

TEACHER'S CORNER:
'Sky's the limit for Fathima Beckmann – SA's global trailblazer
Page 20



STRONGER LEADERSHIP:
The inside story on governance since democracy by Prof Malegapuru Makgoba
Page 12



YOUTH:
AI can transform the young, says Aluwani Chokoe
Page 15



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QUARTERLY EDITION

The dawn of a new era



NEW EDUCATION CHIEFS SIVIWE GWARUBE AND NOBUHLE NKABANE PROMISE FRESH THINKING

Pictures by Eddie Mtsweni

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Education News

‘Schools should not be graveyards’

New DBE

Minister will
engage President
on BELA Bill

EDWIN NAIDU

Mindful that her hands are full, given the enormity of the challenges, the new Democratic Alliance Minister of Basic Education, Siviwe Gwarube, has pledged to eliminate pit toilets in rural schools because, thirty years into democracy, “schools should not be graveyards”.

“It is a crime. It’s letting down the most vulnerable because everybody else can unionise and organise, right? But learners and children can’t, so it’s incumbent on leaders in society to say, this is a crime; we cannot have this in our schools,” Gwarube, the former DA Whip in the National Assembly, told Inside Education.

“I will certainly be working day and night to make sure that that is no longer a reality for many learners who essentially are poor, black pupils, subjected to these conditions because of the inequality that we experience in South Africa.”

In her first media interview 24 hours after being sworn in as Minister of Basic Education, replacing the long-serving Angie Motshhega, Gwarube said she was concerned about low literacy and numeracy levels as South Africa has fallen behind its peers globally and on the continent.

She said it was alarming that Grade 4 learners could not read for meaning since it was an advanced level of the foundation phase.

“That worries me because we are in trouble if we don’t correct the foundation. The second one is



Siviwe Gwarube, Minister of Basic Education

children are dying prematurely and unnecessarily because of unsafe infrastructure. Schools should not be graveyards. They should be places of opportunity and learning. And these two priorities are incredibly close to my heart,” she said.

“When one looks at the existence of pit latrines in South Africa, that there are still children in our democracy who die in these toilets, that is something that I am dedicating myself to working with other Cabinet colleagues, to say we want to eradicate the pit toilets as soon as possible. And we want to ensure that there are enough students and learners in our system who can read and read for meaning and are ready for an economy of the future.”

Regarding the controversial Basic Education Laws Amendment (BELA) Bill, Gwarube said it was essential to separate the politics of the Government of National Unity from her work.

“We will have robust political engagement in the Government of National Unity. There will be policy discussions and disagreements. But when it comes to my work in the department, I do not want politics playing itself out.

“I want to assure anybody in the department or a stakeholder that the department’s work must be completely apolitical. We must ensure that we implement what is best for the system, not necessarily the interests of a political party.

“Regarding the opposition to the Bela Bill by the Democratic Alliance that is now in my current capacity, I’d have to look at this in its entirety. It’s important not to throw out the entire bill with the bathwater. The objectives of the Bela Bill are important and commendable – however, some sections concern stakeholders regarding the erosion of the powers of School Governing Bodies.

“I want to have an honest conversation with the President and use my Cabinet seat to say, look, Mr President, there’s an opportunity here. We can send this bill back to the National Assembly, but some of these things we can resolve and not tie this up in legal warfare for years. That will be

are getting left behind around the globe. Countries like India have used technology to develop an entire industry of call centres and services for the rest of the world.

During her tenure, the Minister said she wants to explore public-private partnerships, especially in technological advancements, since it was in the interest of any significant economic player in South Africa to invest in the country’s future.

Citing the example of collaboration between the Chemical Industries Education & Training Authority (CHIETA) and private sector firm Highveld Industrial Park to launch the CHIETA SMART Skills Centre in rural Mpumalanga, she said society must step in, “because we can’t allow learners in South Africa to be left behind, while the rest of the world is doing incredible things in the world of technology”.

Since opening the first centre in Saldanha Bay in October 2022, more than 10,000 youth in rural areas have visited these centres to access free data services or print their CVs to apply for jobs. Smart Skills Centres have also opened in the Western Cape, Kwazulu-Natal, the Eastern Cape, and the Brits Smart Skills Centre in the North West and Modjadiskloof Smart Skills Centre in Limpopo.

“I think for the private sector, it’s not just as an act of kindness, there’s an economic incentive for them to invest in the technology of learners in South Africa.”

She would also like to see civic education fused into the curriculum to deepen democracy.

“The Independent Electoral Commission also has to come on board in terms of really activating that kind of work in schools in a nonpartisan way because what you want is to make sure that learners are civic-minded because we can’t have a situation where essentially half of the country’s population is checking out of the political system,” she said.

Concluding the interview with a question on the South African Democratic Teacher’s Union’s criticism of the DA getting the DBE portfolio, the Minister said she has no doubt she would work well with all stakeholders.

“I will orient myself, getting briefings from the department and our entities, like Umalusi and SACE, and meeting stakeholders, including unions and SGB bodies.

“My one message is, if your priority is to place the learner’s future at the centre of all we do, we will find each other. I cannot think of anything that will make us not get along.

“My understanding is that the union exists for its members, but its members are people who have dedicated themselves to educate learners, and if we can remember why they are there, why I am here, then we already have found common ground. I’m convinced that because our common interest is the learner’s future, we will certainly find each other,” she said.

my approach to say to the president, here’s the bill, and petition him to say, as my colleague, can we send this bill back to the National Assembly to discuss the contentious parts.”

Furthermore, Gwarube wants a curriculum review to understand how to adequately equip learners going through the system to start in grade R or the early child development centres and ensure they remain in the system until they leave grade 12.

“This is important because how do we ensure that the product they leave with – that matric certificate – is of quality and equips them for an economy of the future? That is the question that we must be asking.

“And we also must be asking ourselves, are we retaining enough learners across the system? It’s one thing to look at just the matric results and be content with that, but we’ve got to look at those results in context. Are those same people who started grade R the same number of students who finish?”

Of course, she said, while some learners branched off to TVET and Community Colleges, there must be a mechanism for tracking whether they are staying in school, getting a good quality education, and whether the educators are supportive, capacitated, and resourced enough to deliver a good quality product.

Turning to the importance of technology, she said it’s important to consider the department from a social level and one that had significant economic value.

“For me, that is the value of technology because you are equipping learners to vote for the economy of the future. Otherwise, I mean we

Education News

A bold vision for higher education

Minister wants
to tackle funding
challenges, improve
quality and
address gender
imbalances

EDWIN NAIDU

Dr Nobuhle Pamela Nkabane, the new Minister of Higher Education in the Government of National Unity, is not under any illusion of the enormous task facing her.

“My vision for the higher education and training sector empowers graduates to contribute to the body of knowledge, enabling the government to make informed decisions to tackle our country’s socioeconomic challenges,” she told Inside Education.

Nkabane takes over from Dr Blade Nzimande, who was appointed Minister of Science, Technology and Innovation, with a list of priorities to fix the funding problem and tackle gender inequality, among other issues.

The lifelong learner from Mfundweni Village, a small rural town in Umzimkhulu in the Harry Gwala Region of KwaZulu-Natal, said she wants to see more women with PhDs and with extensive experience in the sector challenge the heavily male-dominated status quo by becoming vice-chancellors at institutions of higher learning.

Nkabane brings to her role a wealth of academic qualifications from various institutions of higher learning, including a PhD in Administration from the University of KwaZulu-Natal.

Her vision for the higher education sector is one of inclusivity. She aims to make it accessible to all qualifying students, produce quality education, and effectively manage student funding and disbursements through the National Student Financial Aid Scheme (NSFAS).

As we embark on the 7th Administration, Nkabane’s immediate priorities for the Ministry of Higher Education are clear. They will be guided by ANC Manifesto priority 4, “improving education and skills”, and the Constitution’s affirmation that “Everyone has the right to further education”.

Elaborating, she added that the state, through reasonable measures, must make education “progressively available and accessible” through



Dr Nobuhle Pamela Nkabane, Minister of Higher Education and Training

- Remodelling student funding and the management of disbursement of funds (NSFAS);
- Infrastructure development;
- Ensuring quality education;
- Transformation of the sector;
- Positioning Technical Vocational Education and Training (TVET) colleges as the centre for technical skills acquisition; and
- Ensuring that SETAs are practical and efficient.

“As the government, we are noting a mismatch between skills and labour market demands in the country, which requires an aggressive approach for urgent and strategic action. With effective and efficient TVET Colleges and CET Colleges that respond to the country’s skills needs and high levels of unemployment, I see the sector reshaping shortly to ensure alignment between curricula and industry needs.

“The current curriculum limits graduates’ employability and entrepreneurial potential, which then translates to a high unemployment rate and hinders the sector’s contribution to economic development in South Africa.

“Upskilling and reskilling should be another area of focus through

SETAs,” the Minister said.

Nkabane firmly believes that the tertiary sector has the research capacity to address the current challenges. She is committed to supporting and enhancing this capacity, instilling a sense of confidence and security.

The Minister said that the sector is in the first phase of implementing a comprehensive student funding model to address some of the challenges in the current funding system and that this will help reshape South Africa regarding skills output and job creation.

If all systems were adequate and efficient in the higher education and training sector, government investment in education could increase productivity and creativity and stimulate entrepreneurship. She believes this would address the country’s triple challenges of inequality, poverty, and unemployment, resulting in economic growth and development.

“We reaffirm our commitment to access to quality education as per the Freedom Charter, which states that ‘the doors of learning and culture shall be open to all.’ We are saying the doors of learning are

indeed open,” she added.

Nkabane’s commitment to learning is an inspiration.

“I attended Ibsi Primary School in a small village in Umzimkhulu; attended Ibsi High but completed in Task Force High School. My post-matric qualifications were at different institutions: Durban University of Technology, UNISA, University of Kwazulu Natal, University of Stellenbosch, and short programmes at the University of Cape Town and the University of Western Cape. I am studying towards an MSc and Masters with SOAS University of London and Wits Business School.”

The Minister cut her political teeth at a young age by joining the ANC and serving in various leadership positions within the organisation and leagues at branch, regional, and provincial levels.

Nkabane was among the leaders of the ANCYL in the then Sisonke Region, which motivated the renaming of Sisonke District Municipality to Harry Gwala District Municipality in honour of struggle stalwart Harry Gwala.

She served on the Provincial Executive Committee of the ANC,

ANCWL, and ANCYL in KwaZulu-Natal. She also served as a Shop Steward of the South African Municipal Workers Union and was elected to the National Executive Committee at its 55th National Conference.

Asked what went through her mind when the president called to inform her about her appointment, Nkabane said: “To be honest ... I had mixed feelings: both excitement and anxiety due to the magnitude of the responsibility that I have been entrusted with to execute ‘improving education and skills.’”

She says the inspirational words of President Nelson Mandela, who said, “Education is the only weapon we can use to change the world”, along with her positive thinking attitude, helped her.

“My realistic optimism helped me think and feel differently ... I believe I am equal to the task. The movement has sharpened my skills and competencies to execute the responsibility with distinction. Obviously, by working together with both internal and external stakeholders, I believe I will lead this country to a brighter future,” she said.

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DG's Corner

DG Mweli visits Winter Classes across provinces as part of the Learner Support Programme

STAFF REPORTER

Basic Education Director-General Mathanzima Mweli has conducted his annual Learner Support Programme across various provinces. During the monitoring and support visits, he briefed and discussed with provincial and district management teams to gauge progress on support provided to the Class of 2024.

"The progress we've seen, with a significant increase in student performance, is truly inspiring," said Mweli.

The provincial presentations cover, among other things, targets per grade and subject, implementation of the inclusive basket, the Learner Recovery Programme, E-learning, school support, a focus on underperforming schools, district and teacher support, and a differentiated approach to supporting schools.

In addition to meeting with provincial and district management teams, Mweli visits various centres to observe attendance and talk to management, teachers, and learners of the Winter Support Camps.

These camps form part of the Comprehensive Learner Support Programme, which is implemented



Basic Education Director-General Mathanzima Mweli

from the beginning of the year until the last learner writes the final paper. Mweli's visits kicked off in the

Eastern Cape Province on 15 June in the Amathole East District. He then visited the Pixley ka Seme

and Francis Baard Districts in the Northern Cape on 17 and 18 June, respectively.

Then, on 19 and 20 June, he visited the Gariep and Motheo Districts in the Free State. On 21 and 22 June, he visited Winter Camps in KwaZulu-Natal (Umlazi and Uthukela Districts) before heading to the Northern Cape to pay a visit to the John Taolo Gaetsewe District on 23 June.

He has expressed his appreciation for the excellent hosting, organisation, and execution of the 2024 Winter Learner Support Programme.

"It has indeed been time well spent by all accounts. Most districts have a comprehensive Support Programme for the 2024 Academic Year and a dedicated team from school up to district level, who have shown resilience and determination in the face of numerous challenges.

"Our focus on a system-wide approach should be maintained in supporting and monitoring all grades, subjects, circuits and districts.

"Let's continue to intensify support for the Class of 2024 even to do better than the previous classes, driving the five points for keeping learners focused based on the approach of reading and practising every day, consistent with the Kaizen philosophy of continuous improvement," he concluded.

DBE identifies six priority areas for intensified focus during the 7th Administration

STAFF REPORTER

Following the 2024 general elections, President Cyril Ramaphosa was inaugurated for a second term at the Union Buildings in Tshwane on 19 June 2024.

In his inaugural speech, Ramaphosa said: "The voters of South Africa have expressed their appreciation of the progress made in many areas of their lives over the past 30 years of democracy. The formation of a government of national unity is a moment of profound significance. It is the beginning of a new era."

Ramaphosa added that the government has affirmed its resolute quest to build a growing and inclusive economy that offers opportunities and livelihoods to all people and to rededicate itself to democratic renewal and social and economic transformation so that no one is left behind.

"The parties have committed to invest in South Africa's people through quality education and health care."



President Matamela Cyril Ramaphosa

The government and the Department of Basic Education have identified six priority areas for intensified focus during the 7th Administration.

Implementing the 2030 Strategy for Early Childhood Development Programmes and the Mass Registration Drive will improve the quality of ECD delivery in South Africa.

The Strategy provides a framework to combine the endeavours of social sector partners with the government's efforts to create a Social Compact for ECD that is a powerful engine to ensure that all children in South Africa have access to quality ECD.

The National Reading Literacy Strategy and the Mother Tongue-based Bilingual Education Strategy are umbrellas for improving language. The key objectives are strengthening the National Reading Literacy Strategy, aligning provincial and district reading strategies and implementation plans, and improving reading, writing, and numeracy outcomes.

Mother Tongue-based Bilingual Education

The DBE's National Language Unit and Provincial Education Departments are poised to introduce Mother Tongue-based Bilingual Education in South Africa during the 2025 School Calendar. This will promote and facilitate using African languages as Languages of Learn-

ing, Teaching, and Assessment to combine the endeavours of social sector partners with the government's efforts to create a Social Compact for ECD that is a powerful engine to ensure that all children in South Africa have access to quality ECD.

The DBE has prioritised establishing an inclusive education system, a critical undertaking for maximising access to education for learners, especially those with special needs, to ensure that no child is left behind.

Early screening, identification, and assessment will be provided for dedicated support, along with the adaptation or modification of assessment methods, norms, and standards for funding and resourcing to improve access and ensure that all children of school-going age who experience barriers to learning have access to quality basic education.

The introduction of the Three Streams Model (TSM) was intended to diversify the school curriculum by offering learners greater choices in selecting learning pathways within the academic, vocational and occupational schooling streams.

In addition, the Three Streams Model seeks to strengthen vocational and occupational offerings

in public ordinary schools, focus schools and Schools of Skill for learners with special educational needs to create multiple learning pathways for 21st-century employability to curb unemployment.

The DBE has developed a ten-year strategy for Mathematics improvement, the National Mathematics Improvement Plan, for implementation in 2025 to improve participation, performance and quality passes.

To expedite the implementation of the National Mathematics Improvement Plan, a collaboration of the National Education Collaboration Trust, the DBE and several actor groups proposed a macro-level support initiative to enhance Mathematics teaching and learning.

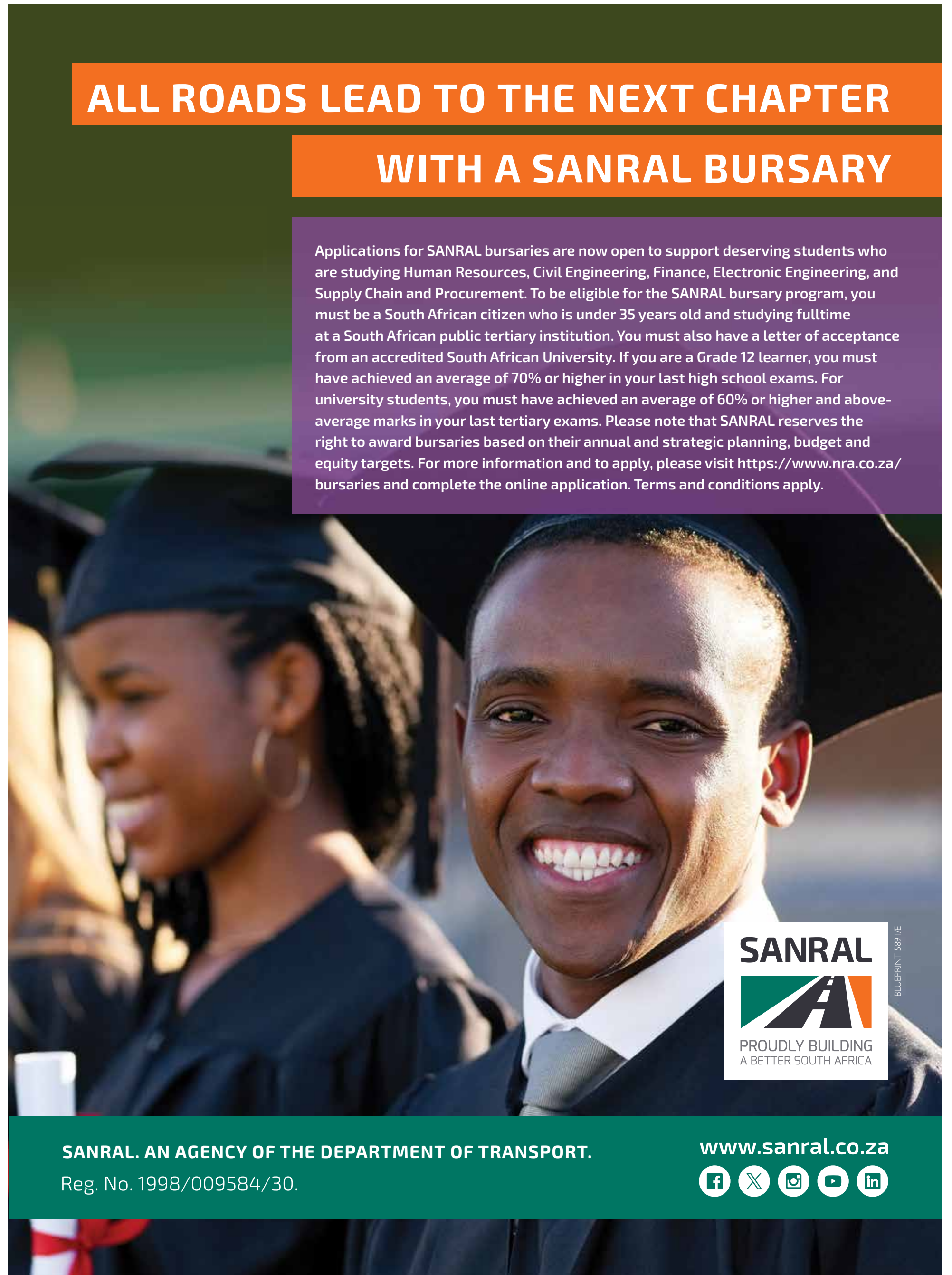
The DBE continues to commit to ensuring quality education as we embrace the new administration.



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Teacher's Corner

Will there be enough teachers in future?

SA is tackling a potential retirement crisis

EDWIN NAIDU

While the world is facing a significant teacher staffing crisis, South Africa is currently concerned about replacing older teachers as one of the country's biggest challenges, according to the work of the Teacher Demographic Dividend (TDD) project at the University of Stellenbosch.

The TDD is a research project focusing on South Africa's need for teachers in the next decade and beyond when about half of all government-employed teachers will have retired by 2035.

Replacing them will be one of the country's biggest challenges. The project involves 27 researchers affiliated with various universities, research organisations, independent consultancies, and the Department of Basic Education. It will be assisted by developing a model that predicts the demand for and supply of teachers over the coming decades.

Last month, the Global Report on Teachers by Teacher Task Force and UNESCO revealed that an additional 44 million teachers would be urgently needed by 2030 if the Sustainable Development Goal (SDG 4) on education is to be met.

Several factors influence teacher resignations. Teachers face multiple

challenges, including a lack of professional development, poor working conditions, heavy workloads, and low salaries. There's also a general lack of respect and recognition of their critical contribution to society.

Wilfried Theunis, the Pretoria-based Country Programmes Manager for the education development organisation VVOB South Africa, says the country does not face an absolute teacher shortage but rather relative teacher shortages related to specific subjects such as the introduction of new subjects and new curriculum streams such as the Three Streams Model; phases of schooling (for example in the Foundation Phase where the language of learning and teaching is the learners' home language) and geographic areas such as rural or high-density urban areas (informal settlements).

To address the situation, Theunis says the Department of Basic Education has introduced the Teacher Assistance and Support Programme (TASP) to support teachers' psychological and social well-being. A key initiative within the TASP is the National Teaching Awards, implemented annually. The DBE partners and key stakeholders have also implemented a series of webinars for teachers as part of the TASP. The Department of Basic Education (DBE) has committed more than R7 billion



towards bursaries for new teachers through the Funza Lushaka Bursary Programme established in 2007.

Since 2012, the DBE has introduced various strategies to strengthen the recruitment of new teachers, such as the District-Based Teacher Recruitment Programme and the Community-Based Teacher Recruitment Programme.

"VVOB in South Africa is not focusing on solving the challenge of teacher shortages; however, we do hope that our work contributes to the well-being of teachers, which should improve retention," Theunis said.

The DBE, through the Teacher Union Collaboration (TUC), has significantly broadened teacher support. The TUC supports teachers' continuing professional teacher development (CPTD) in addition to the CPTD programmes of the DBE and Provincial Education Departments. The South African Council of Educators plays an essential role in the professionalisation of teaching, which should contribute to the attractiveness of the teaching profession.

The Teacher Task Force network launched its #TeachersMissing ad-

vocacy campaign on 17 June 2024 at UNESCO HQ during the SDG 4 High-Level Steering Committee Stocktake of Transformative Actions in Education event.

The Task Force said the shortage of teaching professionals and the decline in new teacher enrolments have serious implications for learners' education and well-being. In a recent address, UN Secretary-General António Guterres stated: "Teachers are central to nurturing every country's greatest resource: the minds of its people. Yet today, we face a dramatic shortage of teachers worldwide, and millions of teachers who lack the support, skills and continuing training they need to meet the demands of rapidly changing education systems."

Brussels-based education expert Tom Vandebosch, also with VVOB, warned that the teacher shortage is a significant obstacle to achieving SDG4 by 2030.

"The challenges such as inadequate remuneration, poor working conditions, and lack of professional support discourage many from joining or remaining in the teaching profession. These issues must

be addressed urgently to make substantial progress toward the SDGs," he said.

While the goal of training 44 million teachers in six years is daunting, Vandebosch said it was not impossible through innovative solutions such as leveraging technology for remote and blended training, creating international partnerships, and investing in teacher education can make a significant difference.

Several factors have contributed to teaching's decline, including low salaries, a lack of career advancement opportunities, and the perception of teaching as a less prestigious profession. Improving pay, providing continuous professional development, and enhancing teachers' overall status in society are crucial to restoring teaching's appeal.

Vandebosch said African governments are increasingly aware of the need to address the teacher shortage. However, the level of commitment varies.

"Some countries have started investing in new personnel and teacher training programs, but much more needs to be done to meet the scale of the challenge."

Two new key appointments a boost for Curro

STAFF REPORTER

South African JSE-listed independent school operator Curro Holdings, is delighted to announce the appointment of Nkosinathi May as the new Executive Head of Curro Jewel City in Johannesburg, effective 1 July 2024.

Nkosinathi brings a wealth of experience to the school, having paddled in the corporate sector as a Stakeholder Engagement Officer in the sustainability department at AngloGold Ashanti.

Driven by a deep calling to educate and inspire, he turned to teaching, starting as an educator at Carleton Jones High, before joining the Curro family as Commerce Faculty Head at Curro Protea Glen between 2022-2023. In his most recent posi-



Anthony Edwards

tion, Nkosinathi was the Founding Principal at SPARK Midrand High. Hailing from Merafong on the West Rand, Nkosinathi holds a



Nkosinathi May

Bachelor of Commerce degree and a Postgraduate Diploma in Management from the University of the Witwatersrand.

Meanwhile, Anthony Edwards has been appointed as the new Curriculum Executive at Curro Holdings.

He outlines his vision for Curro and emphasises the importance of curriculum innovation and excellence, stating, "An innovative Curriculum is at the heart of Curro's purpose, and our curriculum must continue to reflect our core values, whilst connecting learners to real-life events and developing their character skills."

Edwards boasts an impressive track record encompassing more than 33 years in education. He holds a BA Degree in Mathematics and a Postgraduate Higher Diploma in Education from the University of Potchefstroom, where he graduated cum laude.

He is no stranger to the Curro family, having begun his journey with the group in 2011 when he

joined as the Executive Head of Curro Serengeti in Gauteng.

"I am excited to continue developing our team's growth mindset and using our curriculum to help develop the ability of our learners to think critically and make empowering decisions that ensure they make meaningful contributions to society," states Edwards.

Curro Holdings Deputy CEO, Mari Lategan, expressed her excitement about Edwards' appointment, stating, "Anthony's passion for education and his extensive experience within Curro make him the perfect fit for this crucial role. We are confident that with Anthony leading our curriculum team, we can look forward to further enrichment of our curriculum offerings, ensuring that our learners receive a comprehensive and dynamic education."

Advertorial

Vodacom turns 30 and renews its vision of making a positive contribution to SA



From left are: Advocate Bonnie Currie-Gamwo, Special Director of Public Prosecutions: Sexual Offences and Community Affairs Unit, National Prosecuting Authority; John Jeffrey, former deputy minister of justice and constitutional development; Shamila Batohi, National Director of Public Prosecutions; Noncezo Zonke, executive mayor of Ixuba Yethemba; Sitho Mdlalose, Vodacom South Africa CEO; Bukwe Fanta, Eastern Cape social development MEC and Sazini Mojaopelo, CEO of the GBVF Response Fund.

TAKALANI NETSHITENZHE

South Africa and the country's largest mobile network operator, Vodacom, is celebrating 30 years of impact, during which the company focused on helping to build a better nation by helping to speed up socio-economic transformation.

Since democracy, just as SA has undergone a significant transformation, the Vodacom Foundation which is the Corporate Social Investment (CSI) arm of Vodacom South Africa has utilised a portion of Vodacom South Africa's profit to empower society, using its core capabilities in technological innovations.

It has primarily focused on Education and Gender Empowerment and has also provided resources towards disaster relief and other initiatives.

These areas are deeply rooted in the drive to effect social change and align with the 2030 Agenda for Sustainable Development and UN Sustainable Development Goals.

Vodacom's communication technologies can help address some of the country's most pressing socio-economic challenges. In this regard, it is responsible for using its resources and technology to enable social change, with notable success in education and gender.

Enabling the provision of accessible quality education

- In 2018, the Vodacom Foundation unveiled a multi-faceted education ecosystem that includes Early Childhood Development Centres (ECDs), Schools of Excellence, and Community ICT Centres (Teacher Centres), which include Youth Academies.
- Through this initiative, Vodacom is working with the Department of Basic Education (DBE) and the Department of Social Development (DSD) to realise its 2030 Vision for education and other critical priorities for national development.

- The education system's success depends on a smooth interface and the implementation of various pillars, which are underpinned by a partnership of multiple players.
- Vodacom Foundation supports 25 Schools of Excellence nationwide, up from 13 in 2018. These schools were selected from our connectivity project launched in 2008.
- The Vodacom Foundation assists each school by establishing a fully equipped computer centre with devices and an interactive whiteboard. We also upgrade the infrastructure, so if doors or windows are broken, we fix them.
- We are upgrading school security by building strong rooms to ensure valuable equipment is stored securely and safely. In some schools, where necessary, we decommission pit latrines (mainly in Limpopo, Eastern Cape, and KwaZulu-Natal) and replace them with proper ablution facilities.
- From the 25 schools, Vodacom has donated coding and robotics equipment and training to three schools, and these are implementing coding and robotics as extra-curricular programmes.
- Each School of Excellence has at least two ICT coordinators to assist the learners and educators with accessing the technology.
- Thirty-six skilled psycho-social support professionals have been placed in Schools of Excellence (SOEs) across the country to offer critical psycho-social interventions, including the prevention of gender-based violence and bullying. Through these interventions, schools can be a safe, inclusive environment that ensures learners reach their full potential. So far, they have reached more than 26,000 learners.
- As part of our commitment to improving access to quality education, 27 ECD Centres near SOEs have been upgraded and renovated with ICT equipment, mobile libraries, a sustainable water supply, and improved san-

itation facilities. Over 1,800 children have been given stepping stones to close the education gap. Educators are a powerful force in implementing the aims of our education ecosystem. Vodacom has collaborated with the DBE and other organisations to train teachers to integrate ICT in classrooms. Eighty six teacher training centres have been refurbished and maintained with connectivity throughout the country.

Gender empowerment

- Vodacom has committed to tackling gender-based violence (GBV) as part of its gender empowerment strategy, which is tied to our purpose-led inclusion pillar for all.
- The GBV ecosystem approach, which partners with government and civil society organisations, includes prevention, response, victim support, and empowerment.
- This framework ensures that we are taking concerted action as a business to overcome this societal ill while making a sustainable impact on the communities in which we operate.
- GBV initiatives include training victims of GBV in the DSD, overseeing shelters, psycho-social support in schools in partnership with the DBE, and building Thuthuzela centres in collaboration with the National Prosecuting Authority to refer victims of GBV. So far, one centre has been built in Cradock in the Eastern Cape, and Vodacom is building another in Nelspruit in Mpumalanga. The Bright Sky SA app, which offers risk assessment and information on GBV and support services, was launched in 2021.

Beyond education and gender

Vodacom's partnership with the Smile Foundation since 2007 has enabled the company to provide life-changing surgeries to children with facial anomalies, giving them a



From L-R: Mr Shumani Ravhaunzvo (Senior manager: Education District), Mrs N. Nduvheni (Circuit manager), Mr Enver Surty (former deputy minister of Basic Education), Takalani Netshitenzhe (Chief Officer: Corporate Affairs for Vodacom Group), Chief Ravele of Mauluma, Chebet Chikumbu (Director Global Citizen SA) and Sello Hatang (CEO of the Nelson Mandela Foundation) and Mr Solly Mabusela (Chief Director: Limpopo Department of Education)



Sitho Mdlalose (CEO, Vodacom South Africa), Lindwe Zulu (Former Minister of Social Development), Takalani Netshitenzhe (External Affairs Director, Vodacom South Africa) and learners from Dr WF Nkomo Secondary School.

new lease on life and the confidence to face the world.

Seeing smiles restored and lives transformed reinforces our belief in the power of corporate social responsibility and inspires us to continue our work with renewed vigour and dedication. To date, the partnership has benefited 600 children.

The next 30 years

In the next 30 years, the Vodacom Foundation envisions a South Africa with significantly reduced inequalities and poverty. Our strategic focus will be on sustainable development, targeting education and economic empowerment.

The Vodacom Foundation remains dedicated to making a positive difference. Our future endeavours will focus on harnessing technology to address social challenges and driving innovation in education, gender empowerment, and economic development.

We aim to create a lasting impact and contribute to a prosperous and inclusive society by aligning our initiatives with the country's developmental goals. Our commitment to doing good and making a difference will continue to guide our actions as we support South Africa's journey toward a brighter future.

The Vodacom Foundation's Youth Academy is well on the way to meeting its goal of training 4,000 young South Africans by 2025 with important Information and Communications Technology (ICT) skills. The Foundation has trained just over 1600 unemployed youths at the end of the 2023/2024 financial year.

The Youth Academy programme,

established in partnership with Cisco, MICT-Seta includes 12 demanding months of training, with the goal being to equip unemployed youth from impoverished backgrounds with ICT skills. At the end of the year, there is potential for these graduates to be offered internships and workplace experience. Critically, Vodacom has started absorbing some youth academy graduates into some of its programmes, such as Early Childhood Development centres (ECDs), Schools of Excellence and partner NPOs, as paid ICT youth coordinators and training facilitators. In this way, the telco is contributing to job creation.

For Vodacom, "The future South Africa that we want and deserve" is one in which every individual has access to quality education, creating a world free of gender-based violence and economic opportunities. It is a nation where technology empowers communities and drives sustainable development. We envision a South Africa that is inclusive, equitable, and prosperous, where every citizen can achieve their full potential.

Over the years, our initiatives have touched countless lives, providing education and economic opportunities to those in need. We remain committed to creating sustainable change and empowering communities as we look to the future. Our legacy is built on the principles of service, innovation, and partnership, and we will continue to uphold these values as we work towards a brighter and more equitable South Africa.

Takalani Netshitenzhe is Director of External Affairs for Vodacom South Africa.

Education News



New Higher Education and Training Minister vows to clean up NSFAS

EDWIN NAIDU

The new Minister of Higher Education and Training, Dr Nobuhle Pamela Nkabane, is “committed to rooting out corruption and maladministration in the NSFAS grant payment system.”

“We have committed funds to improve NSFAS Information Communication Technologies, including loan system management,” the Minister said. “We acknowledge that some of the challenges have led to delays in finalising and tabling NSFAS annual reports in Parliament.”

During her maiden Budget Vote speech in Parliament on 16 June, Dr Nkabane said her Ministry had listened attentively to the voices agitating for transformation regarding the challenges of inefficiencies emanating from the NSFAS.

“We have also listened to parents’ silent prayers for the Department of Higher Education and Training to resolve current student funding and payment challenges,” she said.

“We have also listened to the voices of landlords providing accommodation to students and those provid-

ing transportation to students.

“We are inspired by these voices to acknowledge our common ground regarding the hopes and aspirations of our students and learners. We are taking proactive steps to alleviate these problems.”

Dr Nkabane said the government has a moral responsibility to resolve these and other matters as soon as possible.

“All these problems will be fixed in the shortest period possible, or those harmed by the continued fractures will turn on the very system itself,” she said.

The NSFAS has grown from disbursing R21.4 million in 1991 to almost R54 billion in the current financial year, supporting 800,000 students. The fund caters to children of the working class and the poorest of the poor seeking to further their studies in public universities and TVET colleges.

Dr Nkabane said the government introduced the Comprehensive Student Funding Model earlier this year, committing an R3.8 billion initial capitalisation fund to support “missing middle” students effective from this financial year.

This is the category of students from families with total incomes of more than R350,000 but not more than R600,000 per year. The fund covers prospective students for both Technical Vocational Education and Training (TVET) colleges and public university students.

This initial commitment comprises R1.5 billion from the National Skills Fund (NSF) and R2.3 billion from Sector Education Training Authorities (Setas). At least 31,884 prospective learners stand to benefit from this investment.

The National Skills Fund has also contributed R1 billion to establishing a Presidential seed fund to support research and development and innovation in high-end skills involving doctoral and post-doctoral research.

Since its inception, the NSFAS has supported more than five million beneficiaries and produced hundreds of thousands of skilled professionals, especially from the poor and working classes.

“Certainly, this is one of the most important achievements of this government over the past 30 years of our democracy,” Dr Nkabane said.

In April this year, Dr Blade Nzi-

mande, now the Minister of Science, Technology and Innovation, appointed Freeman Nomvalo as the new NSFAS Administrator and simultaneously dissolved the Board. Nomvalo takes over the governance, management, and administration of NSFAS for 12 months ending March 2025.

His task also involves resolving the misalignment of data between NSFAS and institutions, which resulted in the unreliability of data provided to finalise funding decisions and overseeing the opening of the 2025 online applications process.

Dr Nkabane said: “We are working overtime to ensure that NSFAS systems are ready for the commencement of the 2025 application season – which is scheduled to start in September this year. This is critically important because, in this financial year, NSFAS received approximately two million applications for a bursary.”

Of this number, 419,447 were returning students – while 297,809 were first-time entry students.

“Given these volumes, we are doing everything possible to ensure NSFAS systems are ready,” the Minister said.

The NSFAS Administrator Freeman Nomvalo said: “It is undisputed that should this democratic government not have established NSFAS, many of the working class and poor children would not have received post-school educational funding.

“As the NSFAS Administrator, I am here to ensure that the dreams and aspirations of many young people out there are fulfilled through NSFAS.”

Nomvalo asked for time, saying that “great achievements do not take shape overnight. They are the result of continuous efforts, planning, and patience.”

Among the major procurement deficiencies NSFAS identified was the appointment of direct payment service providers, namely Ezaga Holdings, Coinvest Africa, Norraco Corporation, and Tenet Technologies.

Nomvalo said they have begun terminating these contracts.

NSFAS has collaborated with the Special Investigating Unit to ensure investigations take place. All implicated NSFAS employees will be subjected to appropriate disciplinary action, and where appropriate, criminal charges will be pursued against those whose conduct was improper.

THE ROAD AHEAD IS FILLED WITH OPPORTUNITIES

SANRAL is offering scholarships to high school learners from Grades 8-12, irrespective of your subject choice. The SANRAL scholarship is granted based on academic merit and financial need while considering the applicant's background. To qualify for the scholarship, you need to have a minimum of a 60% average pass rate, be a South African citizen, be enrolled at a government approved South African school. Please note that the number of SANRAL scholarships available is limited, and they all will be granted based on academic ability and financial need. For more information and to apply, please visit <https://www.nra.co.za/scholarships> and complete the online application. Terms and conditions apply.

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Education News

Time to honour Freedom Charter architect 'ZK' Matthews

EDWIN NAIDU

When we talk about transforming universities in South Africa or invoking the ideals of the Freedom Charter, one humble name is missing, and there is no national honour that celebrates the contribution of the country's great intellectual scholar, Zachariah Keodirelang "ZK" Matthews, to our democracy.

Generally, we celebrate our heroes when they are no longer with us with beautiful eulogies they ought to have heard when alive.

One of the country's top academic voices – Professor Malegapuru Makgoba – argues that the pivotal contribution of "ZK" Matthews, who died in Washington on 11 May 1968, to democracy should no longer be ignored.

Matthews was the first graduate of the University of Fort Hare in 1924. He was the architect of the Freedom Charter, a document that laid the foundation for our Constitution.

Yet, despite his pivotal role in its creation, his name is rarely mentioned in the same breath as the Charter. He drafted the Africans' Claims in South Africa, which the ANC adopted in 1943. He also chaired the committee that drafted the report on democratic rights, citizenship, human dignity, and anti-colonial national self-determination.

Immense contribution

Earlier this month, celebrating the birth of the country's Constitution on 8 May 1996, President Cyril Ramaphosa missed an opportunity to acknowledge Matthews' immense contribution to the nation and the continent.

He referenced the brave men and women of South Africa who strived together until the democratic changes outlined in the Freedom Charter had been won. But there was no mention of Matthews, who passed away 56 years ago.

Yet, there would have been no charter if Matthews had not begun writing it up. Would we have had such a vision of democracy that would give birth to the Bill of Rights?

Ramaphosa's blandly articulated vision of a free South Africa has its roots in Matthews' work. However, the ANC and other political rivals often ignore Matthews' contributions.

Former president Thabo Mbeki delivered the first ZK Matthews Memorial Lecture in 2001, marking the 100th anniversary of Matthews' birth.



ZK Matthews was appointed acting principal of the University of Fort Hare in the 1950s. This photograph of him, with his wife, Frieda, was taken at a Fort Hare graduation ceremony.

It is a pity that Matthews, who dedicated his intellectual, educational, and political life to the advancement, empowerment, and freedom of the African people, did not live to see his vision realised.

'A humble embodiment of excellence'

The former vice-chancellor of the University of Kwazulu-Natal, Professor Makgoba, describes Matthews as "a humble embodiment of excellence, of non-racialism, of equality, and leadership during an important period of our struggle for freedom".

Delivering the Centennial ZK Matthews Lecture at the University of Fort Hare on 9 May, Makgoba's address was titled 'Achieving the impossible through seeing the invisible...'

In preparation for the lecture, Makgoba read as much as he could about Matthews. He also relied on his research and investigative skills and the generosity of ZK Matthews' family.

This includes his youngest daughter Pulane, son-in-law Zola Ngcakani, former minister Naledi Pandor, Kgosi Matthews, Ambassador Kitty Matthews in Kazakhstan, and others who knew him, such as former intelligence minister Ronnie Kasrils and Professor Barney Pitjana.

Matthews' granddaughter, Dr Pandor, the then Minister of International Relations and Cooperation, was in the audience as Makgoba delivered a 10,000-word speech that made a compelling argument for the esteemed academic and architect of democracy to receive his due recognition.

Not that it is something he would have wanted when he was alive.

Makgoba shared Pandor's reflections: "The character of Prof ZK Matthews, while effective and with solid ideas, tended to prefer the background. Also, he was one of the leaders often in detention or under house arrest.

"Thus, many took credit for what he contributed and did not

acknowledge him. ZK Matthews merely sought to contribute, not to be recognised."

ZK transformed African education

In his lecture, Makgoba argued and provided evidence that ZK Matthews, the academic intellectual scholar, transformed African education through Africanisation and conceived the idea of the Congress of the People and the fundamentals of the Freedom Charter that laid the blueprint for South Africa's non-racial democratic constitution and transformation.

"He was the originator of these ideas, and no one else but him. In many respects, ZK Matthews was intellectually ahead of his time and should unashamedly be given full credit for these and be memorialised more than is currently the case," says Makgoba.

Makgoba adds that this gross failure or omission to memorialise Matthews as a national icon is reminiscent of two other intellectual

giants of our struggle: a Fort Hare alumnus and founding president of the Pan Africanist Congress, Robert Mangaliso Sobukwe, and the founder of Black Consciousness, Stephen Bantu Biko.

Makgoba notes that these leaders sought to assert black identity and confident self-consciousness without hatred of others.

"It's about time we become sensitive in the manner we documented and wrote our history truthfully and gave credit and recognition where it is due."

In his scholarly publications, ZK Matthews argued that "a system of education for the African must rely on Africanisation; that is, the system must be based on the African conceptual and cognitive ideological issues, such as history and culture". He believed that Western and Eastern education systems were not sufficiently constructed in terms of their curriculum to meet the 'needs' of the African people.

For 24 years, ZK Matthews lectured in social anthropology and native law at Fort Hare. His students included Livingstone Mqotsi, Godfrey Pitje, and Nimand Mkele.

Other notable students were Mangosutho Buthelezi, Seretse Khama, Nelson Mandela, Ntsu Mokhehle, Charles Njonjo, and Oliver Tambo.

"As we rightly continue to correct our history as written by our colonial-apartheid masters, let's write our history as it closely resembles the truth and reality of our struggle and time without selective memory or amnesia," says the former Health Ombud. "Perhaps more than ever in our history and development, we need leaders and the leadership quality of Prof ZK Matthews."

Makgoba argues that Matthews should be regarded as a national treasure and be given his due recognition and true stature in our history and celebrated nationally, proudly, and publicly, lest as a people, we become, as Marcus Garvey said, 'like a tree without roots'.

"Around 1953, with his family at lunch, Professor ZK Matthews shared his vision of the country we [South Africa] would become in 1994. He was a man of Isithunzi" (an isiXhosa word meaning a person of dignity).

Was ZK Matthews so ahead of his time that he is now forgotten? As Makgoba rightly points out, the struggle did not begin with nor is it synonymous with the ANC. One hopes that Ramaphosa rectifies this the next time he refers to the Freedom Charter. – ©Higher Education Media

Education News

Inside Education Foundation celebrates Mandela Day

JONATHAN PAOLI

In celebration of the late President Nelson Mandela's birthday on 18 July, South African organisations and individuals took 67 minutes to give back to communities and society's vulnerable by supporting those in need.

For this year's Mandela Day celebrations, Inside Education Foundation and its staff members visited the Ubuhle Bezwe Child Care Centre in Thembisa. They donated clothing and spent the day cooking and serving food for the children and people living in the area around the centre.

"Mandela Day provides a poignant reminder of the importance of community service and solidarity. By spending a day at Ubuhle Bezwe, Inside Education Foundation honoured the legacy of Madiba and reinforced its commitment to social responsibility and community upliftment," said Inside Education Foundation chairman Matuma Letsoalo.

The Ubuhle Bezwe Children's Home was established in 2002 by Barbara Mthimkhulu, a professional nurse.

It provides voluntary services to disadvantaged children and day-care services to senior citizens. It also takes in those who have suf-

fered gender-based violence, abandonment and sexual crimes.

"When we started, most children were coming from child-headed households, some were orphaned, and others were taking care of their grandparents and could not attend school regularly," Mthimkhulu said.

Social workers visit the home monthly and the police come weekly to monitor security concerns.

Some of the key elements of the organisation's mission include providing basic life skills, developing self-confidence, and boosting self-esteem; providing shelter and support to vulnerable children; promoting youth awareness programmes in and around the Thembisa community; and emphasising the importance of education and developing learning skills.

While grateful for the support Ubuhle Bezwe receives, Mthimkhulu said a lack of funding to improve the facilities remains one of the biggest challenges. She has had to prioritise food and essential groceries for the children over upgrades to the building and infrastructure.

On the bright side, however, Mthimkhulu proudly said that all of Ubuhle Bezwe's children have succeeded in school. The home encouraged a rigorous education



Inside Education Foundation chairman Matuma Letsoalo helps dish up food for the children of Ubuhle Bezwe



No matter how young, the youth always have time for social media



Matuma Letsoalo and Ubuhle Bezwe founder Barbara Mthimkhulu



Inside Education Foundation's Special Project Manager Faith Murumbi, Graphic Designer Andile Mbele and Sales Executive Tebogo Majokana dish up



Sales executive Mangaliso Modjaji has a silly moment with the children posing in front of the camera

regime, ensuring the children remained focused on their school work and motivated to make something of their lives.

The centre's success stories in-

clude Ayanda Maghagha, a qualified doctor; Simphiwe Maghagha, an engineer; Portia Tsotetsi, a teacher; Mbali Dubuzana, a social worker, and Precious Matinketsa,

Miss Thembisa 2010. "Children are the future, and when they positively contribute to society, we feel proud that we have achieved our mission," she said.



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Leadership

A high-level insider's view on the South African leaders since the

MALEGAPURU MAKGOBA

I have known and worked with Dr Sibongiseni Maxwell Dhlomo, the former Deputy Minister of Health, since 1985, when he was a final-year medical student at the Nelson Rolihlahla School of Medicine, UKZN.

We became friends because he often drove me to my residence after school. He was part of a group of young students including Drs Steve Komati, now a physician and Victor Ramathesela, a sports medicine specialist who is also a DJ and a television commentator.

Also deserving of mention are Aquina Thulare, a senior official responsible for the management of the NHI, Prof Maphoshane Nchabeleng who is head and professor of Microbiology at Sefako Makgatho Health Sciences University and the late Tshimibiluni Mathivha who was a professor of Cardiology at the University of Pretoria.

Bongani Mawethu Mayosi was a Professor of Medicine at UCT and I often tutored them and gave them extra clinical tuition over weekends at the King Edward VIII Hospital. My goal was to encourage these medical graduates to take postgraduate research studies after qualifying rather than tak-

ing the option of private practice, which was very popular at the time.

Bongani was much younger and was behind the Sibongiseni Group at medical school. Happily, they all took my advice and are playing important roles within the health system.

Dr Dhlomo was arrested and detained over Christmas in 1985 and his father often visited my office to share his pain and to search for his whereabouts.

During these visits he was often accompanied by Nozizwe Charlotte Madlala-Routledge, the chairperson of the Natal Organisation of Women (NOW).

He was sentenced to imprisonment on Robben Island but we maintained contact. He

continued studying psychology and sociology while on the island, completing a BA degree through UNISA and I provided him support.

I then received a large case document from Gay Johnson MacDougall, a well-known Human Rights lawyer at the US Congress, and was requested to provide a character reference for him, which I gladly did.

After his release, Sibongiseni Dhlomo served as special advisor to the vice-chancellor and as a member of the Interim Executive Committee at the establishment of UKZN in 2004, and we continued our working relationship when he joined the KZN Department of Health, later becoming a MEC for Health and chaired the Health Portfolio Committee

in Parliament. I worked with him as Health Ombud when he was Deputy Minister of Health. Dr Dhlomo is a coordinator, he is gentle, caring and passionate about South Africa's success but in particular is dedicated to South Africa's national health system and its quality.

He is an ardent advocate for the National Health Insurance Bill. Dr Dhlomo understood the political dynamics and culture of KZN better than I ever could.

I also served with Minister Pravin Jammadas Gordhan, a shaper in Belbin's team role categorisation. Gordhan is a Minister with a penchant for interference and at times undermines the people he appoints, so much so that at times he is referred to as minister of 'Command and Control' (notably by Ghaleb Cachalia of the Democratic Alliance (DA)).

Gordhan was the Minister of Public Enterprises. I initially chaired the Social, Ethics and Sustainability Committee of the Eskom Board chaired by Dr Jabu Mabuza. I was subsequently appointed as interim chairperson of the Eskom Board when Jabu Mabuza resigned, and he later passed away.

Our mandate was to stop the widespread looting of state capture and set up principles of good corporate governance at Eskom. I served a full term on the Board and the Minister requested me to continue serving while he reviewed – rather than replaced – the Board.

For 18 months this review continued, but it was never finalised despite several reminders, requests and empty promises that he would address the matter urgently.

However, the Minister kept ducking and diving; he was as slippery as an eel. However, much later he did confirm that he had 'done what he could' in complementing the board.

He then claimed that the matter was now 'out of his hands'. Was it stuck at the ANC Cadre Deployment Committee, asked Radio 702's Clement Manyathela.

But Gordhan would not be drawn in and would not say. We respected each other but for some unexplained reason, there seemed to be a trust deficit between us.

I served in the Eskom Board that prepared Eskom's presentation to the Zondo Commission on state capture; a board selection committee that interviewed and recommended Andre de Ruyter's appointment as GCE; and a Board that initiated the implementation of the unbundling ('divisionalisation') of Eskom into three divisions, namely Transmission, Distribution and Generation as required by government.

But the process was delayed by the Department of Public Enterprises and the Minister, who dragged their heels in appointing the independent board of the Transmission Company.

As Anton Eberhard explains in his article headed 'Ministers have let Ramaphosa down on the unbundling of Eskom' in BusinessDay of 16 January 2023, the Board that under Ms Mandy Rambaros led the Eskom Transition Programme, which is now entrenched.

And when the ambassadors of the UK, USA and the EU, visited South Africa to consider and finalise the USD8.5 billion financing for approval at COP26, they needed to know and confirm that the Eskom Board supported this venture.

The Board did indeed support this programme fully. The same Board had reported several high-level state capture-related cases of corruption and looting to the SAPS and courts without much progress.

The same Board had recovered some looted monies from a few companies such as ASEA Brown Boveri (ABB). This was the same Board that worked jointly with the NPA and SIU; a Board that initiated the Eskom Skills Audit and Organisational Culture Change with Ms. Elsie Pule, executive HR; a Board that together with Phillip Dukashe, executive generation; Jan Oberholzer, chief operating officer; and Calib Cassim, chief financial officer, identified the three troublesome power stations, namely Duvha, Majuba and Thuthuka, for focused external supervision and support.

The same Board also reversed a major decision on the Econ oil tender, saving Eskom approximately R10b. I served on a Board that provided the Minister and the President with a comprehensive response to the Zondo Commission's report.

The Board I served refused to approve the Karpowership tender for its 20-year term and lack of indemnity; I served on a Board that jointly, with the executive, prepared the ba-

sis for the so-called Presidential Energy Crisis Action Plan to 'fix Eskom'. The plan was prepared in conjunction with a small team of experts in the electricity field. The team of experts was chaired by Dr Bonang Mohale, President of BUSA, and Prof Anton Eberhard and Chris Yellen were members of the team.

This plan had been in the making since Andre de Ruyter was appointed GCE of Eskom on 6 January 2020 and was now well defined. The plan was initially shelved and disregarded by the Minister of Public Enterprises over time, only to be resuscitated when the disquiet, pressure and crisis of load shedding was mounting.

The plan had been modified and refined over this period but essentially it retained the basic elements of 'additional megawatt capacity and fixing the Eskom plant'.

The load shedding crisis has gone on for too long. It not only impacts on the wellbeing and lives of South Africans but also on the economy and development of the country. It is a crippling crisis.

It is common cause that the Eskom coal fleet was poorly maintained for a long time. Equally, we know that there was a period when Eskom Executives were instructed to keep the lights on at all costs i.e., running the units hard beyond their capacities.

The units are completely run down, becoming unpredictable and unreliable with multiple repeated breakdowns. That is the reality staring at Eskom's executive management.

No amount of political shouting, screaming or intimidation can correct this. These machines are simply following the laws of physics, mechanics and not politics.

Politics and ideology will never resolve the electricity crisis. The ANC-led government has over 15 years failed abysmally to resolve the Eskom crisis using politics and ideology.

How many times or how long must/should you fail before you recognise that the method or approach does not work. Some of the ANC politicians have very little understanding of the complexity of the electricity problem and its solution.

The level of understanding is underscored by timeframes for stopping load shedding. Some government ministers claim to be able to stop load shedding in six months; others at the end of the year; yet others in two years and others have no clue.

For a long time, the Board of Eskom advised the Minister that it was impossible to expect the current Eskom fleet to attain a 75% energy availability factor (EAF). However, the Minister would not budge, and despite this advice, he insisted that the 75% EAF must be achieved.

We were later promised an EAF of 60% by 31 March 2023, however

recused or removed from Eskom.

Experts in the field of electricity should be brought in to resolve the crisis.

The experts must be given a specific mandate and be left to resolve the crisis without political meddling or interference.

The experts must be given autonomy to practise their trade.

The approach used for COVID-19, of appointing an independent ministerial advisory committee of health scientists with modifications should be adopted i.e., appoint top-class experts in electricity.

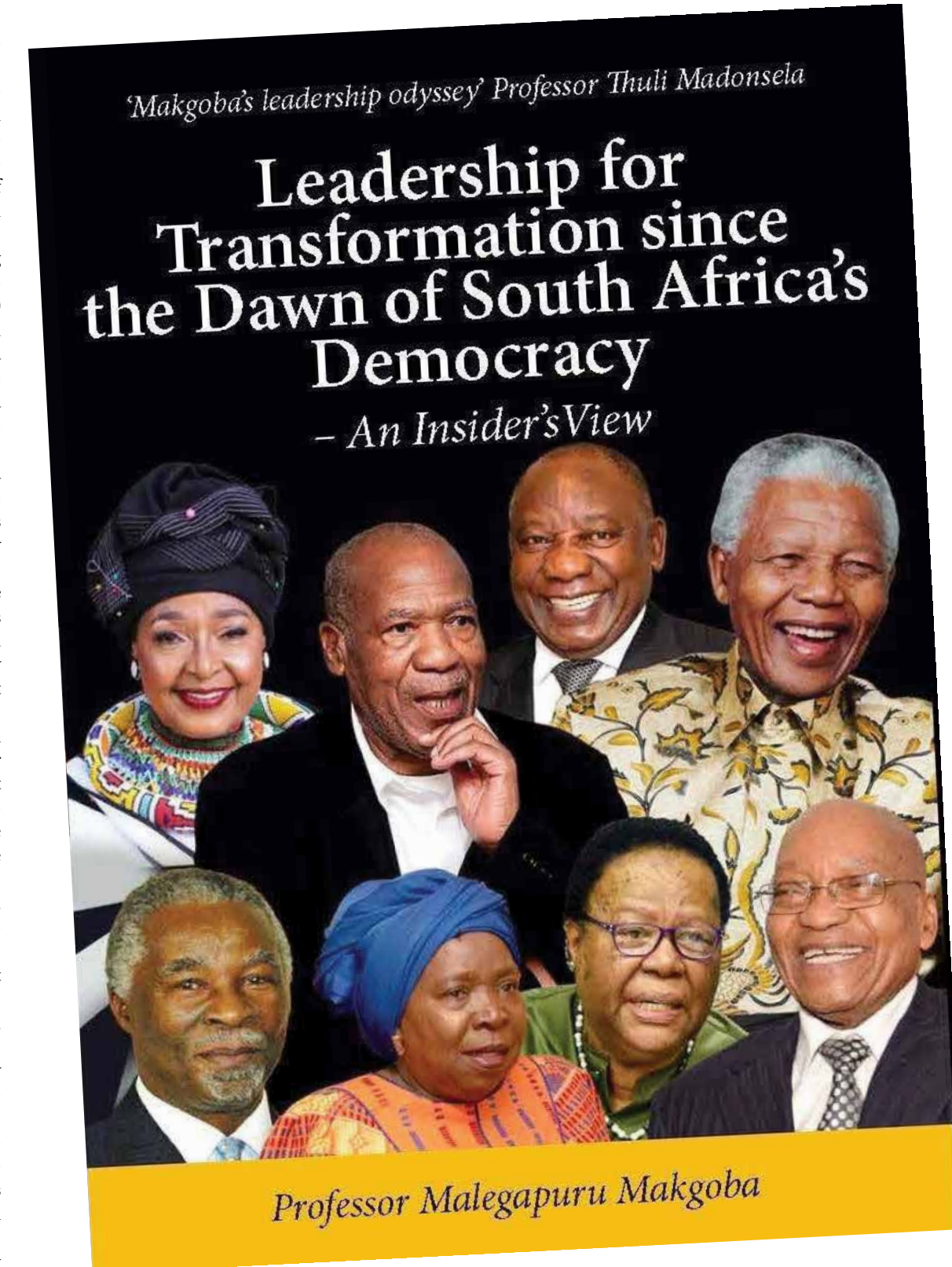
Politicians cannot suddenly become electricity scientists or experts through briefings or surfing the internet. It's admirable that

Professor Malegapuru Makgoba shared reflections on leadership lessons.



Leadership

performance or lack of it among the dawn of a new era in 1994



Cover of the latest book by Professor Malegapuru Makgoba

the measured EAF on that date was recorded as 52%. A real mismatch between politics and science and technology.

Electricity generation is a complex scientific and technological process. The generation of electrons does not understand, listen to, or read Das Kapital.

To resolve this ongoing crisis, the following should happen:

1. Read and internalise the recommendations on Eskom contained in the NDP, dated August 2012.
2. Resolve and re-align policy and governance uncertainty at Eskom.
3. Politics, ideology, politicians and politically-aligned senior staff, cadre deployed or not, should be

recused or removed from Eskom.

Experts in the field of electricity should be brought in to resolve the crisis.

5. The experts must be given a specific mandate and be left to resolve the crisis without political meddling or interference.
6. The experts must be given autonomy to practise their trade.
7. The approach used for COVID-19, of appointing an independent ministerial advisory committee of health scientists with modifications should be adopted i.e., appoint top-class experts in electricity.
8. Politicians cannot suddenly become electricity scientists or experts through briefings or surfing the internet. It's admirable that

they are briefed, but this does not convert them to experts, so they should remain humble.

9. The re-purposing programme of the current Eskom coal fleet must be accelerated to avoid a total grid collapse.
10. Koeberg needs an extension for another 20 years. After 20 years Koeberg will be shut down.
11. So, to plan for the future, and for the development of South Africa, a needed mix of energy is required. We should therefore start building a new Koeberg now and possibly double the capacity of the current grid. These actions must commence now.
12. Importantly, we must suspend ad nauseum dead-end debates ... and implement.

President Ramaphosa has been let down by his own ministers. DA leader John Steenhuisen pointed this out to the president's Security cluster ministers during the 2021 July riots.

The probe on the Digital Vibes scandal and the then Health Minister is 'ongoing' two years later; and Prof Anton Eberhard called a spade a spade when he pointed out how Minister Gordhan has let down the President on the Eskom electricity crisis.

However, the President retained these Ministers who failed him and the country, but critically he gave them the authority to resolve the crisis. Surely this was ill-advised, if not foolish.

As Albert Einstein once said, 'We cannot solve our problems with the same thinking we used when we created them'. The definition of a fool is someone who does the same thing repeatedly, expecting different results.

This is what the ANC government has done for the past 15 years. The president's cabinet by all assessments was the weakest to lead the country, deliver services and understand planning and strategy.

This was a cabinet very allergic to implementation. However, it was his cabinet. If birds of a feather do flock together, then the President and Minister Gordhan were amongst these 'flocking birds'.

Finally, a private security company was hired to investigate the threat of sabotage and corruption. During this period the budget deficit was gradually reduced and corporate governance was improved.

I am a firm believer that the face of an organisation is its Chief Executive Officer rather than its board chairman; that the role of the board is oversight and strategic and not operational, meddling or 'activist' as former Minister Gordhan seemed to believe.

There is no clause for activism in the Company Act or the King Code of Corporate Governance; I also believe it is not the business nor the competence of the board chairperson to conduct annual assessments of the board members.

Members of the board are senior and experienced individuals who do not need this type of 'kindergarten control' or assessment. I also believe that the role of the board is not only to hold the executive accountable but also to 'support' and 'guide' them to succeed in their operational task.

That Eskom is in a mess and continues to be messy is a tendency that began in the late 1990s because of ANC policy 'missteps and a failure to take advice from experts'.

This current mess has been two decades in the making. This is common cause, as both President Mbeki and President Ramaphosa have ac-

Continued on page 14



Leadership



Continued from page 13
knowledge.

The ruling party must take full responsibility as the two Presidents have done. However, the relevant Ministers did not accept the blame. They continued to speak with forked tongues and at times they contradicted one another to create policy uncertainty.

It is indeed ironic that the very ministers who were part of the chain of command that led to the mess at Eskom were given the authority to get rid of people who were trying their best to solve the Eskom problem.

They should have been removed and would have been removed in a normal democracy, but ours is not normal; it's a 'miracle' democracy.

When Ms Busi Mavuso, a member of the Eskom Board, had the so-called 'robust' exchanges with Scopa and its chairperson, Honourable Hlegwa, the Department of Public Enterprises criticised her conduct publicly.

All Busi had said was that the ANC government must take accountability and responsibility for the mess Eskom is in, something which is common cause.

She was not given credit but was instead criticised harshly. I then received a strange phone call from the Department of Public Enterprises instructing me 'to do something about this board member'. The tone and subtext I understood to mean that I should reprimand or ask her to step down from the board. Instead, I called a board meeting to discuss the matter and her stance was unanimously supported.

Judging by the degree of load shedding, Busi must be having the last laugh. In a Mail & Guardian article dated 20 to 26 January 2023 and titled 'The Eskom Killers', of the 24 'killers' listed 13 (54.2%) were politicians and seven were politically-Gupta related appointees, the three Gupta brothers and Tshediso Matona, who was unceremoniously removed as GCE, allegedly on the instructions of former president Zuma and the Gupta-appointed Board of Mr Tsotsi and Dr Ben Ngubane.

Importantly, Minister Gordhan features amongst this illustrious group. Politicians, politics and ANC ideology 'killed' Eskom in a period of just over 25 years through cadre deployment, looting and confusing good corporate governance with stealing.

Minister Pravin Gordhan is a struggle veteran, the former Commissioner of SARS who set the foundations



Former President Thabo Mbeki was likened to a business CEO

of the revenue service on its way of excellence, world-class performance and success, the Minister of Finance and a qualified pharmacist.

He is a graduate of UDW and a role model for many students and political activists of the time. A man of principle and integrity who understands business and finance.

He is committed to excellence and the success of our young democracy. He eschews corruption and worse widely is a passion for interference, intervention, micromanagement, meddling behaviour and undermining the board and executive.

His greatest weakness is as popularly experienced and reported widely is a passion for interference, intervention, micromanagement, meddling behaviour and undermining the board and executive.

He has a misguided belief that his way is the only way to solve complex problems. Contrary to reports of alleged racism by Themba Godi and Adv Dali Mpofo SC, I never observed or experienced racism from Pravin Gordhan. He is not a racist.

Some journalists often inquired how I 'got on' with Minister Gordhan because of the way he treated them with disrespect and at times arrogance. He remains in total denial of the many cumulative failures of the government and his department in the electricity crisis and the policy contradictions that continue to confuse the operations and governance of Eskom under his former

property destruction at Eskom.

The Minister appreciated very little of the pervasive toxic, racially charged environment of Eskom between workers and the management.

This toxic environment affected the strategies and pace at which one could undertake transformation. There was little understanding of this critical factor.

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this of Pravin Gordhan in an article in the Mail & Guardian of 16 April 2017 titled 'Gordhan only deals with people who say 'Yes Baas' to him. "He enjoys harassing other people; he enjoys chastising other people; he enjoys bullying other people. It's his hobby. He wants to be followed by everyone. He has feelings of grandeur. He thinks he is bigger than everyone in the world'. He tends to butt heads with independent, thinking people.

Nothing comes this close to describing a Messiah!

I do relate to these descriptions. His legacy is in setting up a world-class South African Revenue Service (SARS) and fighting state capture corruption, but he is the Minister who failed to defend Eskom and Mr Andre de Ruyter while Andre was under attack from his cabinet colleagues, and failed the country at Eskom and other SOEs such as SAA, despite his long illustrious struggle career.

Perhaps South Africa is not only a 'miracle democracy' but also a country blessed with emerging Messiahs. With so much discord within Eskom, so much policy and governance confusion, so much racial tensions, low trust deficit and poor political leadership, transformation at Eskom was impossible to undertake.

In total I served with seven cabinet ministers and one deputy minister in the 5th and 6th Administrations.

It is now apparent that ministers Sibusiso Bhengu, Nkosazana Dlamini Zuma, Ben Ngubane, Kader Asmal, Naledi Pandor, Trevor Manuel, and Aaron Motsoaledi distinguished themselves in advancing transformation in their respective portfolios.

They all had deep knowledge and understanding of their portfolios. Their legacies are a testimony to their works. In contrast, Ministers Manto Msimang-Tshabalala, Essop Pahad, and Pravin Gordhan have let the transformation project down.

President Mandela was royalty and unquestionably belonged to a different generation and type of leadership (being traditional, sophisticated and championing a modern democracy); President Mbeki was like a business company CEO.

This is an edited excerpt from Malegapuru Makgoba's Leadership for Transformation since the Dawn of South Africa's Democracy, which is available at local bookstores for R360.

Youth

AI presents a transformative opportunity for SA's youth

ALUWANI CHOKOE

As the National Youth ICT Council, we recognise AI's potential to drive economic growth, enhance educational outcomes, and foster innovation.

However, the integration of AI must be strategically managed to ensure it benefits all segments of society and mitigates potential risks.

For a country like South Africa with a youthful demographic, Artificial Intelligence should be leveraged to address significant socio-economic challenges such as unemployment, skill gaps, and inequality.

AI can transform education by personalising learning experiences, automating administrative tasks, and providing intelligent tutoring systems. These advancements can help bridge educational disparities and enhance the quality of education for young South Africans.

Additionally, incorporating AI into the curriculum will prepare students for future job markets.

We have all borne the brunt of watching our fellow sisters and neighbours become educationally excluded when institutions and private schools conducted learning online during the COVID-19 global pandemic.

AI can bring many benefits

AI can support community development through smart city initiatives, improved public services, and enhanced safety measures. For youth in underprivileged areas, this means better access to resources and opportunities for community engagement and leadership.

Furthermore, AI can stimulate economic growth by increasing productivity, fostering new business models, and creating high-value jobs.

AI can benefit the finance, retail, and telecommunications sectors through automation and improved decision-making processes. For the youth, this translates into opportunities for entrepreneurship and employment in emerging AI-driven industries.

AI can also solve challenges in several other areas. The National Youth ICT Council recently hosted the Gauteng Campus Innov8 Hackathon, which was themed "Infrastructure Security in Local Government."

The theme aligned with the UN's SDG 9: Building Resilient Infrastructure and Fostering Innovation.

The explosion in Bree Street in Johannesburg last July has emphasised the need for innovative infrastructure monitoring and security solutions.

This is one example of how AI can be used to generate potential solutions. We have also tried to purpose the hackathons to address the particular challenges that the different provinces face.



Aluwani Chokoe is the Spokesperson and Head of Policy, Research, and Development for the National Youth ICT Council. She spoke on 'Youth and AI: A New Frontier', at the Huawei ICT Editors Exchange.

For instance, we've hosted one focused on the transportation and logistics industry in KwaZulu-Natal. This event linked the South African economy through the key cargo routes of the N2 and N3.

This resulted from the numerous truck accidents along the N3 route.

The hackathons we host aim to allow the youth of South Africa to showcase their innovation and robotics skills that address a particular problem within society.

The benefits of AI are not evenly distributed, and there is a risk that existing digital divides could widen. Youth in rural and underserved areas might be left behind without access to AI technologies and related education.

Ethical issues

By the same token, AI systems can raise ethical issues, including algorithm bias and privacy infringements. Addressing these concerns is crucial to ensuring AI development aligns with South Africa's values and legal standards.

An overarching question that befalls all of us is the role of influencers and opinion makers in shaping the youth's perception of AI.

While influencers shape the narrative and have become an indispensable part of communication, informing audiences, especially young ones, about various topics, their popularity, reach, and impact, combined with the youths

demand, are age-appropriate, entertaining, and understandable.

By the same token, so are opinion leaders

At this event, we are among the most prominent influencers in public opinion, representing the most important variable in the cognitive construction of the theory of information flow.

They are the most credible sources and can influence perceptions around Artificial Intelligence and the Fourth Industrial Revolution (4IR).

They communicate to produce a specific effect that may agree or disagree with the message. Influencers and opinion leaders inform and shape opinions.

Influencers and opinion leaders

What is our role as it relates to influencers and opinion leaders? The Information Sciences Letter, an international journal, posits that our duty, and the duty of leading institutions in the Fourth Industrial Revolution, is to enhance influencers' skills through workshops and training programs, focusing on positive interactions, chiefly the humanitarian aspects.

As an essential part of an information network, influencers and opinion leaders can dismiss the myths around AI, and the Magic Bullet Theory supports this.

The magic bullet theory suggests that "individuals are affected by the content of the media outlet automatically and directly, and this theory also assumes that the media has a strong and direct influence on the individual and societies, similar to the bullet in its impact, but its effect is short-term".

Regarding the future aspirations of the youth regarding AI and tech careers, The National Youth ICT Council has boldly stated that we want South Africa to become a global source of tech talent.

Our country and continent have played a spectator role in the epochs of all industrial revolutions. The youth, comprising a significant portion of South Africa's population, are the most impacted by technological changes and the most capable of driving innovation.

Leveling the playing field

Engaging young people in AI development and deployment is crucial for sustainable growth. To level the playing field, we, as the National Youth ICT Council, have been largely advocating for digital infrastructure and significant investment in 4IR.

While we welcome the efforts by the South African government to ensure that public schools produce technologically advanced learners who will be able to use robotic solutions and smart technologies to solve the various challenges in their com-

munities with the amendment of the school's curriculum to include robotics in the Grades R to 9 syllabuses – chief among the frequent reports we have requested from the Department of Basic Education is progress made in relation to building secure and dedicated Coding and Robotics labs, internet access, hardware components, and the training of teachers.

This will determine areas that require intervention that the various stakeholders can assist in. In support of the above, we have also called on the various stakeholders within ICT to lend a helping hand to our government.

This is a positive step towards building the digital society we all envisage as South Africans, and we all need to play our part.

We envision South Africa as a technological hub and mecca of Africa and the diaspora. In support of the above statement, we will continue to make various calls for all the stakeholders, and the government in particular, to ensure that there's economic and entrepreneurial support through the establishment of AI innovation hubs and incubators to support young entrepreneurs and startups, providing access to funding, mentorship, and resources.

Along with this is advocacy for tax incentives and grants to businesses that invest in AI research and development, particularly those that create jobs for young people. Our overarching desire is to bridge the digital divide through infrastructure development, particularly in rural and underserved areas, to ensure equitable access to AI technologies.

This includes implementing policies to make internet access and digital devices affordable for all, reducing barriers to AI adoption and launching community-based programs to raise awareness and provide training on AI, targeting marginalised and disadvantaged youth.

Artificial Intelligence holds immense potential to transform South Africa's socio-economic landscape, particularly for its youth. By strategically investing in education, infrastructure, and ethical frameworks, South Africa can harness the power of AI to drive inclusive growth and development.

The National Youth ICT Council is committed to advocating for policies that empower young South Africans to be at the forefront of this technological revolution, ensuring a future where everyone can thrive in an AI-driven world.

Aluwani Chokoe is the Spokesperson and Head of Policy, Research, and Development for the National Youth ICT Council. This article is based on her speech, 'Youth and AI: A New Frontier', at the Huawei ICT Editors Exchange.

Advertorial



FP&M Seta is boosting SA's growth

FP&M Seta welcomes new Higher Education Minister & Deputies

The Fibre Processing and Manufacturing Sector Education and Training Authority (FP&M Seta) Chief Executive, Dr Felleng Yende, welcomes the appointment of Honourable Dr Nobuhle Pamela Nkabane as South Africa's new Minister of Higher Education and Training.

"As the FP&M Seta, we look forward to working with the Honourable Minister to produce knowledge, help create jobs, and alleviate poverty in South Africa. We aim to equip South Africa with the skills to address unemployment," says Dr Yende, adding that the FP&M Seta applauded the Honourable Minister Nkabane's example of being a "lifelong learner".

"We are inspired by her vision for the higher education and training sector, which aims to empower graduates to contribute to the body of knowledge while enabling the government to make informed decisions to tackle the country's socio-economic challenges," says Dr Yende.

FP&M Seta also welcomes the appointments and reappointments of Honourable Dr Mimmy Gondwe and Honourable Buti Manamela as Deputy Ministers of Higher Education and Training, respectively.



Dr Nobuhle Pamela Nkabane, Honourable Minister of Higher Education and Training

The FP&M Seta is committed to boosting competitiveness and the rural township economy through future-perfect skills interventions.

FP&M Seta facilitates skills development programmes in 13 sub-sectors: clothing, footwear, forestry, furniture, leather, packaging, printing, print media, textiles and wood products.

Dr Felleng Yende, the FP&M Seta Chief Executive Officer, says while the authority's core business mandate is to facilitate skills development services in challenging subsectors, creating opportunities for people in townships and rural areas is not just a priority but a necessity that aligns with the government's Medium-Term Strategic Framework priorities.

"We are mindful that unemployment is a critical issue in South Africa. Statistics South Africa (Stats SA) shows the official unemployment rate is 32,9%," she says.

Dr Yende says the number of people not employed or in education and training is estimated at 3.6 million, according to Stats SA. As



Dr Mimmy Gondwe Honourable Deputy Minister of Higher Education

such, amplified skills development interventions to stimulate jobs in townships and rural areas are vital to FP&M Seta's mission.

"The Honourable President Matamela Cyril Ramaphosa highlighted the imperative of building the economy and job creation in his



Buti Manamela is the Honourable Deputy Minister for Higher Education

address during the opening of Parliament on Mandela Day, 18 July 2024," Dr Yende says.

"He noted that despite the

achievements of 30 years of democracy and the work undertaken over the last five years to rebuild the economy, millions of South Af-

Advertorial



The training authority is promoting industry competitiveness and the rural and township economy through future-perfect skills interventions

ricans remain unemployed.

"The economy has barely grown for a decade and a half, leading to the Honourable President Ramaphosa's pronouncement of the drive towards inclusive growth and job creation over the next five years."

Dr Yende says the FP&M Seta is constantly refining its approach to identifying businesses willing to collaborate and match their high-impact training initiatives to inject productivity and profitable operations, yielding job creation and entrepreneurship that contributes to economic growth.

The CEO is keen on encouraging learners to participate in an SMME/entrepreneurship stream, where businesses can mentor them, fostering a sense of hope, inspiration and dignity.

"Digital skills, employability, and entrepreneurship are at the core of learning," Dr Yende says. "To this end, FP&M Seta has embedded digital skills in its occupationally directed qualifications framework, as they have become imperative for relevance in the evolving markets."

"Our mandate is to engage meaningfully with the industry to identify initiatives through which learners can actively participate in the country's economy, also promoting work-integrated learning from TVET Colleges and other higher education institutions. Youth is the future, and they cannot be left behind."

FP&M Seta's interventions have remained relevant and fit for purpose to the industry's needs. According to the research, there is an approximately 70% absorption rate post-training. Seta is placing more effort into training apprentices, as this training opens up more opportunities for employability and sustainable jobs.

In addition to addressing unemployment, Dr Yende believes that the FP&M Seta should create opportunities for learners with disabilities by identifying flagship projects that address felt needs. Learners with disabilities remain a priority for the Seta, and more work will continue.

Furthermore, she says the Seta is aligned with the National Development Plan, which aims to produce 30,000 artisans annually by 2030. The White Paper for Post-School Education and Training emphasises greater coordination, effectiveness, and synergy amongst PSET institutions to address the trans-



Dr Felleng Yende says the FP&M Seta is committed to boosting the township and rural economy

formation imperatives.

It is most encouraging that during audits, the Auditor-General of South Africa stresses the im-

portance of implementing an integrated system, which will reduce duplication of learners and create a greater reach of unemployed

young people who need training.

Ahead of National Women's Month in August, Dr Yende says a good leader is humble, re-

sults-driven, flexible, competent, and a clear communicator.

Certainly, integrity and trust are critical to being a good leader, too, Dr Yende adds, saying that a results-driven mindset cannot be achieved without incorporating humility, creating a conducive work environment for workers, and investing in excellence and best practices.

Dr Yende argues that creating a culture of high performance is possible through clear communication and trust, strengthened by leadership embracing digital technology.

"Digital technology is essential in leadership. Research has demonstrated that more employment opportunities are created when digital technology is part of training."

Since Dr Yende was appointed Chief Executive Officer, the FP&M Seta has achieved ten unqualified audits by the Auditor-General of South Africa with seven clean audit outcomes.

"Our mission is to continue to build future-perfect skills, support sustainable job creation opportunities, entrepreneurship, upskill workers and youth in township and rural areas, and work-integrated learning in partnership with TVET Colleges and other higher education institutions. This will contribute to addressing our country's unemployment challenges and making the industry competitive," concludes Dr Yende.



Entrenching democracy, media diversity and gender equality in South Africa and beyond by skilling, funding and promoting women media leaders and entrepreneurs.



Gender

Women lag behind men in the



Professor Xoliswa Mtose - University of Zululand



Professor Sibongile Muthwa - Nelson Mandela University



Professor Rushiella Songca - Walter Sisulu University

EDWIN NAIDU

Gender equality in higher education remains a huge challenge and a work in progress.

The article, "Gender Perspectives on Academic Leadership in African Universities", published in the International Journal of African Higher Education, 2023, by academics Roseanne Diab, Phyllis Kalele, Muthise Bulani, Fred K. Boateng, and Madeleine Mukeshimana, found that women are underrepresented in higher education leadership worldwide, with the gender gap more pronounced in Africa.

Statistics for selected African countries confirmed the underrepresentation of women leaders in the study funded by the International Development Research Centre in Canada.

In 2021, only six of the 26 vice-chancellors (23%) in South Africa were women, while two of the 12 vice-president positions (17%) at three Ethiopian public universities were occupied by women. Their

findings show that only 24% of the top 200 universities in the Times Higher Education World University Rankings have a female leader.

Given that the world average for women faculty representation in tertiary education institutions increased from 33.6% in 1990 to 43.2% in 2020, the writers found the gender gap in leadership is striking.

The study covers Ethiopia, Ghana, Kenya, Nigeria, Rwanda, Senegal, South Africa, Tanzania, and Uganda.

Its objectives were to present gender-disaggregated statistics on senior leadership at each university and make recommendations that would assist in closing the gender gap in senior leadership.

A general pattern of under-representation

While the percentages differ regionally and depend on the sample of universities included, the general pattern of under-representation of women in senior leadership is upheld. For example, women comprised 29% of vice-chancellors

(VCs) in the United Kingdom (2018 statistics), increasing from 17% in 2013 to 22% in 2016. In the European Union, 24% of all heads of higher education institutions in 2019 were women.

Notably, 22 countries in Europe had no female university leaders. According to an American College President Study, in 2016, 30% of all college presidents in the United States were women.

The gender gap in leadership in Africa is even more pronounced. The article in the International Journal of African Higher Education states that the underrepresentation of women in academic leadership is a challenge from a social justice perspective and a failure to tap into a population's full capacity.

According to the paper, women occupy lower ranks at universities, and only a tiny number make it to the top.

Some studies cite individual factors such as a lack of self-confidence (imposter syndrome), a lack of ambition or women's reluctance to apply for senior management roles

because of sexist cultures in institutions, messy politics, or challenges with work-family balance.

Universities' gendered institutional culture tends to be biased towards male academics, with women academics being constrained by social sanctions that range from hostility to outright rejection.

Continuing gender disparities

"Thirty years is usually considered a significant milestone. Often, it suggests maturity and some certainty about how things should be done. It is, therefore, disheartening that our reflection on how we are doing on the gender question since 1994 illustrates continuing gender disparities," says Brightness Mangoloth, the executive director of Higher Education Resources-South Africa, and Grace Khunou, chairperson of the Transformation Management Forum, which is driving transformation at UNISA.

Mangoloth and Khunou argue that male vice-chancellors can serve

more than two terms, with others holding vice-chancellor roles in more than one university.

"Currently, we have 20 male vice-chancellors, a scenario that has been the case since 1994. Given the five-year tenure of vice-chancellors, each university had six chances/terms to appoint a female leader, which equals 156 positions (26 x 6) in the 30 years of democracy," they point out.

"There were more chances if there were 36 universities before the merger, and some vice-chancellors stepped down before the end of the term. The question is, why has this yet to happen?"

Their research shows that universities were created for men by men, and this is still largely true.

"These disparities are especially troubling when we use an intersectional lens – we find that fewer and fewer of these roles are held by Black women who, when they do, are vilified.

"Although much has changed in higher education to advance transformation, the Ministerial Commit-



Gender

ivory towers of learning



Professor Thoko Mayekiso - University of Mpumalanga



Professor Brenda Gourley - University of KwaZulu-Natal



Professor Puleng LenkaBula - Unisa

tee Report shows the lack of women academics, especially Black women, and the continuous toxic space in which they find themselves, which arrests their success."

Little progress

They argue that if women are held back in academia and society in general, these goals, with a 2030 deadline, are doomed and remind us that in South Africa, 30 years after democracy, there has been little progress. Women continue to lag behind incumbents who pay lip service to gender equality.

Since 1994, there have been 20 women vice-chancellors in South Africa. The first was Prof Brenda Gourley at the University of Natal (now the University of Kwa-Zulu Natal), followed by the University of Cape Town, where Dr Mamphele Ramphele was appointed the first Black female vice-chancellor in 1996. Some institutions have not had a woman leader since democracy.

Those institutions that have had women vice-chancellors have not replaced them with female

vice-chancellors, except the University of Zululand, which had two female vice-chancellors (Prof Rachel Gumbi, 2003 and Prof Fikile Mazibuko, 2010) before the current female vice-chancellor (Prof Xoliswa Mtose, 2016), currently serving her second term.

Three of the six current female vice-chancellors are serving their second term, and three are in their first term.

For the first time in 2023, South Africa had seven female vice-chancellors. Unfortunately, this was short-lived, as the UCT vice-chancellor, Prof Mamokgethi Phakeng, stepped down before the end of her second term.

Since democracy, men in South Africa have traditionally outnumbered women vice-chancellors by 20 to an average of six. Looking back at the 14 female vice-chancellors since 1994, only a few served more than two terms, and some have been forced to step down before the end of their terms. According to current statistics, women have been let down.

Towards an inclusive workspace

Mangoloth and Khunou recommend that universities should strive for an inclusive workplace, and to achieve this, the following must be emphasised:

- Prioritise transformation at the leadership level by appointing a deputy vice-chancellor responsible for transformation, including appointing an ombudsperson.
- Provide family-friendly workplaces with onsite childcare.
- Hire for culture add not fit.
- Recognise care work as part of performance management (this includes mentoring students, representing them in transformation committees, and more)
- Create workplace lactation spaces.
- Flexible working hours, including hybrid work.
- International mobility should also accommodate parents with kids, providing a travel allowance.
- Consider increasing the age limit for scholarship opportunities for women.

According to the "Gender Perspectives on Academic Leadership in African Universities" study, progress has been made regarding female appointments as council chairs and chancellors.

However, the gender gap at the VC level between the university's executive head and the most powerful decision-maker was striking. Women represented only 13% of VCs, and if one excluded UCT, where the female VC had vacated her position, there was only one university among 16 with a female head.

While women's representation in executive leadership teams and at the level of deans varied considerably across universities, half had less than 50% women in their executive teams, and half had less than 30% female deans.

Women ranked competence and experience as the most critical factors in their leadership accession, indicative of belief in their abilities and self-worth. They expressed a need for mentoring, measures to address discrimination and greater visibility.

A wide gender gap was apparent in men's and women's understanding of obstacles to having more women in leadership positions. Men placed responsibility for the under-representation of women on them, stating that too few were suitably qualified and that women did not aspire to senior leadership positions.

In contrast, women pointed to systemic institutional failures. The study said formal mentoring and coaching programmes emerged as the dominant successful interventions.

Suggestions to enable early career women to prepare themselves for leadership positions included taking advantage of mentoring programmes, building their research reputation through publications, and building their confidence through improved communication skills.

From the above, it is clear that achieving gender equality in South Africa's higher education institutions remains a challenge and a work in progress.

Science & Technology

Africa Code Week equips young people with essential digital skills

STAFF REPORTER

SAP Africa Code Week has successfully instilled 21st-century skills in millions of young people for almost a decade. It provides opportunities for students and teachers to learn how to code for free and equips teachers with the skills to better understand digital learning.

In 2023 alone, the initiative positively impacted over 2.5 million youth, of whom approximately 46% were female, demonstrating the organisation's commitment to gender equality.

This milestone shows how valuable and impactful public and private partnerships with government, public institutions, and NGOs can help make the world run better and improve people's lives through digital skills.

Since 2015, SAP Africa Code Week, in partnership with Unesco, the Association for the Development of Education in Africa, and Irish Aid, has successfully empowered 17 million young people across 54 countries.

According to the programme's latest impact results, the initiative has also helped integrate coding and computational thinking into the national curricula of seven African countries, advancing the United Nations Sustainable Development Goals (SDGs) 4 (Quality Education), 5 (Gender Equality), and 17 (Partnerships for the Goals).

Over 1,200 workshops were



SAP Africa Code Week is building young minds for success.

rolled out, successfully mobilising 25,550 teachers across Africa. The top participating countries included South Africa, Tunisia, Cameroon, Nigeria, Ghana, and Morocco.

A multi-stakeholder approach drives change

Africa faces a growing demand for digital skills, with a projected 70% of jobs requiring them by 2030. Recognising the need to upskill students and educators across the continent, SAP launched the digital skills programme nine years ago.

Commenting on Africa Code Week's journey, Claire Gillissen-Duval, SAP's Senior Director of Corporate Social Responsibility for Europe, the Middle East, and Africa, highlights that private-public partnerships have been intrinsic to its mission.

"Our overarching goal was to integrate coding into national curricula, and we achieved this by maintaining active engagement with Ministries of Education throughout Africa, ensuring that our youth have access to a comprehensive skill set that is increasingly indispensable."

Emphasising this importance, Dr Tawfik Jelassi, Assistant Director-General for Communication and Information at Unesco, agrees: "Africa Code Week has set a great example of fruitful collaborations as it demonstrates the power of partnerships to increase well-being and advance development that leaves no one behind."

"It is a true embodiment of SDG Goal 17, which is about Partnerships for Sustainable Development, and we are proud at Unesco to collaborate on this initiative into the future."



SAP South Africa

Inspiring young talent to make a difference

As part of the Africa Code Week initiative, the AfriCAN Code Challenge, a pan-African competition that ignites creativity and coding skills in youth aged 8-16, was launched in 2020. Participants compete individually or in teams to develop Scratch games around a chosen theme through a three-minute video reviewed by a panel of judges.

Scratch is a free programming language and online community where people can create interactive stories, games, and animations.

Over the years, the challenge has grown in popularity and creativity. The initiative aims to develop more coding talents to drive sustainable development and create a better world for all. In 2023, the theme

challenged young minds to design multiplayer games promoting sustainable solutions for protecting life, with many initiatives focusing on our planet.

This year's winner was Welcome to My Africa by Triaksha Goodoory, Vignesh Singh Khelawon, Alessia Rughoonundun and Palen Chukravanan from Mauritius, followed by PaloPood by Alvinho Rodrigues, Bibiana Pinheiro, Taissa Pereira and Celma Bernardo from Sao Tome & Principe; with CodeManiacs by Eze Chikelu Jethro, Oruh Excel Odafe, Abubakar Ramadan and Olowode Wilson Eniola from Nigeria coming third.

"As we champion equal access to education, we believe that future skills will continue to play a pivotal role in shaping the trajectory of tomorrow's workforce," comments Gillissen-Duval.

"Through our dedication, we worked towards ensuring that every young mind is equipped for success in the ever-changing landscape of the modern world. However, while we have achieved incredible results thus far, more work must be done."

From 2024, SAP's corporate social responsibility has shifted its focus to skills for employability and learning to earning pathways. Therefore, SAP will pass the baton to Unesco to continue the mission of Africa Code Week. "We are excited to see how they will propel Africa Code Week to new heights," she concludes.

Exciting career paths in renewable energy for SA youth

PIERRE BEKKER

A remarkable expansion is underway in South Africa's energy sector. The country increasingly embraces renewable energy sources, spurred by pragmatic considerations such as sustainability, economic competitiveness, and environmental responsibility.

As South Africa strives to address global challenges like climate change and energy security, the renewable energy sector offers exciting career paths for the next generation.

Here, Temporary Employment Services (TES) providers can play a vital role in bridging the gap between South Africa's young workforce and the renewable energy sector's growing labour needs.

TES providers can empower young people to enter this rapidly growing industry by facilitating placements and participating in skills development partnerships with industry players.

The energy crisis is a catalyst for change

The urgency behind our transition to renewable energy is heightened by an ongoing energy crisis characterised by load shedding – deliberate, rolling power cuts implemented

to manage electricity demand. This crisis highlights the need for a more sustainable, secure energy system, and renewable energy sources like solar and wind offer a viable solution that harnesses clean and abundant natural resources to power the nation.

The promise of renewable energy for employment in South Africa

Given that it is predicted that by 2029, at least 19.28% of all energy used will be from renewable sources, it is clear that this industry will keep growing, with the private sector actively leading the expansion.

The surge in adoption indicates a shift towards sustainable practices and signifies a promising future for renewable energy in our country. Positively, this growth in the renewable energy sector offers significant career prospects for the youth. This is particularly important in light of data released by Statistics South Africa in May 2023, showing that the total number of unemployed youth aged 15 to 34 stands at a staggering 4.9 million, 46.5% of the country's employable population.

With roles spanning various disciplines such as engineering, project management, research and

development, and policy advocacy, young individuals will be able to contribute to the design, installation, and maintenance of renewable energy systems, lead project initiatives, drive innovation, influence policy decisions, and even venture into entrepreneurship.

This presents a dynamic and promising field for career growth and development, the ideal conduit for young people to actively shape the nation's sustainable future.

A growing industry for a growing workforce

Renewable energy offers opportunities beyond mere employment. For unskilled workers, it offers a gateway to gainful employment and provides valuable skills development opportunities.

Construction projects associated with renewable energy infrastructure serve as learning platforms, imparting essential skills such as workplace safety practices, technical skills, and project management expertise.

The decentralised nature of renewable energy projects means that opportunities are not limited to urban centres but extend to rural areas, contributing to inclusive economic growth and development across the country.

Sector offers plenty of career possibilities

Various avenues are available to individuals with varying skill levels for specific roles in high demand within the renewable energy industry.

From health and safety personnel to engineers, semi-skilled and skilled electricians, civil works professionals, and project managers, the sector offers an unimaginable array of career paths.

As the industry matures, there will be a growing need for workers in operations and maintenance roles, providing long-term employment prospects for young individuals who gain the necessary specialised skills.

Embracing renewable energy career paths offers young South Africans personal and professional growth opportunities. The sector's long-term stability ensures consistent employment opportunities, with specific renewable energy projects likely to span several decades.

Shaping the workforce of the future

As an alternative to traditional career pathways, Temporary Employment Services (TES) providers and outsourcing firms can play a crucial role in facilitating entry into the renewable energy sector for the

younger workforce.

TES providers specialise in sourcing, recruiting, and managing temporary or contract workers, offering flexibility and scalability to businesses needing labour.

By partnering with TES providers, the sector can access a pool of talented individuals with diverse skill sets, bridging any skill gaps and accelerating project timelines.

TES arrangements allow individuals to gain valuable hands-on experience in the industry, building their resumes and enhancing their employability in the long term.

In this way, TES providers can serve as a strategic resource for both employers and young professionals looking to embark on a career in renewable energy. In the long run, the transition to renewable energy provides the ideal opportunity for our youth to contribute meaningfully to the country's sustainable development.

As the sector continues to grow and evolve, embarking on renewable energy career paths offers young individuals the chance to be part of a transformative journey towards a greener, more prosperous future.

Pierre Bekker is the Director of Quyn International Recruitment & Staffing Solutions

Skilling Mzansi

Visually impaired Learners in historic Umcebo Ngemfundo Accounting programme

JONATHAN PAOLI

A historic one-year learnership programme has been launched under the theme of Umcebo Ngemfundo ("Wealth through Education") to assist in bridging the gap between people living with disabilities and accessing skills, specifically within the finance and accounting sector.

The Finance and Accounting Services Sector Education and Training Authority (FASSET), together with Blind SA, launched a collaborative learnership programme, Umcebo Ngemfundo, at the Protea OR Tambo Hotel and Conference Centre.

Blind SA President Christo de Klerk welcomed the event attendees and thanked everyone for their support and work in facilitating the transformative initiative.

"Thank you to those who have partnered with us in one of Blind SA's most ambitious projects. This is new to us, but we commend you for joining us in this plunge into the dark," De Klerk said.

Organisers for the launch said with 98% of visually impaired people unemployed in the country due to labour market factors, the programme aims to provide visually impaired people with the skills they need to close the skills gap between education and the workforce.

The programme is expected to illustrate how independence and wealth will be achieved in the lives of the students after they complete the course, especially since they will be employable and earn decent salaries.

Blind SA CEO Jace Nair said the launch marked a historic day in transformation.

He said that just over 10% of the visually impaired have primary education and that it was thus essential for them to acquire skills and qualifications to reduce unemployment and dependency on social grants within the blind community.

Nair said only 40% of Blind SA's members had grade 11 or higher and that none of the treasurers operating in the organisation's 49 branches across the country



The first group of beneficiaries of the programme posed with the Blind SA leadership and FASSET representatives.



Blind SA President Christo de Klerk thanked all those involved in achieving what many thought impossible

had any financial or accounting training.

"We also have the challenge that there are just over 24 schools for the blind and that learners at the schools are not exposed to ac-



FASSET Interim Board Chair Bongani Mathibela praised the initiative as the first of its kind

of placement through private sector partners, which ensures that learners spend at least six months acquiring the experience, ethics, and skills of the working environment.

In addition, the CEO said for these learners to succeed, they require reasonable accommodation and the provision of laptops with screen reading software.

"We have to provide training to our learners so they can use Zoom and other platforms because training is blended online and face-to-face, and we are grateful to receive financial and other forms of support," Nair said.

Interim Chair of the FASSET Board Bongani Mathibela praised the launch of what he called the first of its kind for all organisations involved.

"Our vision is to create valuable learning experiences that make a meaningful impact in the lives of the beneficiaries," Mathibela said.

He thanked the hard work of the FASSET staff in empowering members of the country who were prevented from accessing employment opportunities and contributing to the economy.

Programme beneficiary Wendy Hill from Pretoria thanked the organisations involved. She said she would not have gotten where she did without the help and support of such programmes.

"To be partially sighted is very challenging and very difficult. This is a blessing, from being told you can't be accommodated to being told there are no facilities for you. I don't just speak for myself, I speak for 18 others, we are blessed," she said.

The launch concluded with anticipation of a positive outcome for the program.

"We are certain that it will transform lives and contribute positively towards the country's economy through harvesting financial stability, accessibility, equal opportunities and inclusion," Mathibela said.

Nair highlighted the crucial role

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GRADE 12

MATHEMATICS P2
NOVEMBER 2020

MARKS: 150
TIME: 3 hours

This question paper consists of 14 pages, 1 information sheet and an answer book of 24 pages.

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INSTRUCTIONS AND INFORMATION

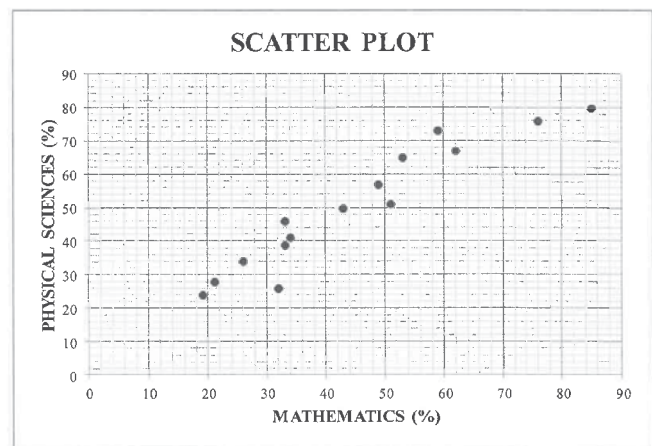
Read the following instructions carefully before answering the questions.

- This question paper consists of 10 questions.
- Answer ALL the questions in the SPECIAL ANSWER BOOK provided.
- Clearly show ALL calculations, diagrams, graphs, etc. that you have used in determining your answers.
- Answers only will NOT necessarily be awarded full marks.
- You may use an approved scientific calculator (non-programmable and non-graphical), unless stated otherwise.
- If necessary, round off answers correct to TWO decimal places, unless stated otherwise.
- Diagrams are NOT necessarily drawn to scale.
- An information sheet with formulae is included at the end of the question paper.
- Write neatly and legibly.

QUESTION 1

A Mathematics teacher was curious to establish if her learners' Mathematics marks influenced their Physical Sciences marks. In the table below, the Mathematics and Physical Sciences marks of 15 learners in her class are given as percentages (%).

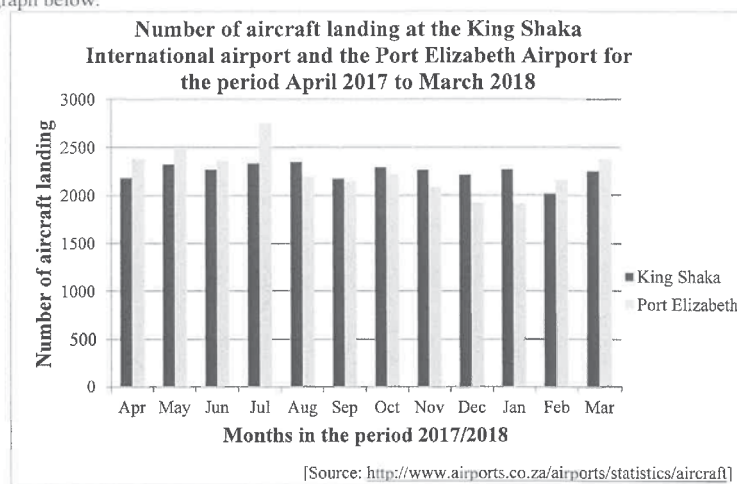
MATHEMATICS (AS %)	26	62	21	33	53	76	32	59	43	33	49	51	19	34	85
PHYSICAL SCIENCES (AS %)	34	67	28	46	65	76	26	73	50	39	57	51	24	41	80



- Determine the equation of the least squares regression line for the data. (3)
- Draw the least squares regression line on the scatter plot provided in the ANSWER BOOK. (2)
- Predict the Physical Sciences mark of a learner who achieved 69% for Mathematics. (2)
- Write down the correlation coefficient between the Mathematics and Physical Sciences marks for the data. (1)
- Comment on the strength of the correlation between the Mathematics and Physical Sciences marks for the data. (1)
- What trend did the teacher observe between the results of the two subjects? (1) [10]

QUESTION 2

The number of aircraft landing at the King Shaka International Airport and the Port Elizabeth Airport for the period starting in April 2017 and ending in March 2018, is shown in the double bar graph below.



- The number of aircraft landing at the Port Elizabeth Airport exceeds the number of aircraft landing at the King Shaka International Airport during some months of the given period. During which month is this difference the greatest? (1)
- The number of aircraft landing at the King Shaka International Airport during these months are:

2 182	2 323	2 267	2 334	2 346	2 175
2 293	2 263	2 215	2 271	2 018	2 254

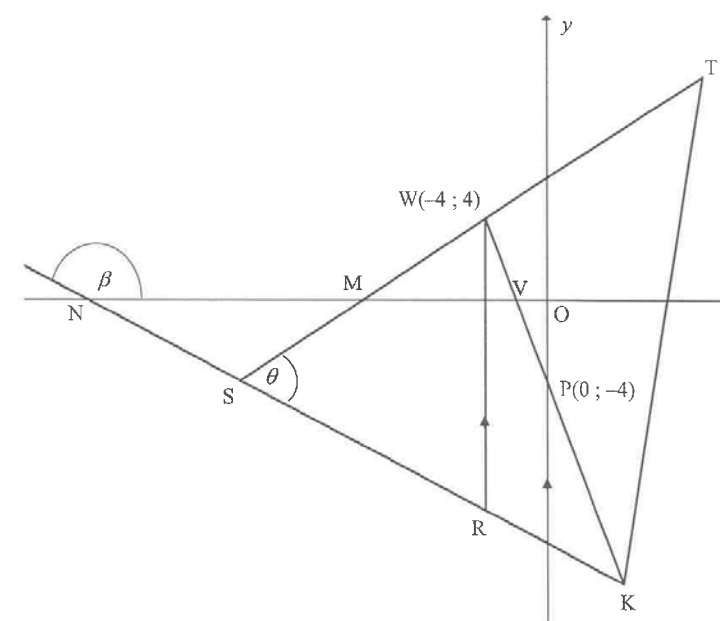
 Calculate the mean for the data. (2)
- Calculate the standard deviation for the number of aircraft landing at the King Shaka International Airport for the given period. (2)
- Determine the number of months in which the number of aircraft landing at the King Shaka International Airport were within one standard deviation of the mean. (3)
- Which ONE of the following statements is CORRECT? (1) [9]
 - During December and January, there were more landings at the Port Elizabeth Airport than at the King Shaka International Airport.
 - There was a greater variation in the number of aircraft landing at the King Shaka International Airport than at the Port Elizabeth Airport for the given period.
 - The standard deviation of the number of landings at the Port Elizabeth Airport will be higher than the standard deviation of the number of landings at the King Shaka International Airport.

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QUESTION 3

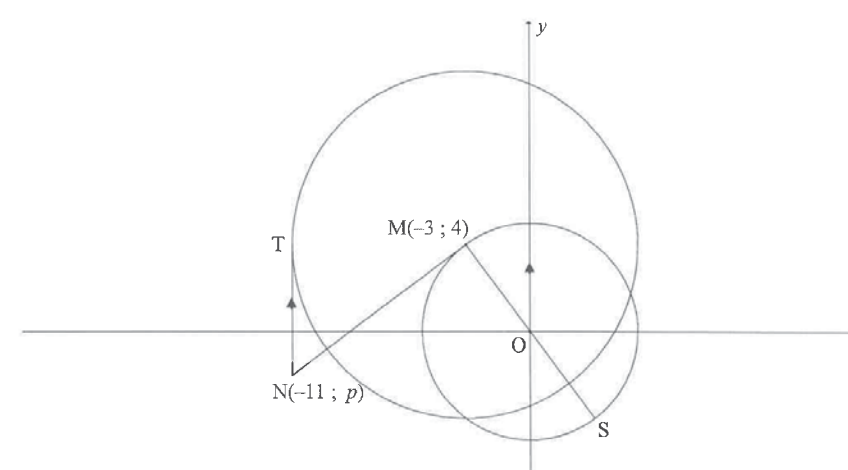
ΔTSK is drawn. The equation of ST is $y = \frac{1}{2}x + 6$ and ST cuts the x -axis at M . $W(-4; 4)$ lies on ST and R lies on SK such that WR is parallel to the y -axis. WK cuts the x -axis at V and the y -axis at $P(0; -4)$. KS produced cuts the x -axis at N . $\angle SK = \theta$.



- Calculate the gradient of WP . (2)
- Show that $WP \perp ST$. (2)
- If the equation of SK is given as $5y + 2x + 60 = 0$, calculate the coordinates of S . (4)
- Calculate the length of WR . (4)
- Calculate the size of θ . (5)
- Let L be a point in the third quadrant such that $SWRL$, in that order, forms a parallelogram. Calculate the area of $SWRL$. (4) [21]

QUESTION 4

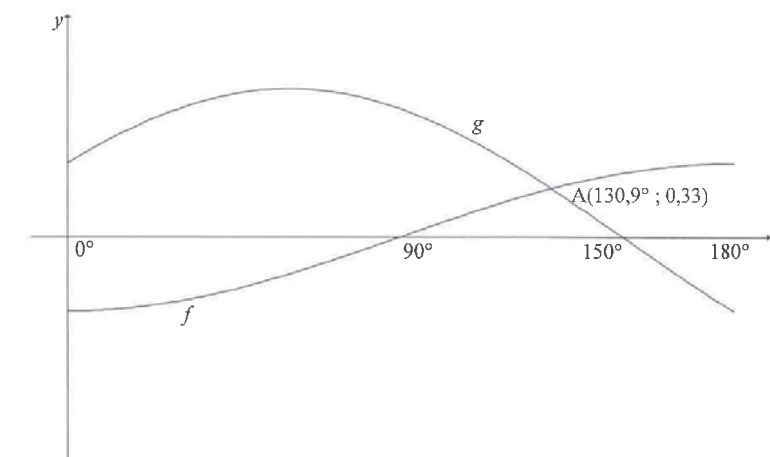
$M(-3; 4)$ is the centre of the large circle and a point on the small circle having centre $O(0; 0)$. From $N(-11; p)$, a tangent is drawn to touch the large circle at T with NT is parallel to the y -axis. NM is a tangent to the smaller circle at M with MOS a diameter.



- Determine the equation of the small circle. (2)
- Determine the equation of the circle centred at M in the form $(x - a)^2 + (y - b)^2 = r^2$. (3)
- Determine the equation of NM in the form $y = mx + c$. (4)
- Calculate the length of SN . (5)
- If another circle with centre $B(-2; 5)$ and radius k touches the circle centred at M , determine the value(s) of k , correct to ONE decimal place. (5) [19]

QUESTION 5

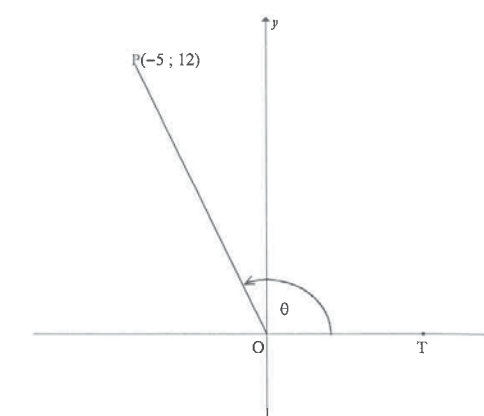
The graphs of $f(x) = -\frac{1}{2}\cos x$ and $g(x) = \sin(x + 30^\circ)$, for the interval $x \in [0^\circ; 180^\circ]$, are drawn below. $A(130,9^\circ; 0,33)$ is the approximate point of intersection of the two graphs.



- Write down the period of g . (1)
- Write down the amplitude of f . (1)
- Determine the value of $f(180^\circ) - g(180^\circ)$. (1)
- Use the graphs to determine the values of x , in the interval $x \in [0^\circ; 180^\circ]$, for which:
 - $f(x - 10^\circ) = g(x - 10^\circ)$ (1)
 - $\sqrt{3}\sin x + \cos x \geq 1$ (4) [8]

QUESTION 6

6.1 In the diagram, $P(-5; 12)$ and T lies on the positive x -axis. $\hat{POT} = \theta$



Answer the following **without using a calculator**:

- Write down the value of $\tan \theta$. (1)
 - Calculate the value of $\cos \theta$. (3)
 - $S(a; b)$ is a point in the third quadrant such that $\hat{TOS} = \theta + 90^\circ$ and $OS = 6,5$ units. Calculate the value of b . (4)
- 6.2 Determine, **without using a calculator**, the value of the following trigonometric expression:

$$\frac{\sin 2x \cdot \cos(-x) + \cos 2x \cdot \sin(360^\circ - x)}{\sin(180^\circ + x)}$$
 (5)
- 6.3 Determine the general solution of the following equation:

$$6\sin^2 x + 7\cos x - 3 = 0$$
 (6)
- 6.4 Given: $x + \frac{1}{x} = 3 \cos A$ and $x^2 + \frac{1}{x^2} = 2$
 Determine the value of $\cos 2A$ **without using a calculator**. (5) [24]

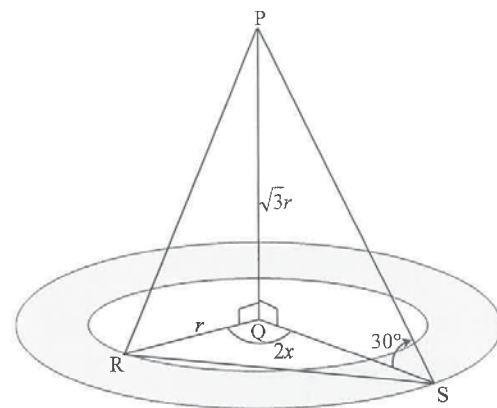
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QUESTION 7

A landscape artist plans to plant flowers within two concentric circles around a vertical light pole PQ. R is a point on the inner circle and S is a point on the outer circle. R, Q and S lie in the same horizontal plane. RS is a pipe used for the irrigation system in the garden.

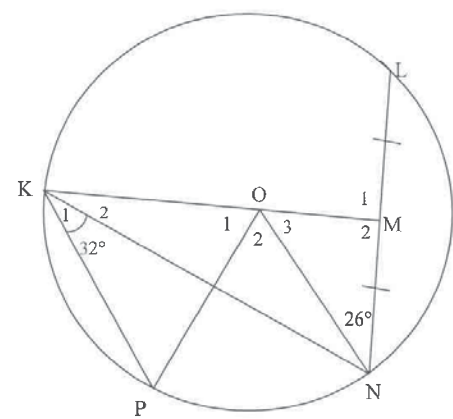
- The radius of the inner circle is r units and the radius of the outer circle is QS .
- The angle of elevation from S to P is 30° .
- $RQ = 2x$ and $PQ = \sqrt{3}r$



- 7.1 Show that $QS = 3r$ (3)
- 7.2 Determine, in terms of r , the area of the flower garden. (2)
- 7.3 Show that $RS = r\sqrt{10 - 6\cos 2x}$ (3)
- 7.4 If $r = 10$ metres and $x = 56^\circ$, calculate RS. (2) [10]

QUESTION 8

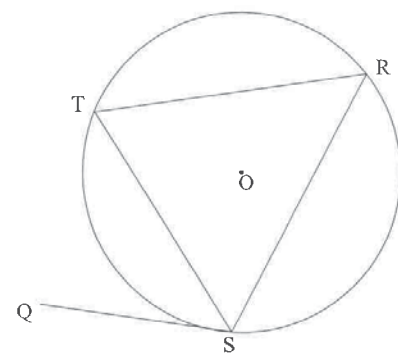
8.1 O is the centre of the circle. KOM bisects chord LN and $\angle MNO = 26^\circ$. K and P are points on the circle with $\angle KNP = 32^\circ$. OP is drawn.



- 8.1.1 Determine, giving reasons, the size of:
- (a) \hat{O}_2 (2)
- (b) \hat{O}_1 (4)
- 8.1.2 Prove, giving reasons, that KN bisects $\angle O\hat{K}P$. (3)

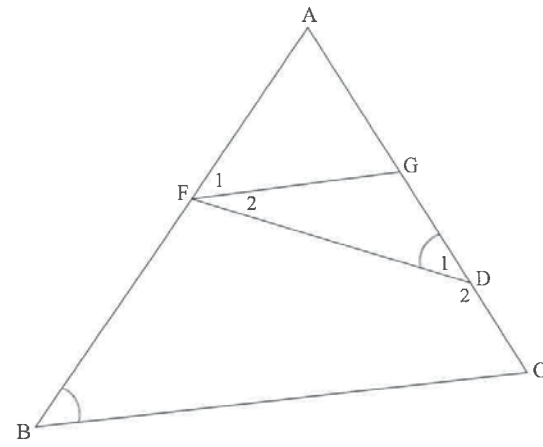
QUESTION 9

9.1 In the diagram, O is the centre of the circle. Points S, T and R lie on the circle. Chords ST, SR and TR are drawn in the circle. QS is a tangent to the circle at S.



Use the diagram to prove the theorem which states that $\angle Q\hat{S}T = \hat{R}$. (5)

8.2 In $\triangle ABC$, F and G are points on sides AB and AC respectively. D is a point on GC such that $\hat{D}_1 = \hat{B}$.

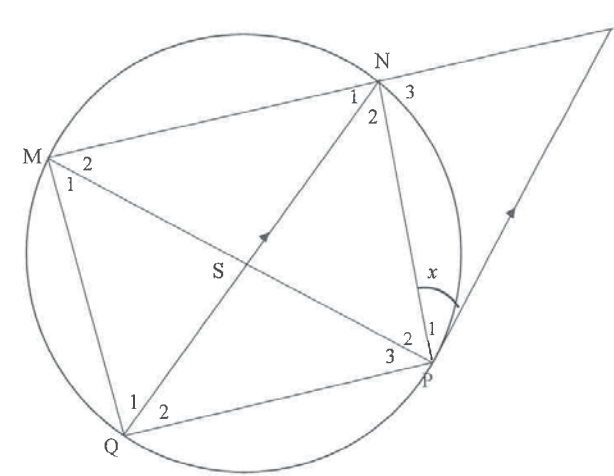


- 8.2.1 If AF is a tangent to the circle passing through points F, G and D, then prove, giving reasons, that $FG \parallel BC$. (4)
- 8.2.2 If it is further given that $\frac{AF}{FB} = \frac{2}{5}$, $AC = 2x - 6$ and $GC = x + 9$, then calculate the value of x . (4) [17]

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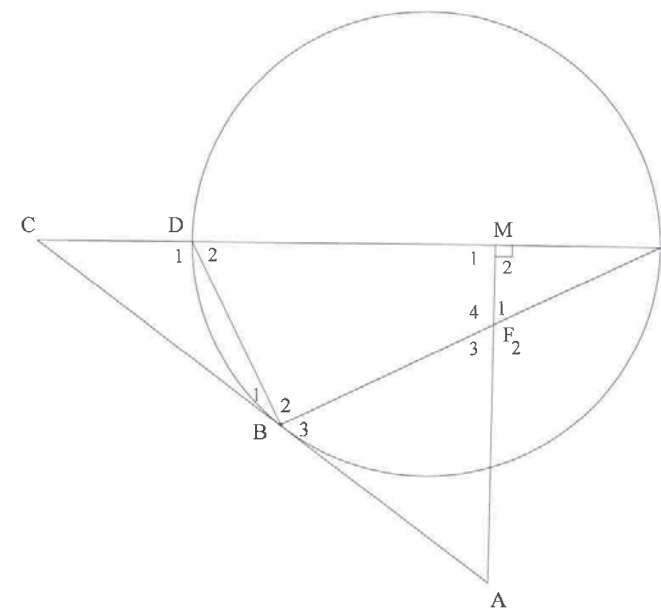
9.2 Chord QN bisects $\angle M\hat{N}P$ and intersects chord MP at S. The tangent at P meets MN produced at R such that $QN \parallel PR$. Let $\hat{P}_1 = x$.



- 9.2.1 Determine the following angles in terms of x . Give reasons
- (a) \hat{N}_2 (2)
- (b) \hat{Q}_2 (2)
- 9.2.2 Prove, giving reasons, that $\frac{MN}{NR} = \frac{MS}{SQ}$ (6) [15]

QUESTION 10

In the diagram, a circle passes through D, B and E. Diameter ED of the circle is produced to C and AC is a tangent to the circle at B. M is a point on DE such that $AM \perp DE$. AM and chord BE intersect at F.



- 10.1 Prove, giving reasons, that:
- 10.1.1 FBDM is a cyclic quadrilateral (3)
- 10.1.2 $\hat{B}_2 = \hat{F}_1$ (4)
- 10.1.3 $\triangle CDB \parallel \triangle CBE$ (3)
- 10.2 If it is further given that $CD = 2$ units and $DE = 6$ units, calculate the length of:
- 10.2.1 BC (3)
- 10.2.2 DB (4) [17]

TOTAL: 150

INFORMATION SHEET

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$A = P(1 + ni) \quad A = P(1 - ni) \quad A = P(1 - i)^n \quad A = P(1 + i)^n$$

$$T_n = a + (n-1)d \quad S_n = \frac{n}{2}[2a + (n-1)d]$$

$$T_n = ar^{n-1} \quad S_n = \frac{a(r^n - 1)}{r - 1}; r \neq 1 \quad S_\infty = \frac{a}{1 - r}; -1 < r < 1$$

$$F = \frac{x[(1+i)^n - 1]}{i} \quad P = \frac{x[1 - (1+i)^{-n}]}{i}$$

$$f'(x) = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$$

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \quad M\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$$

$$y = mx + c \quad y - y_1 = m(x - x_1) \quad m = \frac{y_2 - y_1}{x_2 - x_1} \quad m = \tan \theta$$

$$(x - a)^2 + (y - b)^2 = r^2$$

In $\triangle ABC$: $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

$$a^2 = b^2 + c^2 - 2bc \cos A$$

$$\text{area } \triangle ABC = \frac{1}{2}ab \sin C$$

$$\sin(\alpha + \beta) = \sin \alpha \cos \beta + \cos \alpha \sin \beta \quad \sin(\alpha - \beta) = \sin \alpha \cos \beta - \cos \alpha \sin \beta$$

$$\cos(\alpha + \beta) = \cos \alpha \cos \beta - \sin \alpha \sin \beta \quad \cos(\alpha - \beta) = \cos \alpha \cos \beta + \sin \alpha \sin \beta$$

$$\cos 2\alpha = \begin{cases} \cos^2 \alpha - \sin^2 \alpha \\ 1 - 2\sin^2 \alpha \\ 2\cos^2 \alpha - 1 \end{cases} \quad \sin 2\alpha = 2 \sin \alpha \cos \alpha$$


$$\bar{x} = \frac{\sum x}{n} \quad \sigma^2 = \frac{\sum (x_i - \bar{x})^2}{n}$$

$$P(A) = \frac{n(A)}{n(S)} \quad P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$

$$\hat{y} = a + bx \quad b = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sum (x - \bar{x})^2}$$

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GRADE 12

TECHNICAL MATHEMATICS P2
NOVEMBER 2020

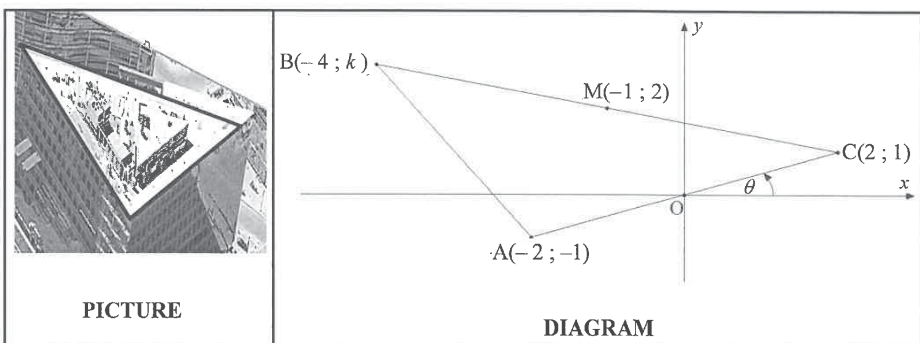
MARKS: 150
TIME: 3 hours

This question paper consists of 13 pages and 2 information sheets.

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QUESTION 1

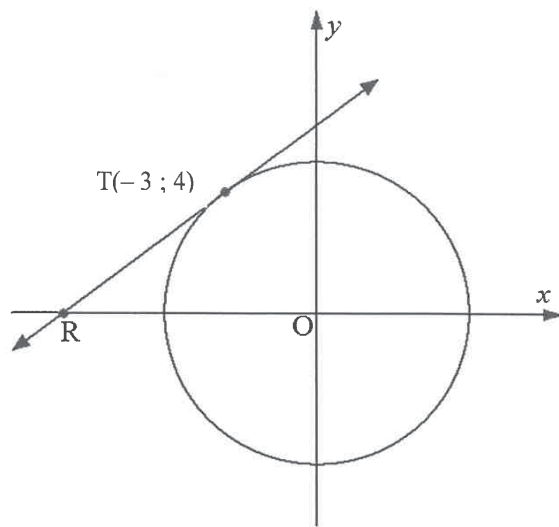
The picture below shows the triangular rooftop of a building. The diagram next to the picture represents the triangular rooftop in the Cartesian plane with origin O. In the diagram, A(-2; -1), B(-4; k) and C(2; 1) are the vertices of $\triangle ABC$ with M(-1; 2) the midpoint of BC. The angle of inclination, θ , is the angle between AC and the positive x-axis.



- 1.1 Determine:
 - 1.1.1 The numerical value of k (2)
 - 1.1.2 The gradient of AC (2)
 - 1.1.3 The size of θ (in degrees) (2)
 - 1.1.4 The equation of straight line BC in the form $y = \dots$ (3)
 - 1.2 If O is the midpoint of AC, use analytical geometry methods to show that:
 - 1.2.1 $MO \parallel BA$ (3)
 - 1.2.2 $MO = \frac{1}{2} BA$ (3)
- [15]**

QUESTION 2

2.1 The diagram below shows a circle with centre O at the origin. Point T(-3; 4) lies on the circle. Tangent RT to the circle passes through T.



- 2.1.1 Calculate the length of the diameter of the circle. (2)
 - 2.1.2 Prove, showing ALL calculations, that the straight line defined by the equation $4y - 3x - 25 = 0$ and which passes through point T is the tangent to the circle. (5)
 - 2.2 Given the ellipse with the following properties:
 - Centre at the origin
 - Distance between the x-intercepts is 12 units
 - Range of $-3,5 \leq y \leq 3,5$
 - 2.2.1 Write the equation of the ellipse in the form $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ (1)
 - 2.2.2 Sketch the graph of the ellipse. Clearly show the intercepts with the axes. (3)
- [11]**

INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions.

1. This question paper consists of 11 questions.
2. Answer ALL the questions in the SPECIAL ANSWER BOOK provided.
3. Clearly show ALL calculations, diagrams, graphs, etc. that you have used to determine your answers.
4. Answers only will NOT necessarily be awarded full marks.
5. If necessary, round off answers to TWO decimal places, unless stated otherwise.
6. Diagrams are NOT necessarily drawn to scale.
7. You may use an approved scientific calculator (non-programmable and non-graphical), unless stated otherwise.
8. An information sheet with formulae is included at the end of the question paper.
9. Write neatly and legibly.

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QUESTION 3

- 3.1 If $P = 146,31^\circ$ and $Q = 91,58^\circ$, determine the value of $\sqrt{\frac{2}{\tan(P+Q)}}$ (2)
 - 3.2 Given: $\tan \beta = -\frac{2}{3}$ where $\cos \beta > 0$ and $\sin \theta = \frac{5}{13}$ where $\theta \in [90^\circ; 360^\circ]$

Determine, with the aid of diagrams and WITHOUT using a calculator, the value of EACH of the following:

 - 3.2.1 $2 \cot \beta + 1$ (2)
 - 3.2.2 $\sin \beta \cdot \sec \theta$ (6)
 - 3.3 Given: $\sin A + 2 \cos^2 A = 2$
 - 3.3.1 Express the above equation in simplified form, in terms of $\sin A$. (3)
 - 3.3.2 Hence, or otherwise, determine the value(s) of A if: $\sin A + 2 \cos^2 A = 2$ for $A \in [0^\circ; 180^\circ]$ (5)
- [18]**

QUESTION 4

- 4.1 Simplify EACH of the following:
 - 4.1.1 $1 - \cos^2(2\pi - \theta)$ (2)
 - 4.1.2 $\cos \alpha (\cot \alpha + \tan \alpha)$ (4)
 - 4.2 Prove the following identity:

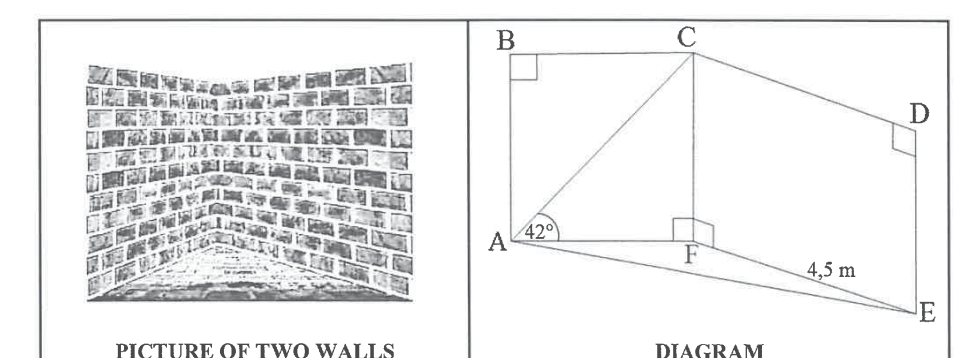
$$\frac{1}{\sin(180^\circ + x) \cdot \sin(360^\circ - x)} - \cot^2(180^\circ - x) = 1$$
 (5)
- [11]**

QUESTION 5

- Given: Functions f and g defined by $f(x) = -\tan x$ and $g(x) = 2 \sin x$ for $0^\circ \leq x \leq 180^\circ$
- 5.1 Draw sketch graphs of f and g on the same set of axes. Clearly indicate ALL the intercepts with the axes, turning points, asymptotes and end points. (6)
 - 5.2 Write down:
 - 5.2.1 The range of f (1)
 - 5.2.2 The period of g (1)
 - 5.2.3 The equation of the asymptote of h if $h(x) = f(x + 30^\circ)$ (1)
 - 5.3 Determine the value(s) of x for which $f(x) \cdot g(x) < 0$ (2)
- [11]**

QUESTION 6

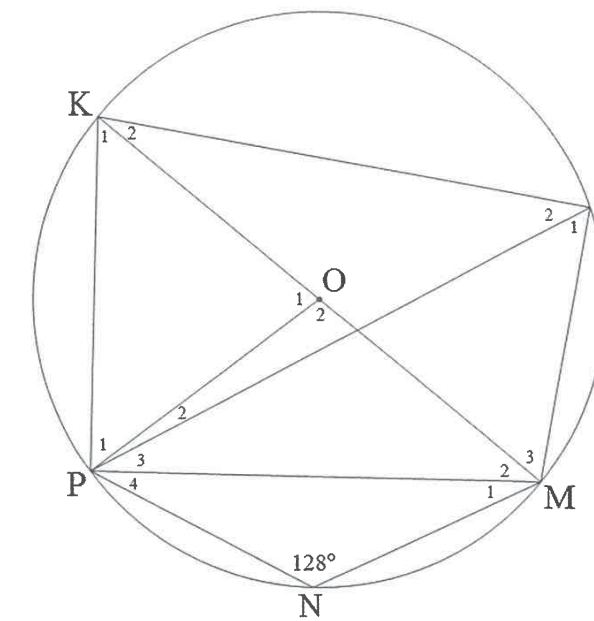
The picture below shows two vertical rectangular walls that are not perpendicular to each other. The diagram next to it represents the two rectangular walls, ABCF and CDEF. Points A, F and E lie in the same horizontal plane and form a triangular section AFE of the floor. Furthermore, $\hat{FAC} = 42^\circ$, $FE = 4,5 \text{ m}$ and $CF = \frac{2}{3} FE$



- 6.1 Write down the length of CF. (1)
 - 6.2 Determine, correct to ONE decimal place:
 - 6.2.1 The length of AF (2)
 - 6.2.2 The size of \hat{AFE} if $AE = 6 \text{ m}$ (4)
 - 6.2.3 The area of $\triangle AFE$ (3)
- [10]**

QUESTION 7

- 7.1 Complete the following theorem:
Angles subtended by a chord of a circle, ... , are equal. (1)
- 7.2 In the diagram below, O is the centre of circle KLMNP. KOM is a diameter of the circle and chords LP and PM are drawn. $\hat{N} = 128^\circ$

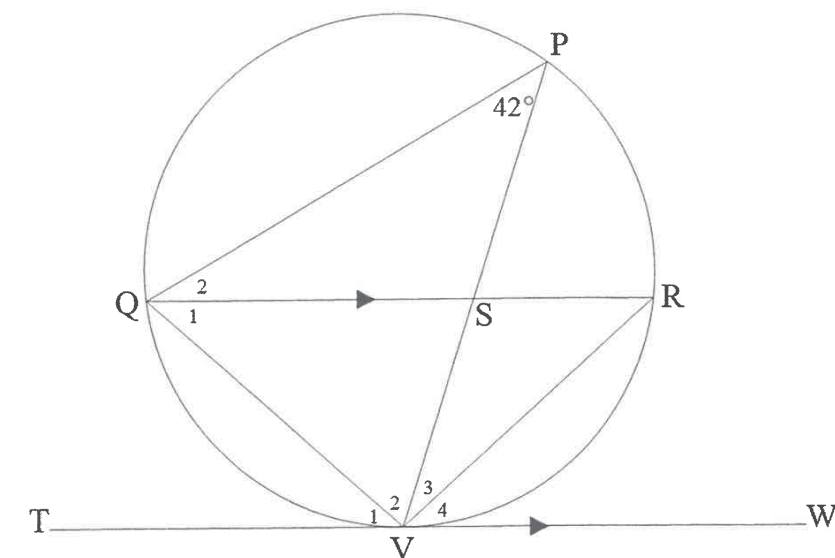


Determine, stating reasons, the size of EACH of the following angles:

- 7.2.1 \hat{K}_1 (2)
 - 7.2.2 \hat{L}_2 (5)
 - 7.2.3 \hat{P}_2 if $\hat{P}_3 = 29^\circ$ (2)
- [10]**

QUESTION 8

- 8.1 Complete the following theorem:
The angle between the tangent to a circle and the chord drawn from the point of contact is equal to ... (1)
- 8.2 In the diagram below, TVW is the tangent to circle PRVQ at V. Chords PV and QR intersect at point S. $TW \parallel QR$ and $\hat{P} = 42^\circ$



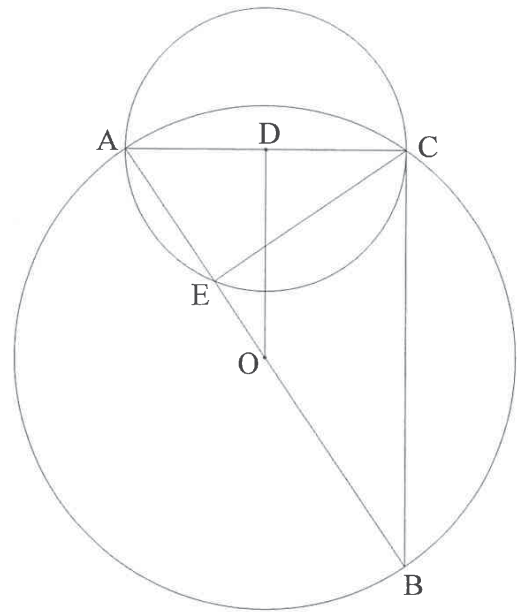
- Determine, with reasons:
- 8.2.1 FOUR other angles each equal to 42° (6)
 - 8.2.2 Whether QR is a diameter of the circle (2)
 - 8.2.3 The size of \hat{Q}_2 if $\hat{V}_2 = 67^\circ$ (3)
- [12]**

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QUESTION 9

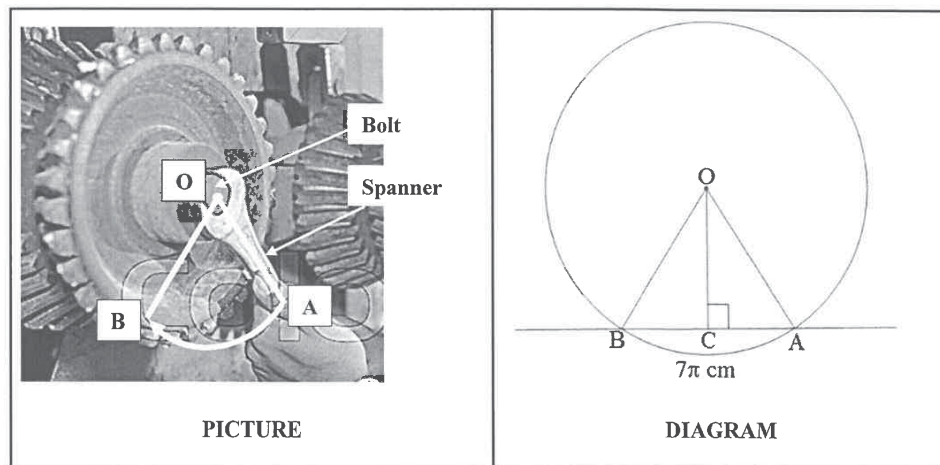
- 9.1 Complete the following theorem:
The perpendicular bisector of a chord of a circle passes through ... (1)
- 9.2 In the diagram below, O is the centre of circle ABC and D is the centre of circle ACE. AB and AC are the diameters of the larger and smaller circles respectively. BC is the tangent of the smaller circle at C. DO = 6 units and AC = 8 units.



- 9.2.1 Give TWO different reasons why $\hat{ACB} = 90^\circ$ (2)
- 9.2.2 Give a reason why $DO \parallel CB$. (1)
- 9.2.3 Determine the length of diameter AB. (4)
- 9.2.4 Prove that $\triangle ABC \parallel \triangle ACE$. (3)
- 9.2.5 Show that $AC^2 = AB \times AE$ (1)
- 9.2.6 Determine the length of AE. Leave your answer in simplified surd form. (3) [15]

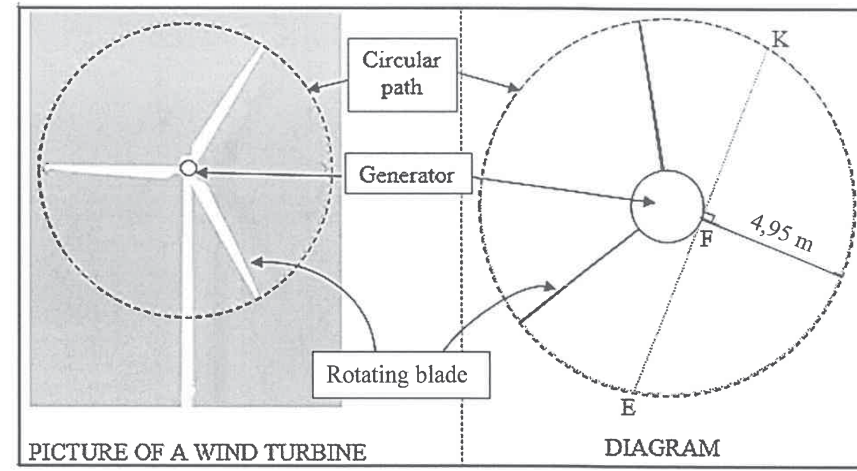
QUESTION 10

- 10.1 The picture below shows a spanner being used to tighten a bolt by rotating it in a clockwise direction from point A to point B. The diagram next to the picture represents the rotation of the spanner. Point O, the centre of the bolt, is also the centre of rotation of the spanner.
- OA represents the distance from the centre of the bolt to the end of the spanner.
Reflex angle $\hat{AOB} = \frac{29}{18}\pi$ and $OC \perp BA$.
Arc length of AB is 7π cm.



- 10.1.1 Write down, in radians, the size of acute \hat{AOB} . (1)
- 10.1.2 Hence, convert the size of acute \hat{AOB} to degrees. (2)
- 10.1.3 Determine the length of OA. (3)
- 10.1.4 Calculate the area of major sector AOB. (3)

- 10.2 The picture below shows a wind turbine that is used to harness the power of wind to produce electricity. The diagram below represents the rotating blades. The tips of the blades form a circular path when rotated. The smaller circle represents the generator. The three identical rotating blades each have a length of 4,95 m (from point F to the tip of the blade). KE = 10,5 m is a chord of the larger circle and is also a tangent to the smaller circle at point F.

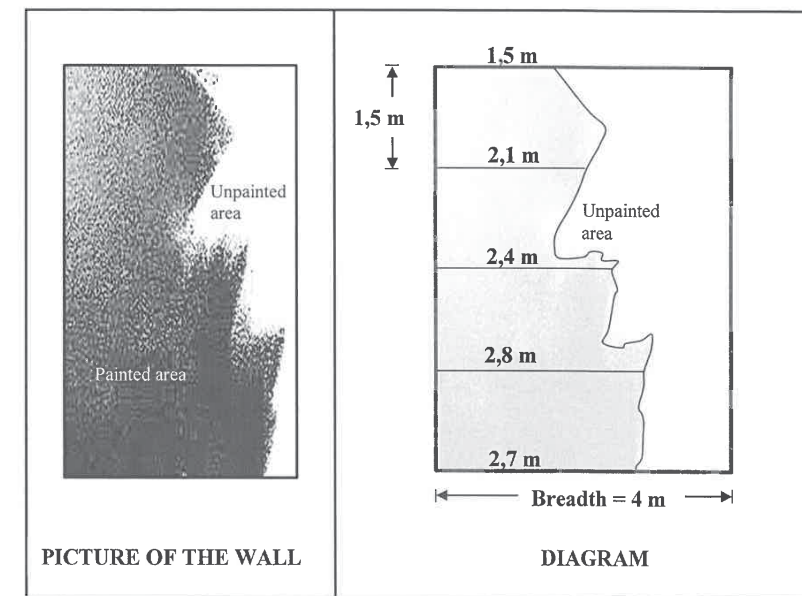


- Calculate:
- 10.2.1 The length of the diameter of the circular path formed by the tips of the rotating blades (3)
- 10.2.2 The number of revolutions per minute if the circumferential velocity of the tip of a rotating blade is $6,61\pi$ metres per second (4) [16]

QUESTION 11

- 11.1 The picture below shows a partially painted rectangular wall which has a breadth of 4 m. The diagram below represents the situation above. The height of the unpainted part of the wall is divided into four equal parts that are each 1,5 m long, as shown in the diagram.

The ordinates of the parts are:
1,5 m; 2,1 m; 2,4 m; 2,8 m and 2,7 m



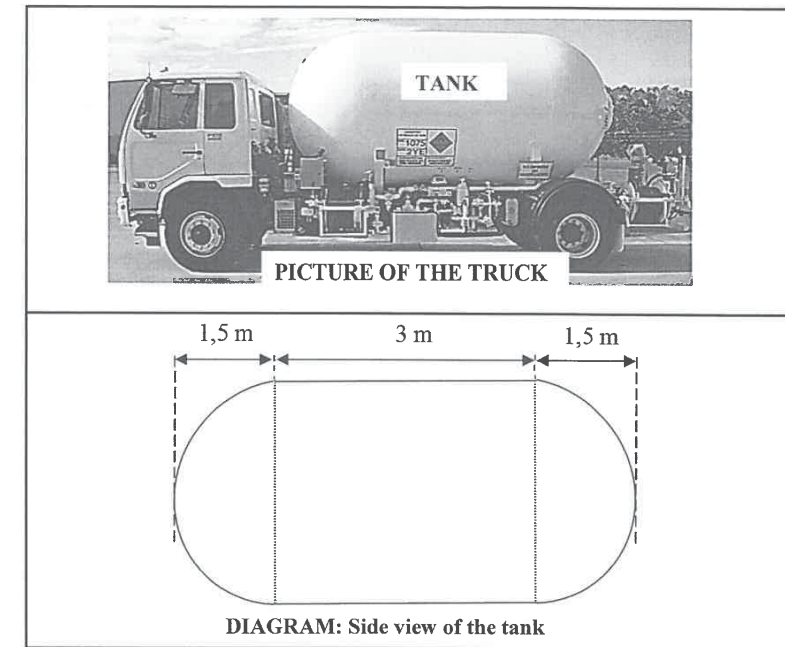
- The following formula may be used:
- Area of a rectangle = length \times breadth**
- 11.1.1 Determine the height of the wall. (1)
- 11.1.2 Calculate the painted area of the wall by using the mid-ordinate rule. (4)
- 11.1.3 A one-litre tin of paint, which is sufficient to cover an area of $3,26 \text{ m}^2$, costs R156,36. Determine whether the minimum cost of the paint required to paint the remaining section of the wall will exceed R600. (6)
- NOTE:** The paint is only sold in one-litre tins. (6)

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- 11.2 The picture below shows a truck used for transporting liquid in a tank. The shape of the tank consists of a right cylindrical section in the middle with hemispheres at each end.

The diagram below shows the side view of the tank which is 6 m long. The cylindrical section of the tank is 3 m long and the length of the radius of both the cylindrical and hemispherical sections of the tank is equal to 1,5 m.



- The following formulae may be used:
- Total surface area of a right cylinder = $2\pi r^2 + 2\pi r h$**
Area of a rectangle = length \times breadth
Volume of a right cylinder = $(\pi r^2) \times$ height
Surface area of a sphere = $4\pi r^2$
Volume of a sphere = $\frac{4}{3}\pi r^3$
- 11.2.1 Calculate the total surface area of the tank. (5)
- 11.2.2 A right cylindrical tank has the same volume and the same radius as the tank of the truck. Show whether the height of this right cylindrical tank is more than three times its radius. (5) [21]
- TOTAL: 150**

INFORMATION SHEET: TECHNICAL MATHEMATICS

$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ $x = -\frac{b}{2a}$ $y = \frac{4ac - b^2}{4a}$

$a^x = b \Leftrightarrow x = \log_a b$, $a > 0, a \neq 1$ and $b > 0$

$A = P(1 + ni)$ $A = P(1 - ni)$ $A = P(1 - i)^n$ $A = P(1 + i)^n$

$i_{eff} = \left(1 + \frac{i}{m}\right)^m - 1$

$f'(x) = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$

$\int x^n dx = \frac{x^{n+1}}{n+1} + C$, $n \neq -1$

$\int \frac{1}{x} dx = \ln x + C$, $x > 0$ $\int a^x dx = \frac{a^x}{\ln a} + C$, $a > 0$

$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ $M\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$

$y = mx + c$ $y - y_1 = m(x - x_1)$ $m = \frac{y_2 - y_1}{x_2 - x_1}$ $m = \tan \theta$

$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$

In $\triangle ABC$: $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$ $a^2 = b^2 + c^2 - 2bc \cos A$

Area of $\triangle ABC = \frac{1}{2} ab \sin C$

$\sin^2 \theta + \cos^2 \theta = 1$ $1 + \tan^2 \theta = \sec^2 \theta$ $\cot^2 \theta + 1 = \text{cosec}^2 \theta$

Sports

Minister McKenzie must make school sports a priority

Opinion

EDWIN NAIDU

Gayton McKenzie, the new Minister of Sports, Arts and Culture, has an excellent opportunity to significantly improve the state of sports in our schools during his tenure.

He will undoubtedly have to pay attention to Bafana Bafana, Banyana Banyana, the Springboks, and the country's athletes' participation in the Olympic and Paralympic Games.

But he must also make school sports a critical priority. The future sports heroes and heroines in our villages, townships, and suburbs must have the means to develop their skills from the school level to the tertiary system and into our provincial and national teams.

Learners must have a precise direction for achieving their sports goals, and hopefully, they will find a champion in McKenzie.

When this issue of Inside Education was published, the Minister had only been in office for two weeks and still needed to outline his priorities for school sports. We are sure he will do so soon.

McKenzie will get assistance from the leadership team elected by the SA Sports Confederation and Olympic Committee – the Eminent Persons Group on Sport Transformation announced by former minister Zizi Kodwa last year – which will present him with its latest report from the country's 19 sports federations.

But let's not expect McKenzie to be the only one responsible for improving the state of sports in our



Gayton McKenzie: Minister of Sports, Arts and Culture

schools. Minister of Basic Education Siviwe Gwarube also has a crucial role in ensuring that sports get the attention they deserve.

As the country's custodian of sports, McKenzie will have to prioritise a budget to develop sports in schools.

A Memorandum of Understanding with the Department of Basic Education that expired last year outlined that the DBE is responsible for ensuring physical education (PE) and intra- and inter-school sports occur and that district and provincial

school sports championships exist. The MoU must be urgently updated to ensure learners are not neglected.

At a provincial level, the DBE's sports departments will fund district and provincial activities, provide equipment and sports attire to schools, and train teachers as coaches and administrators, while the national department will fund and host the National School Sport Championships.

On a positive note, former minister Kodwa hosted a school sports indaba last year, and these outcomes

have been expressed in a new MOU with the DBE and the latest annual performance plans.

For McKenzie, school sports must be recognised as the bedrock for national sports development and talent identification. So, his department's funding allocation must be part of an active national budget.

McKenzie will share his priorities after the President's cabinet lekgotla in July, and his department's strategic plans will be tabled in Parliament and explained in his budget vote address.

School sports are crucial in laying a foundation for our children and youth to take their place in national and international competitions. A robust school sports system supported and driven by McKenzie can help lay a stronger foundation for social cohesion and nation-building.

Let's give the Minister time to get to grips with his challenging portfolio. We hope he will recognise the importance of developing a strong sports culture in our schools. Learners and the country's future sports stars will thank him for it.

Rowing South Africa completes final preparations for Paris Olympics

STAFF REPORTER

Rowing South Africa's Olympic-qualified athletes have been training intensively in Tzaneen, preparing for the upcoming Games in Paris. The team, focusing on the men's pair and women's single scull, will leave South Africa on 18 July, with the Olympic rowing events set to start on 27 July.

The South African Sports Confederation and Olympic Committee has announced the men's pair of Chris Baxter and John Smith, along with their coach Tiago Loureiro.

Paige Badenhorst clinched her place in the women's single sculls for the Games.



John Smith and Chris Baxter will be going for gold at the Paris Olympics

The serene setting of Tzaneen, nestled in Limpopo, has provided an

ideal environment for the athletes to refine their techniques, build stami-

na, and develop mental resilience.

Both the men's pair and the women's single scull have been working tirelessly, honing their skills and strength through long on-the-water sessions, strength conditioning, and race simulations. These athletes are seasoned competitors with a history of international success, demonstrating exceptional determination, precision, and drive.

In the men's pair, the dynamic duo of Baxter and Smith has developed a strong synergy, working as a cohesive unit both in and out of the boat.

Meanwhile, Badenhorst, the women's single sculler, has spent countless hours perfecting her technique under the guidance of her coaching

team. Her training is designed to optimise her speed and endurance, key elements for excelling in the demanding single-scull event.

This unity among the athletes and their coaches fosters a sense of camaraderie and mutual support.

As the team prepares to leave for Paris, there is a palpable sense of anticipation and excitement. The hard work and dedication shown in Tzaneen have laid a solid foundation for a successful Olympic campaign, and the team is eagerly looking forward to the challenges and triumphs that await them in the French capital.

The team carries the hopes and support of a nation ready to make waves on the international stage.