesa.org.za
Manare Setati	Limpopo	2014	072 102 7796	limpopo@amesa.org.za
Phillip Mokoena	Mpumalanga	2015	083 346 6021	mpumalanga@amesa.org.za
Peace Mojaki	Northern Cape	2015	078 517 5513	northencape@amesa.org.za
Eddie Thavhanyedza	North West	2015	079 493 5599	northwest@amesa.org.za
Desiree Timmet	Western Cape	2014	082 803 9354	westerncape@amesa.org.za





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- Incentives for good performance
- Academic and emotional support
- Good networking opportunities
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CLOSING DATE: 30 MAY

Preference will be given to black South African learners i.e. Africans, Coloured and Indians (i/o of EE Act).

For more information, contact Banele Dondolo at 021 509 2656 or Mambuyisa Rapiya at 021 504 7285.

Email bdondolo@oldmutual.com or mrapiya2@oldmutual.com. www.oldmutual.co.za/careers

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