

THE LEGACY
of Charlotte
Maxeke

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COUNTING
on the need
to know

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COLUMN
The UKZN
Griot

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A HUB OF SCIENTIFIC RESEARCH

UKZN hosted the launch of National Science Week on July 29. Learners visited University Departments throughout the week.

WORDS: SITHEMBILE SHABANGU PHOTOS: RAJESH JANTILAL

The HIV and AIDS pandemic in our country has challenged our scientists to find solutions that will prevent, control and ultimately eradicate the virus. Ground breaking work in preventing infection has been done here at the University of KwaZulu-Natal and has been recognised internationally.

These were the words of the Minister of Science and Technology, Ms Naledi Pandor when she addressed primary and high school learners at the launch of National Science Week on the Westville campus. National Science Week ran from August 1-6.

The aim of National Science Week is to inspire learners to study mathematics and science at school. The theme this year was “science for economic development”.

‘Sometimes we need to be reminded that economic development and science are very closely aligned. South Africa has



Education Officer for the National Zoological Gardens, Mr Justice Bilankulu, shows the Minister of Science and Technology, Mrs Naledi Pandor, a rhino horn which formed part of his organisation's exhibit. Accompanying Mrs Pandor is UKZN Vice-Chancellor, Professor Malegapuru Makgoba, and KwaZulu-Natal Premier, Dr Zweli Mkhize.

lagged behind many countries in science achievements and innovation. Our country needs to at least quadruple the number

of senior researchers, invest millions in science performing institutions and support schools to produce excellent students in Mathematics and Science subjects,’ said Pandor.

More than 70 schools around KwaZulu-Natal attended the launch and more learners visited different Departments throughout the week. A series of public lectures by leading UKZN lecturers was also held.

‘The University of KwaZulu-Natal is a strong hub of scientific research in South Africa, and I am grateful to UKZN for hosting the launch of the National Science Week 2011,’ said Pandor.

UKZN Vice-Chancellor, Professor Malegapuru Makgoba told the learners that this is an opportunity for young South Africans to excel. ‘You have no excuse not to succeed.’

‘The Centre for Science Access and the UNITE Programme at the University are

two of the country's leading access programmes which provide educational opportunities to undergraduate students from disadvantaged backgrounds,’ Makgoba said.

KwaZulu-Natal Premier, Dr Zweli Mkhize said that it is important for learners to be encouraged to study further and do higher degrees. He told the learners that it is possible for young people who come from poor backgrounds to progress.

The students had the opportunity to view different exhibits by UKZN, other Higher Education Institutions and companies. Ms Wendy Mabaso from Nkosibomvu Secondary in Tongaat said that she learnt a lot about the different careers that she can pursue. She added she felt encouraged to work hard and to go to university after matric.

Mr Kureshlen Moodley and Mr Nicolas Lognath from Glenwood High School agreed that they learnt about things they didn't know existed. Moodley said that the Microbiology lab was an eye opener. Lognath said that he saw much more than he expected and learnt that every Department is linked to the other.

‘I hope that your participation in National Science Week will inspire you to be the innovators and scientists of the future. I hope that you will be the generation that gives substance to a knowledge-based economy in South Africa, the region and the continent,’ Pandor said.

Entertainment was provided by the UKZN Choir and Mr Derek Fish from the University of Zululand who demonstrated the connection between science and music. The learners were also fascinated by the robot and laser show put on by the Council for Scientific and Industrial Research (CSIR).

See pages 4 and 5 for more pictures.



Head of the School of Statistics and Actuarial Science, Professor Delia North, explaining statistics concepts using a roulette wheel.

Umkhando uqwashise ngokwakhiwa komphakathi onekusasa eliqhakazile

AMAGAMA NESITHOMBE: LUNGA MEMELA

Umkhando obubanjwe yi-University Teaching and Learning Office (UTLO) e-UKZN uhanjelwe abafundi nezifundiswa, lapho uMphathi weFaculty of Education (ezeMfundo) uSolwazi Michael Samuel ethule inkulumo ebinesihloko esithi "HIGHER EDUCATION CURRICULUM DIRECTIONS: Lessons from Global Comparisons".

Kulomkhando uSamuel ubuze ukuthi, 'Yiliphi izinga lomphathi esifisa ukulakha?' Ebheka umlando wabafundi baseTurkey abebekade bezoqeqeshelwa ubuthisha kwezemfundo eNingizimu Afrika, uSamuel unabe kabanzi ngokutholwe yilabafundi. Uthule iziqhathaniso ngemfundo, amasiko kanye nemfundiso yakuleli, ehlaziya ngokunjalo indlela *iGülen Movement* yaseTurkey chambisana ngayo nemfundiso nokuziphatha kwamaSulumanekwelasTurkey. Ecoshela kwizolokotho ezinhlle zakuleli emuva kwezikhathi ezidlule zobandlululo, uSamuel uqhathanise ngezilokotho ze*Gülen Movement*, lapho ebesethi miningi imizamo



USolwazi Michael Samuel kanye noDkt Rubby Dhanpath we-UTLO ngesikhathi bethatha imibuzo emuva komkhando.

esengenzeka ekuthuthukiseni ezemfundo eNingizimu Afrika. Uthe lezi zilokotho zisikhumbuzisa ukuthi ubuntu nokuphokophelela yizona zinto ezizosiyisa phambili kakhulukazi ekucobelaneni ngolwazi. Uthe ubuntu kumele bandele wonke umuntu, kungakethi zigaba. USamuel uphinde wenaba ngemigomo ye*Gülen Movement*

ekubalwa kuyona ukuzinikela, ukubambisana ekwakheni isizwe esingcono, kanye nemfundo yamahhala yawonkewonke, eyakhelwe ukuthuthukisa isizwe. Abafundi baseTurkey ababefunda kuleli baqhamuke nesisho esithi 'Ngifuna ukuba yisibani esingacishi' esigqunguzela ukuthuthukiswa kwezizukulwane

nezizukulwane ngokwemfundo nangobudlelwano. Labafundi bakuthokozelile ukushiya uvo lwabo ngabakufunde eNingizimu Afrika.

'Abantu balapha badinga ukunyusa izinga lokuzimisela,' kuqwashisa abanye babafundi abamangazwe ukuthi linye vo ithuba lokuphumelela kumatikuletsheni kuleli. Abanye babonge abafundi nabafundisi base-UKZN abebhelezi benosizo nobudlelwane okubasize bazizwa besekhaya, bakwazi ukubhekana nezifundo njengoba kunomehluko kunokufundela kwelakubo eTurkey.

Kube nemibono nemibuzo ephakanyiswe kulomkhando: 'Mungakanani umthelela wesimo somnotho sakuleli ezingeni lemfundo esinalo' nokuthi 'Kungabe abanye bothisha esibakhiqizayo bakumele na ukubhekana nenselele yokufundisa isizwe sakuleli?' Yiziphi izinqinamba ezenyelisa ukusizana nokuthi umphakathi uyisukumele, uyikhuthaze imfundo?

Ukuzimisela, ukuqeqesheka kanye nozwelo kube iyona nhlobo kathisha egqunguzelwayo

kulomkhando. UDeputy Vice-Chancellor: Teaching and Learning e-UKZN, uSolwazi Renuka Vithal uxwayise ngokuthi noma ngabe lokhu kubalulekile, akukho okudlula ukuthi uthisha kumbe umfundisi abe ngoqeqeshekile novelele uma kuphathwa igama le-UKZN noma kwamukelwa abafundi abasazofundela ubuthisha.

Ukuzikhandla, ubuchwepheshe kanye nokuba nolwazi olubanzi kudikidwe kulomkhando.

USamuel uthe akukona nje ukuphumelela ngamalengiso, ukunyusa inani labafundi abaphumelelayo kumbe ezinye izigaba zempumelelo okumele kuqashelwe. Ubale okuningi okuhlola ingaphakathi likathisha, okuthi uma kulungile kwandise impumelelo yabafundi. Ugxile kakhulu ekwakheni isizwe ngokusizana. Umkhando uphinde wabungaza wabonga bonke abafundisi nothisha asebevele beqhuba ngendlela encomekayo uma benza imisebenzi yabo.

See Page 3 for the English translation of this article.

Carbon dioxide emissions and global warming

UKZN Chemical Engineering Professor, Deresh Ramjugernath, kicked off a National Science Week public lecture series with a presentation titled: "Carbon dioxide capture, storage...and uses".

WORDS: VICKY CROOKES PHOTO: SUPPLIED

Carbon dioxide emissions and their effect on global warming have received world-wide scrutiny and attention over the past two decades. This is a concern, not just for scientists and engineers, but is a topic of great interest and debate amongst the general public.

Hosted by the Dean of Science and Agriculture, Professor Deo Jaganyi, and funded by the Department of Science and Technology, Ramjugernath's lecture presented the facts about carbon dioxide (CO₂) emissions, the status of the technology for its reduction, whether it is technically and energetically feasible to capture it, as well as the storage and possible uses of CO₂.

An internationally eminent researcher, Ramjugernath started his lecture by advising the audience to exercise prudence in summarily attributing global warming to carbon dioxide emissions. He said there are arguments for and against the causes of global warming and that, 'as scientists, we need to look at all the information available to



Professor Deresh Ramjugernath.

us and make up our own minds.' According to Ramjugernath, approximately 82 percent of the increase in the concentration of carbon dioxide in the atmosphere over the last century has happened in the past 50

years. However, changes in levels are cyclical, constantly increasing or decreasing and essentially, this has been the case for centuries. What makes CO₂ a "nasty" molecule is its ability to act as a barrier, keeping heat

within the atmosphere. Other molecules, such as methane which is generated from gas and oil wells and livestock, are also contributors. Ramjugernath noted that although he is not advocating that CO₂ does not cause global warming, 'there is more to it than just CO₂ and methane... the real issue is global warming potentials of a number of chemical species.'

Regardless of the theories and suppositions for and against global warming, the facts about carbon dioxide emissions in South Africa are alarming: of the top 30 CO₂-emitting power plants in the world, eight are located in South Africa; the South African power sector is the 9th largest CO₂ emitter in the world and Eskom is the second largest energy company producer of CO₂ in the world.

Possible solutions include removing the CO₂ before it reaches the atmosphere. Ramjugernath is confident in the potential for CO₂ capture. He said that theoretically it would be possible to capture and sequester approximately 60 percent of

South Africa's CO₂. However, at this time, it is unfortunately neither economically nor technologically viable. 'If we could capture it, we could store it as there are sites in South Africa where it could be sequestered,' said Ramjugernath.

The possible uses of CO₂ are abundant, ranging from mineral carbonation and the production of polymers and other organic compounds to plasma cracking; the production of fuel, if combined with hydrogen; and artificial photosynthesis.

Ramjugernath's Thermodynamics Research Unit is at the forefront of investigating different CO₂ capture technologies which, although premature to predict at this stage, are starting to show great promise. However, even though his team of researchers is fast developing expertise in this area together with their national and European collaborators, there is 'no quick fix solution'. Ramjugernath therefore highlighted the urgent need for the country to look at alternate fuel sources which do not produce CO₂.

UTLO Seminar examines teacher training

WORDS & PHOTO: LUNGA MEMELA

A seminar hosted by University Teaching and Learning Office (UTLO) on "HIGHER EDUCATION CURRICULUM DIRECTIONS: Lessons from Global Comparisons" presented by the Dean of the Faculty of Education, Professor Michael Samuel attracted a host of academics and interested students.

'What is the quality of the society we want to produce?' was the key question Samuel raised. Using a life history methodology, he traced the experiences of a group of Turkish students training as teachers in the South African Higher Education system. The presentation analysed the influence of culture, wider societal formations and the role of philosophical approaches to the valuing of teachers, especially the faith-based Gulen Movement which challenges the dominant caricatured notions of Muslim identity and values. He introduced his seminar as 'a comparative study on how others view us'.

Samuel made comparative links between the reconstructive agenda of post-apartheid South Africa and the Gulen Movement, providing perspectives on what teacher preparation is and could be in a transforming South African education system. Their insights suggest service to humanity through deep commitment and caring, but rooted in the notions

of excellence and expertise in disciplinary knowledge.

'These international insights provide a means to question the goals for our South African education and the training of teachers,' argued Samuel, lobbying for the idea of individuals serving one another across multiple sectors of society, be it civic, public or private. He also outlined other key principles of the Gulen Movement which include proactive engagement and a positive outlook geared towards 'bettering society', and an inclusive and non-economical education which is non-hierarchical, non-adversarial, and not contended, designed for mass appeal.

"I want to become a burning candle" was the theme expressed in the narratives communicated by the Turkish students. Driven by the idea of passing the candle down to your students and empowering the next generation, the students reported on some eye-opening strengths and weaknesses in the South African Higher Education system.

'People here need to get a lot more dedication,' reported some while others marvelled at the stringency in the system, where you really only have one shot at passing grade 12, and you have to do it well. They also reported that staff and students from UKZN were always willing to assist them overcome the challenges they

faced being away from home and academically.

Some of the questions that were raised as nationwide concerns included: 'Is there an economic brutalisation to the South African education system' and 'Are we producing quality teachers but who may lack social values and sense of service?' Are cultures of entitlement foreshadowing attitudes of service and community responsiveness?

Commitment, competence and caring were highlighted as the crucial qualities any educator should have. Deputy Vice-Chancellor: Teaching and Learning at UKZN, Professor Renuka Vithal warned that although all three qualities are essential, competence must always be considered when looking at student enrolment into the University's programmes. Dedication, expertise and knowledge were also central themes of discussion during the seminar.

'Quality learning is not only about obtaining test scores, improving pass rates or performativity cultures,' said Samuel. He noted that it is also about quality thinking, commitment to development and promoting competence, capability and moral, ethical, socio-political and cultural commitment.

This is an English translation of the article in isiZulu on Page 2.



Dean of Science and Agriculture, Professor Deo Jaganyi and Professor Colleen Downs with some of the enthusiastic learners who attended Downs' National Science Week lecture on Nile crocodiles.

National Science Week lecture puts the spotlight on crocs

One of the University's top published woman researchers, Professor Colleen Downs, captivated her audience with her public lecture titled: "Nile crocodiles in north-eastern KwaZulu-Natal".

WORDS & PHOTO: VICKY CROOKES

Part of the country's celebration of National Science Week, the lecture revealed the vulnerability of the Nile crocodile and the urgent need to study it in order to facilitate long-term population viability.

According to Downs, 'Crocodiles are important indicators of the overall health of ecosystems and are sentinel species for environmental contaminants.' She said that most of the research on the Nile crocodile in Zululand was conducted by Dr Tony Pooley about 50 years ago; this means it is necessary to conduct new research on this important species which is under threat.

The Zululand Nile Crocodile Project currently involves four UKZN postgraduate students from the School of Biological and Conservation Sciences: Mr Xander Combrink, Mr Garth Champion, Mr Peter Calverley and Mr Jon Warner. They are working at three sites concurrently: Lake St Lucia, Ndumu Game Reserve and the Pongolapoort Dam. This strengthens the study as they are focusing on three different habitats and the viability of three subpopulations. The project is supported by Mazda Wildlife, the Hans Hoheisen Charitable Trust, the Bateleurs, Ezemvelo KZN Wildlife and the iSimangaliso Wetland Park.

The Nile crocodile population in the iSimangaliso Wetland Park is globally important, not only due

to its size – previously estimated at over 1 000 adult individuals – but because it is the largest and most secure population in an estuarine environment throughout the species' range. However, the challenges of drought and the receding lake waters in the St Lucia region, not to mention human interference, have taken their toll on these endangered reptiles.

Downs' study seeks to determine if the Nile crocodiles are a viable population in KwaZulu-Natal. Her research team is concerned with different aspects such as: how often they are breeding and if they are successful, the impact humans are having on their lives, their diet and foraging habits and their habitat use. The data will be used to develop detailed management plans for the protection and long-term management of crocodile populations and aquatic ecosystems.

Downs explained that an unusual aspect of the study has been the discovery of lead contamination in some of the crocodiles. Nile crocodiles ingest stones to aid with digestion; however, some of them have been ingesting large sinkers instead. In fact, the researchers have found 'one the highest levels of blood lead concentration ever recorded in an animal,' said Downs. This has precipitated a working relationship with Onderstepoort and the University of Pretoria's Faculty of Veterinary Science.

SIFE-UKZN are the National Champions

UKZN's Students in Free Enterprise (SIFE-UKZN) has done it again, winning the SIFE-South Africa National Championship 2010/2011.

WORDS: LUNGA MEMELA PHOTO: SUPPLIED

SIFE-UKZN has scooped the award four times and represented South Africa in Paris, France (2006), and Singapore (2008) as well as at the SIFE World Cup in Berlin, Germany (2009). SIFE-UKZN is ranked in the top 16 SIFE-teams out of more than 1 500 teams in the world.

Represented by 63 members who are based on the Edgewood, Howard College, Pietermaritzburg and Westville campuses, SIFE-UKZN competed against 26 SIFE teams from South African universities and colleges. SIFE-University of Zululand, SIFE-Durban University of Technology, and SIFE-University of Fort Hare were second, third, and fourth runners-up respectively.

SIFE-UKZN will be representing South Africa at the SIFE-World Cup competition in Kuala Lumpur, Malaysia from October 3-5, where they will be competing against 38 other SIFE teams from across the world.



SIFE-UKZN students at one of their agricultural community engagement projects.

'SIFE-UKZN is humbled by the wonderful opportunity to represent the country in Malaysia,' said SIFE-UKZN President, Ms Qhelile Nyathi.

SIFE-UKZN undertakes projects in KwaZulu-Natal as well as agricultural projects in Zimbabwe and an entrepreneurship project in Swaziland. SIFE-UKZN is the winner of the prestigious eThekweni Municipality Mayoral Award: Community Development Category 2010.

At the national competition,

different SIFE teams presented their community development programmes that address economic, social and environmental issues. The teams had to demonstrate that beneficiaries' standard of living and quality of life had been improved and that they had been empowered, as well as ensuring the sustainability of its own team and the projects. Finally, the team had to show that it had applied business and economic concepts and an entrepreneurial approach.

UKZN Celebrates



Students from the School of Biological and Conservation Sciences with their wide range of display items.



Dr Leigh Jarvis from Electronic Engineering demonstrates the properties of liquid nitrogen.



Kingsway High School learners experimenting with plasma balls in Science and Agriculture's Science & Technology Education Centre.



Students interacting at the Optometry display.



Chemistry conducting experiments for the learners.



High school learners interacting with members from the Centre for Science Access.



Learners constructing rocket-propelled balloon cars.

National Science Week



With the help of a learner, UKZN astrophysicist Dr Megan Govender, performs a physics experiment at the launch of National Science Week.



Winners of one of the daily science quizzes.



Learners from Holy Family College were enthralled by activities in the microbiology laboratories.



(left-right) The Minister of Science and Technology, Mrs Naledi Pandor, UKZN Deputy Vice-Chancellor: Teaching and Learning Professor Renuka Vithal and Head of the Science Centre at the University of Zululu, Mr Derek Fish examine one of the models on display.



Experiencing the magic of Chemistry.



A Durban High School learner operating his rocket-propelled balloon car.

PHOTOS: RAJESH JANTILAL, VICKY CROOKES, SALLY FROST

The Legacy of Charlotte Makgomo Maxeke

Dr R Simangaliso Kumalo reflects on the forgotten legacy of the pioneer of the struggle for women's empowerment in South Africa.

On August 9, I watched with great interest the Women's Day celebration held at the Peter Mokaba Stadium in Polokwane. The stadium was packed to capacity with women in celebratory mood. Then I heard the Minister of Social Welfare and Development, Ms Bathabile Dlamini, who was directing the programme, shouting "Viva Mama Bertha Gqola Viva!" to which the stadium roared in a response, "Viva!". "Viva Albertinah Sisulu Viva!" she continued, to which the stadium roared again, "Viva!". She went on, "Viva Mama Lillian Ngoyi Viva!", and the crowd roared, "Viva!" "Viva Charlotte Maxeke Viva!", to which the crowd roared back "Viva!", but with lesser enthusiasm than before.

To my mind, one cannot blame the crowd for their poor response to Mrs Maxeke's name, even though she died some 73 years ago. The reason for their poor response is simply this: not many people know of this great African woman, the pioneer of the women's struggle in South Africa, and the one to whom African-Americans referred as the "Rare Jewel from Africa".

I have heard people lauding the 20 000 strong Women's March of 1956 as if that was the first time that African women stood up against an oppressive system. As important as that march to Strydom's seat of power is, it must not be allowed to overshadow the efforts of other women who preceded it. Charlotte Maxeke, for example, struggled against racism, patriarchy and poverty from the early 1900s. In fact, she may be recognised as the Mother of African Liberation.

Mrs Maxeke was the first African woman to graduate with a BSc at an American institution. She was the founder of the Bantu Women's League, which later became the African Congress' Women League, the first woman to build a school for girls in South Africa, and the founder of the African Methodist Episcopal Church in South Africa. Such a woman deserves to be remembered during Women's Month!

The making of the mother of African Women's Liberation

Charlotte Makgomo Maxeke (nee Manye) was born at Fort Beaufort in the Cape district on April 7, 1874. Her mother was a teacher and her father was a foreman amongst the road maintenance workers and a lay preacher at the local Presbyterian Church. At the age of eight, Charlotte began primary school at the Utenhage Presbyterian Mission School. She advanced rapidly and quickly out-performed her older classmates. It is said that she was exceptionally talented



Dr R Simangaliso Kumalo.



Charlotte Manye Maxeke 1874-1939.

in languages, mathematics and music. In 1880, her family migrated to Kimberly to pursue economic opportunities inherent to the discovery of diamonds. She joined the McAdoo Jubilee Singers who toured America and Canada. It was during these singing tours that, with the help of Bishop Henry Turner, she came into contact with the African Methodist Episcopal Church (AMEC) who assisted her to enrol at Wilberforce University in Cleveland, Ohio. This was one of the few educational institutions owned and run by Black people in the US. The women's group of the AMEC adopted her and provided for her financial needs. This was the beginning of solidarity between African American and South African women which would grow throughout the 19th century.

In 1901, Charlotte graduated with a Bachelor of Science (BSc) degree from Wilberforce, becoming the first Black South African woman to attain a graduate degree at Wilberforce in America. In the same year

she married Marshall Maxeke, a fellow South African student at Wilberforce, and the couple returned to South Africa. Marshall was ordained as a pastor in the AMEC and Charlotte volunteered as an educator, journalist, campaigner for women's rights and activist. The South African government refused either to recognise her qualifications or to employ her. It was unthinkable for African women to hold a Bachelor of Science degree at that time! The most influential job that Charlotte held saw her playing a dual role as a Probation Officer and Court Welfare Officer at Johannesburg's Juvenile Magistrate's Court, for which she was only paid a stipend not a salary. Charlotte Maxeke died in 1939 and was buried in Kliptown after years of struggling for her people.

Engendering Politics

In 1912 Charlotte Maxeke was one of the few women who attended the Bloemfontein conference that founded the South African Native National Congress (SANNC), the political predecessor of the ANC. In 1913, at the second congress of the SANNC, she formed the Bantu Women's League, which later became the ANC Women's League. In 1935, Charlotte founded the National Council for African Women (NCAW). She broke the norm that politics was the domain of men. She raised issues unique to women so that they could become a part of the agenda for liberation. She did this through marches, petitions and presentations at different

platforms and commissions established by government regarding the situation of Black people.

Education

The Maxekes started schools in the Northern Transvaal at Ramokgopa, at the Witwatersrand, Evaton, Dewar's River, Thembuland and Boksburg. In their work as pioneers of education they faced a lot of opposition from the state because the apartheid government of their day was not interested in the education of Black children. By building the Wilberforce Educational Institute in Evaton, which not only led to matriculation, but was also for girls, they went against the norm of prioritising education for girls. Secondly, the institution had a college for clergy students, thus providing the first Black-owned post-matriculation institution in South Africa.

Fighting patriarchy

It is also important to remember that it is not just women from the ruling party who must be remembered for their struggles. Long before the formation of the Congress, there were African women leaders who made their mark. One can call to mind Mantantisi of the Orange Free State who ruled the Sotho kingdoms with excellence, and UmKabayi ka Jama who led the Zulu Kingdom before King Shaka. UmKabayi was the power behind Shaka's throne. When she felt that he was out of control by plunging the nation into endless war, she orchestrated his permanent removal. One can also call to mind the rain queen, Modjadji, of the Bulobedu Queendom which is over four centuries old under the rule of a queen. When looking at this history, one can deduce that Africans are not uniquely opposed to the leadership of women. Like most nations are not in our makeup, patriarchy is not in our DNA but it is taught to us, we have been socialised to it.

As South Africans, we can do away with patriarchy if we want to, and that is what we must do. Despite the historical role women have played in the leadership of the country, statistics have shown that there is very little progress in terms of them occupying positions of leadership. Currently, women make up 38 percent of Local Municipality Councilors, 15 percent of parliamentarians, and 10 percent of the CEOs of JSE listed companies. While South Africa is among the top five countries in the world regarding women empowerment, this does not mean that we have achieved enough. Given that South Africa

has 26 million women and 24 million men, it is clear that much more work needs to be done in empowering women. Moreover, a great number of women continue to live in absolute poverty, are raped daily, and suffer spousal abuse.

It is therefore necessary to examine why greater progress in empowering women has not been achieved. To my mind, a number of issues can begin to provide an answer. Amongst these is religion which continues to perpetuate gender stereotypes. Religion cannot be allowed to continue with business as usual, but needs to be challenged using the constitution of the land. Empowering women is not just a political matter, as it seems to be presented during the celebrations. Rather, it is a multi-faceted challenge incorporating religion, culture, and more. This is a lesson we must learn from pioneers like Charlotte Maxeke, who adopted a multi-faceted approach in facing patriarchy.

Culture

When it came to the situation of women, Charlotte Maxeke rejected African culture, outrightly blaming it for perpetuating the suffering of women especially through the practice of *ukulobola* (payment of the dowry). AB Xuma, a former president of the ANC, recounts how Charlotte Maxeke shattered cultural norms *status quo* by attending meetings in the chief's kraal and insisting on participating in the discussions at a time when women were not allowed to attend such meetings. Culture is always presented as a reason for maintaining women's subordination to men. To my mind, however, culture is not infallible simply because it is historically or traditionally grounded. Rather, the country's constitution must be used to challenge oppressive cultural norms. The initiation and circumcision schools that are held in the Eastern Cape, Limpopo and KwaZulu-Natal must also teach gender equality and the importance of men's role in the empowerment of women. They must not be another avenue for perpetuating gender stereotypes. Gender parity must be a curriculum that must be taught by all schools.

Fear of the unknown our worst enemy

Indeed Charlotte Maxeke deserves a place in the annals of history. Close analysis of her life will reveal that she invested so much time and energy in embracing change. She worked for the transformation of life and liberation of thought forms.

Continued on Page 7.....

Counting on the need to know

Mathematics teaching and learning provides access into mathematical knowledge and skills, which is critically important for living in the twenty first century, writes **Professor Renuka Vithal**.

But in many countries, including South Africa, performance in mathematics also determines access into jobs and further or higher education studies in a range of areas from the natural and physical sciences to economics and technological fields.

It is for this reason that mathematics is regarded, on the one hand, as a gateway subject to a large number of high status, high paying professions but on the other hand also functions as a gatekeeper, for the many who fail to learn and achieve the requisite levels or are failed by the education system. In this respect, mathematics education functions implicitly to stratify society.

To address this and open better life opportunities for students in this high stakes subject it is not surprising that there is much concern about who performs well in mathematics and gets access, and who gets excluded.

One point that has been well established through mathematics education research is that as human beings, we are not empty vessels without any mathematical knowledge. Some early Brazilian studies on “Street mathematics and school mathematics” by Nunes, Schliemann and Carraher clearly demonstrated this.

“How much is one coconut?” asked the market customer.

“Thirty-five”, replied the twelve-year-old coconut vendor.

“I’m going to take four coconuts. How much is that?”

“That will be one hundred and five, plus that’s one thirty-five ... that is one forty”.

The customer revealed her identity as a researcher and invited the young vendor to participate in a formal test based on the same problem: 35×4 . He tries solving it in the traditional way taught in school by writing and arrives at an incorrect answer of 200.

Can it be said that this child does not know mathematics?

This seminal research undertaken more than two decades ago raised fundamental questions about how is it possible that students capable of solving problems in



Professor Renuka Vithal.

natural settings fail to do so in a school type test situations. Similar studies conducted in diverse contexts have spawned a range of theories providing psychological, cultural, social, political and educational explanations.

While testing regimes have taken strong hold and dominate media and the public image of mathematics teaching and learning, it has long been known that test performances give a partial and incomplete picture about what mathematics children know. A growing body of research shows that both children and adults in a wide variety of contexts outside the formal school system generate mathematics. Carpenters, dairy workers, fishermen, dressmakers, farmers, basket weavers, construction foreman, bookies, and shoppers have all been shown to develop and use efficient strategies for solving everyday or work-related mathematical problems, many of which are different from those taught in schools.

The mathematics of traditional societies has also been researched and shows that mathematical ideas exist in all societies, but which are emphasised, how they are expressed and their context varies from culture to culture. The Yoruba people of Nigeria, for example, who have been urbanised farmers and traders for centuries from

before colonialism, have a complex base 20 numeration system requiring addition, subtraction and multiplication to express a number, while the Aborigines in Australia who live in desert environments have well developed space orientation with a sophisticated route finding ability through an internalised compass system.

All people acquire mathematical knowledge and skills by virtue of their lived experiences albeit in a rural area, township, informal settlement or suburb. The question is how are these handled and dealt with in a mathematics classroom by both learners and teachers – are they suppressed or expressed and used to grow new knowledge?

In the South African context a focus on the socio-cultural aspects is closely allied with issues of language. Take for example a test item from the Third International Mathematics and Science Study that was administered to a grade eight class:

John sold 60 magazines and Mark sold 80 magazines. The total amount of money received for the magazines was R700. How much did Mark receive?

The South African national score showed only 9% of grade eight learners answered this correctly. The teacher, who was also the researcher, interviewed one of his students who did not

answer the question to find out why:

R: Why did you leave this answer blank?

L: I don’t know.

R: What don’t you know?

L: How to answer.

R: What question is being asked?

L: I don’t know.

R: How many magazines did both sell? Read the question again.

L: 140

R: Can you work out what you would pay for one magazine?

L: Yes (takes some time, borrows a calculator) R5.

R: What does the question ask you to do?

L: Give the answer.

R: Answer to what?

L: What Mark gets.

R: What does he get?

L: (Again uses the calculator) R400.

While more than half the 34 grade eight learners in this class answered correctly, it was noted that of these, 62% of English First Language learners and only 28% English Second Language learners answered correctly. All four English Second Language learners identified by the teacher as least competent in English left the answer blank. No doubt the teacher’s questioning assisted the student to answer as did the use of the calculator but it begs the question of what the test is exactly testing – language or mathematics competence?

Whatever the reasons for why students learn or fail to learn mathematics, few would today challenge that mathematics is needed as a foundational knowledge to live effectively in a society of the twenty first century. Science and technology are rapidly transforming our world in ways that are difficult to know and predict into the future. As a discipline that underpins science and technology in its many forms, Ubiratan D’Ambrosio, a mathematician, philosopher and educator, and founder of ethnomathematics points to the paradox in which mathematics is

centrally implicated:

‘In the last 100 years, we have seen enormous advances in our knowledge of nature and in the development of new technologies... And yet this same century has shown us despicable human behaviour. Unprecedented means of mass destruction, of insecurity, new terrible diseases, unjustified famine, drug abuse, and moral decay are matched only by an irreversible destruction of the environment. Much of this paradox has to do with an absence of reflections and considerations of values in academics, particularly in the scientific disciplines, both in research and in education. Most of the means to achieve these wonders and also these horrors of science have to do with advances in mathematics’

Much of the concern in developed contexts of the north is with how advances in science and technology are fundamentally changing those societies and how these changes might pose a threat to democracy because of how they might limit the capacity of the electorate to participate meaningfully in understanding and influencing decisions made that affect their lives. An aspect of this concern is with the increasing complexity of science and technology and having to rely on experts or an “expertocracy”, in particular, the capacity of politicians and decision makers to fully grasp their implications.

In developing countries like South Africa with “young” democracies and a much less literate electorate, with lower levels of (mathematics, science and technology) education among those in government and smaller pools of experts, this threat increases many fold, especially within the context of the global transfers and trade in science and technologies across developed and developing nations.

Professor Renuka Vithal is Deputy Vice-Chancellor: Teaching and Learning at UKZN. This article was published in The Mercury on 2 August 2011.

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Although she was a daughter of the 19th century she refused to perpetuate patriarchy and all its evils. Although she was born into African culture, she sought to transform that same culture. She tread where men of her time feared to tread. She demythologised the view that politics and leadership belonged to men. Her convictions about the need for change were of

paradigmatic level. The tragedy of South Africa and indeed Africa today is that it is not prepared to change. Change is a constant of life and no one can resist change. It is an idea whose time has come. Dictators die in office because they are afraid of change. Swaziland remains a monarchy because those with political capital are afraid of change. To embrace the spirit of

Maxeke is to accept change. The struggle for liberation in South Africa was protracted because of fear of change. COPE was birthed under the circumstances of fear of change. Polygamy is perpetuated in South Africa because of fear of change. If we refuse to be agents of change then we will become victims of change because change is a fact of life. Religions need to revise their

fundamentally held beliefs and ways of propagating them if they want to be relevant. Politicians need to change the way they account to the electorate if they want to be electable.

It seems change was the major purpose for which our mothers sacrificed their lives. As we celebrate Women’s Month, let all men embrace new masculinities. New masculinities

that will respect women and alleviate the spread of HIV/AIDS. Let all women be imbued with new confidence. Confidence that they are not less human and are endowed with phenomenal potential to heal Africa. Viva women of Africa Viva.

Dr R Simangaliso Kumalo is the Head of the School of Theology and Religion at UKZN.

The UKZN Griot Of Doing and Grooming



A decade ago, a study conducted by a journalism professor revealed that journalism students don't read newspapers, media students don't watch TV and film students don't go to the movies.

WORDS: KEYAN G TOMASELLI

Well, he left the academy in disgust and took tourists white water rafting. The river froth was exhilarating rather than irritating as is the froth in the academy.

Knowing how to do is just as important as learning what needs to be known. That's what I tell my often disbelieving students. Many think that a certificate is proof enough to get a job. But often, they do not know how to do, what to do, or why they are doing it. Many just learn reams of jargon which they spew back uncomprehendingly in exam papers and essays. Filling up paper is the objective rather than constructing, arguing, analysing.

'Doing' it, is however what employers look for. The certificate simply signifies that graduates have done time, paid their fees and somehow manoeuvred through a degree. This has been a long standing problem for the academy. Philosopher Gilbert Ryle argued in the 1940s that *knowing how* is conceptually distinct from *knowing that*. The object of his argument was the standing of Cartesian ontology. If the good philosopher were to observe students at UKZN today, he would find living proof that his contention was absolutely true.

So, I got a real kick when I

read the March 2011 edition of *NUX* (*Natal University Campus Chronicles*, the first ever SA student newspaper, publishing since 1934). Here are students actually making media. Simphiwe Ngwane, a now regular contributor to my Centre's own magazine, *SUBtext*, had read one of my Griot columns and responded to it. Reading, doing, knowing how, now there's a recipe for success.

The last time that HC's student newspaper, *Dome*, appeared, was about 10 years ago. Its producers were very proud of their achievement, making the point that not a single media student had been involved in its production. What were the media students doing the editor wanted to know? He never got a response because they were not reading it; "knowing that" had supplanted knowing how.

Doing, building experience, developing a portfolio is rarely on the minds of Humanities students. When I taught first year I would ask a new class of 300 why they were studying media. The answers were revealing: some wanted to be journalists. They had mistakenly assumed that this declining sector in the media industry was well paid. Others wanted the glamour of TV exposure. Little did they realise

that the average production day is 10 hours of exhausting work. None had a camera, even if their uncles did, or had even made a home movie. The remainder mentioned advertising. None believed me that this sector is the most demanding and that such is the stress and work load that 18 hour days are the norm. They wanted high salaries without actually having to do the work. Students got sullen when I told them that it was my job to prepare them for the unrelenting demands of the profession. I have been there – but then what do I really know?

So, what were these students doing in my classroom? They believed that the lecturer's job is to shovel knowledge down their throats, they themselves not actually taking responsibility for their own learning, let alone career planning. So we push, pull, cajole and encourage students to get involved in campus media, off-and on-campus internships, to actually meet the industry. For us, that's the hard work. Getting the degree conferred is relatively easy.

I've just finished editing a textbook. The publisher warned us that students nowadays can't concentrate for long periods, are narcissistic and self-absorbed. They don't read, they can't write, and they are unable to think

critically. The publisher provided us with published case studies analysing this kind of helpless self-centred student. This was our readership, we were told at a workshop. 'Find the formula to connect with this generation of lost souls and the book will be published.' This is the stuff of multiple PhDs. Some of the book was written by graduate students. By reducing the generation gap we hoped to encourage reading of our book by the atomistic ipod/ipad/iphone generation.

In Ryle's terms, what do UKZN students do, if they're not actually doing? According to one of *NUX*'s correspondents Daphney Etienne, an international student, the girls especially are grooming, parading, dressing up. Fashionistas all, they don't look or behave like students, she observes: makeup is flawless, hairdos and outfits stunning. Indeed, fashionistas is the cover story of the April *Wits Review*. Students don't even other themselves as students anymore. It's the disruptive rent-a crowd that cause campus closures who pretend to be students. It is the latter who have a mission, where the former simply have fashion. They preen and strut about as if the much practiced unnatural laid-back modelling walk on Fashion TV is natural. Like platform models,

however, they are going nowhere. The fashionistas would appear to be a microcosm of the broader society where conspicuous consumption and flaunting of wealth – or just the image of it – has become the norm.

Ngwane – as did I in a previous column – compared the campuses – and moreover the bus ride in between. Thobani Khumalo asks questions about chemistry, but is *doing* in media studies; Ngwane coined a new term, "Quadology", while Etienne reluctantly went with the flow to the mall. Lungani Zondi writes about accommodation woes and as a journalist found Student Housing wanting. Read this and more in your student newspaper – the one from PMB that is. The newspaper's design is rough and ready but it's there. The centrefold photo spread is of real students – *not* the fashionistas. *NUX* is about doing, compiling a portfolio, and getting a job. "UKZN ... is back in the BUZZ..." is the front page heading. Way to go

Keyan G Tomaselli is Director of The Centre for Communication, Media and Society. He's just buzzing at the moment.

Disclaimer: The views expressed in this column are the author's own.

Sudoku

6		5	7		4			9
		9				1		3
			5					
				5				8
4		8		2		3		1
3				4				
					5			
9		7				8		
5			1		3	7		4

Wednesday Concert features Salim Washington

UKZN's Centre for Jazz and Popular Music's Wednesday Concert on August 3 featured the talents of scholar, educator, and multi-instrumentalist, Dr Salim Washington, who was accompanied by UKZN students, graduates, and staff musicians. Washington has a PhD from Harvard University, and is a professor at the Conservatory of Music at Brooklyn College in New York. He is a leading scholar of African American and New Jazz studies. He is dedicated to serving and educating disadvantaged communities and visited South Africa in 2009 through the prestigious Fulbright Fellowship.



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