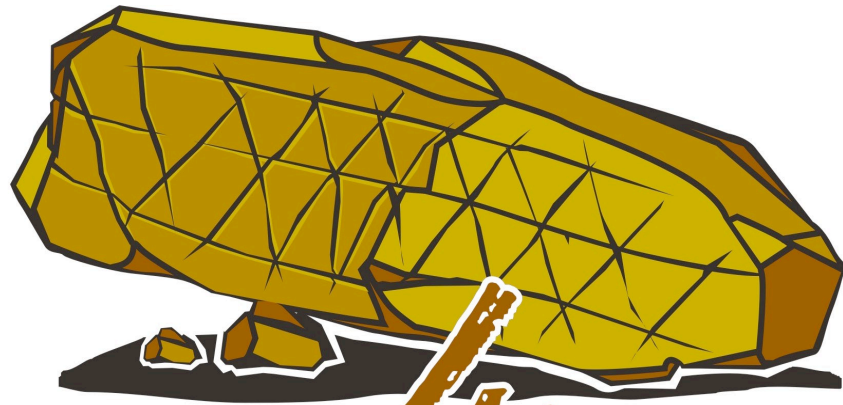
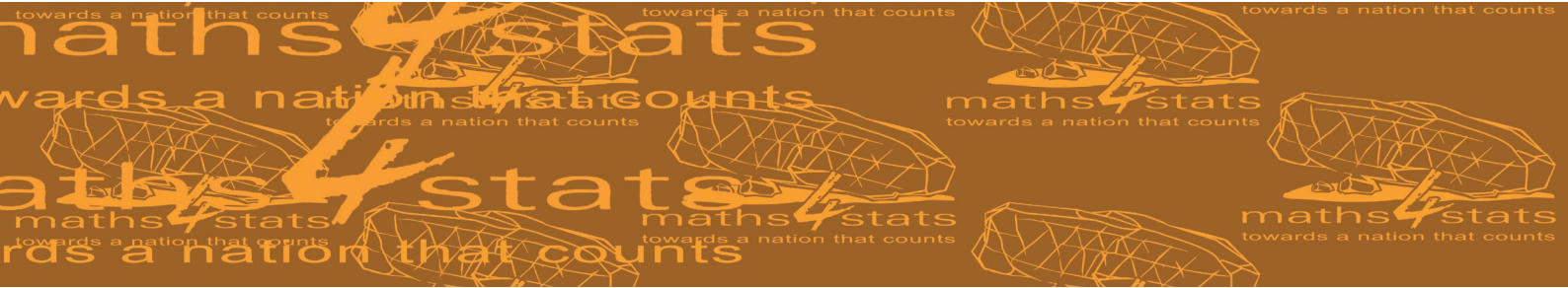


maths4stats
towards a nation that counts



maths4stats
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Informational Booklet



Forward

Themba Mohota

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maths4stats Campaign

About the maths4stats logo



The logo is a visual representation of a large rock supported by a small stone. The large rock depicts the image of an ochre rock discovered in 2002 at the very tip of South Africa where scientists recently uncovered in the Blombos cave, 300 kilometers east of Cape Town, some Paleolithic art that dates back to 70, 000 years. The iron ochre rock decorated with geometric patterns, presumably represented some mathematical or geometrical meaning and methods of counting at the time.

The small stone represents small but systematic efforts to uphold, support and promote a culture of numeracy in South Africa and in Africa as a whole.

A Passion for Maths

Thabo Mohlala

Statistics South Africa (Stats SA) has launched a campaign to enhance the level of statistical interest and literacy among school learners.

The long-term aim of the project is to strengthen the expertise within Stats SA following instances in the past few years where figures were found to be incorrect.



Trevor Manuel, the Minister of Finance, launched the campaign in Midrand, north of Johannesburg, saying that “ordinary people must have trust” in the information they receive from Stats SA.

Called maths4stats, the campaign would tap into the skills of the existing pool of mathematics teachers to encourage more learners to study statistics. The campaign fits neatly into the government’s efforts to promote maths and science as gateway subjects.

As part of the campaign, Stats SA ran a competition for grade 10 to 12 mathematics teachers to identify educators who are passionate about the subject.

The competition attracted 600 entrants and only 26 teachers made the grade. The winners formed part of a South African delegation attending the seventh International Conference on Teaching Statistics held in Brazil.

Hilgard Matthews of Stats SA said the winners were identified after an intense and rigorous selection process. “The competition was advertised in all major national papers, after which teachers had to sit for exams in 30 centres across the country,” said Matthews.

He said the test component of the exam was not meant to “catch them out”, but was based

on “simple, basic stuff such reading and interpreting graphs”.

This was followed by a short essay, where teachers had to tell Stats SA what the benefits of participating in the project would be for them and their schools.

“Once this was done, Stats SA interviewed them to see if they were informed about the socio-political dynamics of the country and, more importantly, to see if they are passionate about statistics,” Matthews said.



Pali Lehotla, Stats SA’s chief statistician, said the event marked the fulfilment of the tasks Manuel gave to Stats SA to increase the number of “people who have passion for maths and statistics”.

Manuel echoed Lehotla’s sentiments, saying that the 26 teachers are part of a nucleus that would help “enlarge and deepen the reservoir of those who have passion for numbers”.

“Go there knowing that you represent the future and that you are igniters of passion for numbers,” said Manuel.

Matthews said the campaign would run for three years and it “aims to bring the mathematics and education communities together to work in collaboration, with the purpose of developing mathematics education and strengthening the statistics component of maths”.

Article taken from Mail and Guardian - www.mg.co.za

Newsletter

maths4stats: Towards a Nation that Counts

Pali Lehohla



It gives me great pleasure to present to you a campaign that in so many ways for us represents the small but significant role we too can play in the democracy of South Africa, given the lessons of transition in South Africa and its system of official statistics.

The maths4stats campaign is a building block towards making real a vision I have always held in my tenure as Statistician-General for building capacity in a nation that for decades was deliberately denied human rights to a meaningful education.

When the old Central Statistical Services became Statistics South Africa, the challenge South Africa faced was building capacity in mathematics and statistics. Our work programme for 2006/7–08/09 realises that human capacity is a major challenge, which needs us to address the development of an education and training programme at Stats SA specifically, and in South Africa generally.

In collaboration with the South African Statistical Association (SASA) and the Association for Mathematics Education in South Africa (AMESA), Statistics South Africa has embarked on a series of activities to enhance statistical development in the country.

The Maths4stats campaign aims to encourage the development of mathematics education as an important bedrock for statistics.

But, given the unique challenges that South Africa faces in light of its unsavoury history that affected the education of many South Africans, the climate of appreciation alluded to earlier has to be maintained through rigorous concerted cooperation between Statistics South Africa as the lead agency in this initiative, the Department of Education, the South African Statistical Association (SASA), and the Association of Mathematics Education in South Africa (AMESA).

I have constituted a core team to roll out the campaign in the endeavour to work cooperatively towards improving and enhancing statistics education in South Africa. The core team comprises its majority from Statistics South Africa, reflecting the diverse but nevertheless critical mass of expertise in teaching in mathematics and statistics education that we have in the organisation.

This campaign requires a collective effort and I am looking forward to working with all partners towards undoing a legacy that will have far-reaching implications for the people of South Africa.

Comments from a National Trainer

Delia North



Due to the history of apartheid, South Africa faces many unique challenges, in particular, the after effect of many citizens deliberately having been denied a meaningful mathematics education. The maths4stats project aims to restore numeracy and statistical literacy, laying the bedrock for economic literacy of the nation.

By including statistics (data handling) in the school syllabus, South Africa joined a world wide trend, as statistics has been taught at school level in many countries for many years.

Being involved with the maths4stats campaign from inception has offered me the privilege of being able to play an active role in setting systems in place to potentially bring about statistical literacy of school leavers in South Africa.

My involvement has ranged from assisting with the defining of the data handling content of the school syllabus, to the writing of training materials, the running of workshops for school teachers and ultimately, assisting with the roll out of the maths4stats project.

The maths4stats project has delivered a group of highly trained educators, spread around the country, who in turn plan the running of data handling workshops in their respective provinces. All involved with the maths4stats campaign can testify to the fact that teachers attending the workshops immediately see the use of statistics in their everyday life and become positive and energized about teaching the data handling content.

South Africa, like many countries in the world, has a dire shortage of statisticians. It is my dream that the maths4stats campaign will result in improved teaching of statistics at school level, potentially resulting in more school leavers entering tertiary institutions with a positive attitude towards statistics and, above all, a strong desire to learn more about statistics.

maths4stats Project move on



The maths4stats Project is one of Statistics South Africa's national projects initiated to encourage the development of mathematics education. This in turn forms part of statistics career development. It represents the effort to restore numeracy and statistical literacy in South Africa.

The ultimate goal of the project is to enable learners to acquire sufficient skills in statistics and mathematics in order to do further training in the field of science and engineering.

In working towards achieving this goal, Statistics South Africa, in collaboration with the National Department of Education, hosted Mathematics and Mathematical Literacy Subject Advisors' Content Workshop. It was a week-long workshop held at Diep in the Berg Conference Centre from 21-25 April 2008. The main purpose of the workshop was to equip the subject advisors with data handling and probability skills so that they could be in a position to transfer the acquired skills to the mathematics teachers.

They in turn will impart the knowledge to the learners in their respective provinces. The concepts have been introduced as part of the Learning Outcomes 4 (LO4) of the new school curriculum.

A total of about 130 mathematics subject advisors from different provinces attended the workshop. Ms Jackie Scheiber of RADMASTE Centre, who is also an associate at the University of Witwatersrand gave a two and a half day training on Data Handling. Professor Delia North, head of the School of Statistics and Actuarial Science at the University of Kwazulu-Natal provided training on probability concepts and theory.

Elizabeth Mosane from maths4stats project says "It was a hands-on workshop with participants given real life practical classroom examples. In order to have a good understanding of the concepts. All participants were assessed at the end of the training and will be awarded with certificates. The provincial maths4stats coordinators, met with the subject advisors to discuss a way forward on how the training of teachers should be conducted," she concluded.

Except taken from PULSE fourth edition 2008

About maths4stats

What is the maths4stats project?

The maths4stats project is one of Statistics South Africa's series of activities initiated to encourage the development of mathematics education, which in turn is an important bedrock for statistics. It represents the effort to restore numeracy and statistical literacy in South Africa.

Why maths4stats?

One of the challenges that South Africa faces is to build capacity in mathematics and statistics. Statistics South Africa, as a primary user of mathematics and statistics graduates in particular, is facing a skills shortage, which in the short term is critical and which will increase in the medium to long term.

Most of the learners at school level have a fear of taking mathematics as a subject because of the myth attached to the subject that it is difficult. This impact on the number of students who take statistics as a course at the university since mathematics is a prerequisite for statistics at university level.

Also, for many people, approaching a course in statistics for the first time is rather a scary experience. The teaching of statistics has now been introduced at school level and the problem is that many of the South African mathematics teachers did their teacher training only in mathematics. This poses a challenge of taking them through training in statistics so that they can be able to teach the learners. This led to the conception of the maths4stats project which is aimed at the development of mathematics education that in turn is an important source for statisticians.

Where did it start?

It all started in July 2002 when Statistics South Africa, together with the South African

Statistical Association (SASA) and the Association of Mathematical Educators of South Africa (AMESA), co-hosted the 6th International Conference on the Teaching of Statistics (ICOTS-6) held in Cape Town. This conference is organised every 4 years by the International Association of Statistical Education (IASE), which is a section of the International Statistical Institute (ISI).

ICOTS-6 kick-started an outreach to local mathematics schoolteachers. This endeavour recognised the cross curricula need for data handling as an anticipated outcome, resulting in vast amounts of statistical material being included throughout the various phases of the new school curriculum. This led to the conception of the Maths4stats project where mathematics and statistics teaching interact to address the need for statistical development in South Africa.

Project goal

The goal of the maths4stats project is to enable learners to understand that statistics is part of everyday life, and to enable them to acquire sufficient skills in statistics and mathematics to enter into further training in the science and engineering fields.

Project objectives

- To create a specialised body of educators with a passion for Mathematics;
- To instil love and interest for mathematics and statistics in educators and learners;
- To ensure that syllabi are relevant to South Africa, and yet still meet international standards and
- To create a population that is enthusiastic about statistics.

As part of its campaign to develop the culture of mathematics and statistics education, Statistics South Africa ran a competition for mathematics educators teaching from grade 10 to 12 throughout the country. Forty-nine winning educators were identified and attended the International Conference for Statistics (ICOTS-7) held in Brazil from 2 to 7 July 2006. These educators form the nucleus of the project and have so far been trained on probability and data handling so that they can be in a position to train others in their respective province.

Meetings were held to plan for the roll-out of the project. Participants in the meetings comprised Statistics Council members, AMESA representatives from different provinces as well as Stats SA key staff members.

To date, Stats SA has employed project representatives (maths4stats co-ordinators) in different provinces that will, together with the 49 educators, assist in the roll-out of the project in the provinces. Seven coordinators have been appointed and the remaining two (North West and Mpumalanga) are in the process of being recruited. In collaboration with the Department of Education, Stats SA will be assisting the department in the training of 152 mathematics subject advisors who will work together with the Maths4stats coordinators and Maths4stats teachers to train other teachers in the respective provinces. The training will take place during April 2008.

What went wrong?

For South Africa, the urgency to develop mathematics and statistical education has been spurred by the after-effects of the interruption of a historically founded culture of counting.

The Bantu Education Act (Act No. 47 of 1953) became the pillar of the apartheid project; a piece of legislation intended to separate black South Africans from the main, comparatively very well-resourced education system for whites. Authored by Dr H F Verwoerd (then Minister of Native Affairs, later Prime Minister), it established a Black Education Department in the Department of Native Affairs.

They were tasked with the compilation of a curriculum that suited the 'nature and requirements of the black people. Mathematics was not seen as a part of this curriculum as Dr Verwoerd who, on 17 September 1953, in addressing Parliament was quoted as saying, 'What is the use of teaching a Bantu child mathematics when it cannot use it in practice'. Thus Bantu Education was introduced in 1954, consciously de-emphasising the teaching of mathematics and science.

This cornerstone of the apartheid ideology in practice wreaked havoc on the education of black people in South Africa, and deprived and disadvantaged millions for decades. Its devastating personal, political and economic effects continue to be felt and wrestled with today because of the destruction of a generation of scientists, mathematicians and statisticians in South Africa. Further, the legacy of decades of inferior education (underdevelopment, poor self-image, economic depression, unemployment, crime, etc.) has lasted far beyond the introduction of a single educational system in 1994 with the first democratic elections, and the creation of the Government of National Unity. The challenge South Africa faces is to build capacity in mathematics and statistics.

maths4stats

Provincial Roll-Out in action



FET (further education in training) workshop in Free-State



Jacky Scheiber conducting FET workshop with subject advisors



GET (general education and training) workshop in Pretoria



GET (general education and training) workshop in Pretoria



FET training in data handling in Kwazulu-Natal



Take a Girl Child to Work Project



Maths Week on the Edu-Train



FET training in probability in Kwazulu-Natal



FET training workshop conducted by Yvonne van der Walt



maths4stats Western Cape Launch with MEC of Education Yusuf Gabru

Stakeholders

Project Sponsor	Ms Nombuyiselo Mokoena
Project Manager	Mr Themba Mohoto
Project Team	<p>National Coordinator</p> <ul style="list-style-type: none"> - Elizabeth Mosane <p>Provincial Coordinators (9)</p> <ul style="list-style-type: none"> - Ms T Tikolo (Gauteng) - Mr T Mukhalinga (Limpopo) - Ms D Timmet (Western Cape) - Ms Y van der Walt (Eastern Cape) - Mr L Mkwenkweni (KwaZulu-Natal) - Ms L van Rensburg (Free State) - Mr A Mokhobo (Northern Cape) - Mr J. Majidi (Mpumalanga) - Mr E Moseki (North West) <p>National Trainers (2)</p> <ul style="list-style-type: none"> - Prof D North - Mrs J Scheiber <p>Department of Education</p>
Project Customer	<p>Mathematics teachers</p> <p>Learners</p>

AMESA National Council Report

The Maths4Stats Campaign

Mbulaheni Nthangeni

Background

In 2002, South Africa hosted the 6th International Conference on the Teaching of Statistics (ICOTS 6), in Cape Town. Statistics South Africa had just released the results of the Census@school which was a publicity tool for the Census 2001. At the ICOTS6 Conference, Statistics South Africa (Stats SA) and the South African Statistical Association (SASA) sponsored a number of Mathematics teachers (mostly Subject Advisors) to attend the conference. They were taken through a workshop on the teaching of the statistics component of the new Mathematics curriculum.

After the conference the workshop continued but they were mostly in KZN, and they were conducted by Prof Delia North, from The University of Kwazulu Natal, AMESA in KZN organised these workshop.

Sometime last year, Stats SA with the help of SASA ran a Mathematics Educator Competition under the maths4stats campaign, to re-launch the process of workshop[s] that started after the ICOTS6. Twenty eight of the teachers who participated in the competition were sponsored to attend the ICOTS7 conference held in Salvador, Brazil in July 2006. The idea was that these teachers will be part of the process of rolling out the maths4stats campaign.

1. What happened in Brazil?

After the conference in Brazil, the teachers who attended the Brazil conference plus an additional 20 runners up (making it 48) were taken through a workshop on Data Handling (Learning outcome 3 or 4 depending on whether it is at GET or FET band respectively). The last workshop on Data Handling was on 23-25 September 2006. Here they were also “workshopped” on the use of calculators donated by Casio. (The manual used at these workshops was prepared by Prof Delia North and Jackie Scheiber from Radmaste Centre, Wits), Stats SA offered to pay AMESA membership, for those who were not members.

Stats SA held a meeting with officials from the Department of Education on 12 October 2006, to brief them on the Maths4Stats campaign and the plan to roll it out to the provinces.

Stats SA sponsored the 48 teachers to attend the annual SASA conference in Stellenbosch from 1-3 November 2006. A special workshop was conducted for them at the conference on the use of Excel and PowerPoint. They were also provided with the 2001 Census@school results to conduct analysis through Excel and PowerPoint.

The first meeting to discuss the roll-out was held at the SASA conference in Stellenbosch. A follow-up meeting was held at the Birchwood Hotel on 25 December 2006. A number of stakeholders were invited to attend the meeting: AMESA, DoE, SASA and Stats Council. After the meeting a Business Plan on the roll-out was prepared and presented to the stakeholders at a meeting held on 13 December 2006, at the Holiday Inn, Garden Court, near the OR Tambo Airport.

The Plan proposed that Stats SA should appoint nine Provincial Co-ordinators (one in each province) and a National Co-ordinator to roll-out the Maths4Stats campaign.

2. The Role of AMESA

The Business Plan proposed that AMESA should continue to assist with organising the workshops at the provincial level. This was found to have worked well with the workshop in KZN. The current teachers in the Maths4Stats campaign will assist the Provincial Trainers with conducting the workshops. The teachers will get further training so that they can later conduct workshops without the Provincial Trainers.

For the campaign to succeed support by AMESA is crucial. Stats SA as the driver of the campaign, request that AMESA National Council supports the project and to ensure that the AMESA Provincial Councils give their full participation.

3. Future Plans

Stats SA is in the process of recruiting the Provincial Coordinators and National Coordinators. An advert for the Provincial Coordinators was sent out in the papers on 11 February 2007. An advert for the appointment of the National coordinators will be sent out soon.

A meeting was held with the Chief Director, FET Schools, DoE on 7 March 2007, to discuss their participation. Further discussions will also be held with the Department of Science and Technology whose interest is in both mathematics and science.

AMESA national president was since informed about the 2007 workshop with teachers schedule for end of March 2007. By the time you read this news the participating teacher would have been duly informed.
- National President of AMESA





maths4stats
towards a nation that counts

maths4stats campaign:

working towards training mathematics teachers on statistics through training programmes, workshops and study tours, to better succeed in educating learners

- Developing a culture of maths4stats education
- Producing a cadre of statistics for a democratic nation
- Promoting a statistically literate society
- Enabling learners to become mathematically and statistically literate to enter into further training in the science and engineering fields
- Towards better statistics for better results