



### Digital skills need a common vision and framework

The WC e-Skills CoLab attended the EU ICT 2015 Conference. Report back on the digital agenda. [Read more on p2](#)



### NEMISA is offering the following 2015/2016 courses for full-time study

Find out more about 2D Animation and Graphic Design. [Read more on p4](#)



### Meet Dr Surendra Thakur, CoLab Director at the KZN e-Skills CoLab

[Read more on p9](#)



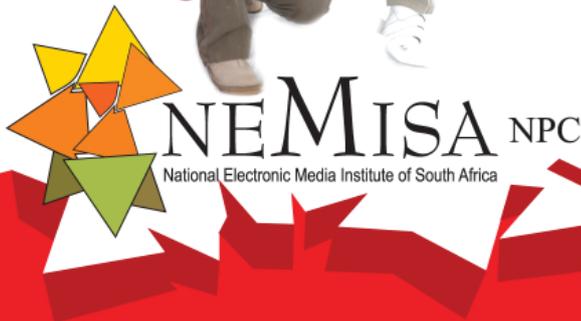
### e-Skills are important for recording cultural heritage

Deputy Minister of DTPS, Prof Hlengiwe Mkhize, commemorated Heritage Month in Sebokeng on 15 September 2015. [Read more on p11](#)

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# 2D Anim-ation



## 2D Animation: 18 month programme

We offer an eighteen month programme that is based on both traditional and digital animation and is designed to cover the entire value chain of animation production (from conception, to production and editing). Aimed at preparing learners for the competitive market place of animation and digital graphics production, the course equips learners with key skills of interpretation, visualization, conceptualization, production and technical application of Animation projects.

**Entrance Requirements:** Matric/Grade 12/NQF Level 4 Related Qualification Mathematics & English at NQF Level 4, Entrance Exam, and Visual Portfolio.

**Application Deadline:** November 30, 2015 **Commencement Date:** January 25, 2016

**Annual Course Fee:** R38,000.00 **Registration Fee:** R3,800.00 (Payable upon acceptance in January) **Remaining Balance:** R34,200.00 (Payable over 10 months)

Moving towards  **iNeSI**  
Ikamva National eSkills Institute

Applications available from [www.nemisa.co.za](http://www.nemisa.co.za); or contacts us for more info Mary Moleke (011) 644 4834 [MaryM@nemisa.co.za](mailto:MaryM@nemisa.co.za); or Lungile Xulu (011) 644 4801 [LungileX@nemisa.co.za](mailto:LungileX@nemisa.co.za) or message us on Facebook <https://www.facebook.com/iNesi.Official>.

# Graphic De-sign foundation



## Graphic Design Foundation: 12 month programme

We offer a one year programme that serves as a foundation for both Graphic Design and Animation. The course exposes learners to theoretical, practical and technological components of Graphic Design and Animation production. Aimed at preparing learners for further education and training in the Fields of Animation and Graphic Design, the course equips learners with key skills of conceptualization, and visual communication. Learners are further exposed to: writing for multimedia, digital storytelling, and art direction.

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**Annual Course Fee:** R28,005.12 **Registration Fee:** R2,800.51 (Payable upon acceptance in January) **Remaining Balance:** R25,204.61 (Payable over 10 months)

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## Understanding e-skills

## Digital skills need a common vision and framework

The Western Cape e-Skills CoLab, represented by Dr Leona Craffert, attended the EU ICT 2015 Conference from 20-22 of October 2015 in Lisbon, Portugal. ICT2015 is dedicated to discussing the digital agenda.

The digital agenda is a collaborative approach around implementing strategies, policies, collaborative projects, and research and innovation initiatives to help move into the digital era. The theme of the conference was 'Innovate, Connect and Transform' and the cross-sectoral event was attended by 7000 people from all over the world (government, business, academia and civil society).

### Digital Revolution

Information and Communication Technologies (ICTs) are rapidly changing society as they become part of the world of business, education and the economy, as well as the private lives of ordinary citizens. ICTs are becoming part of everything. The changes (from ICT developments) are often referred to as the digital revolution.

These changes are expected to have as great if not greater an impact on the global society as the industrial revolution during the 18th and 19th centuries. Also, the digital revolution is not restricted to a particular country or continent – it is a global phenomenon.

### Preparing for the digital revolution – a vision and strategy for competitiveness

A highlighted theme of the conference focused on the need for countries to develop digital strategies to help transition into the digital era. These strategies need partnerships and collaboration across all sectors. This is because of the all-encompassing and multi-faceted impact of the digital revolution. The message is clear – this something everyone needs to be part of rather than a single institution driving the strategy on its own.

A key element of these digital strategies looks at promoting and developing digital skills (e-skills). This is across all the

*Delegates at the EU ICT 2015 Conference, October 2015*



### What is ICT?

ICT stands for information and communication technology.

### What is an e-skill?

An e-skill is more than knowing the basics of how to use a computer (computer literacy). While it's essential to be computer literate, the important question is: what can you do with that? **An e-skill means being able to use technology to actually do something – to actively take part in the world and move ahead.**

sectors (business, government, ordinary people) to ensure that all citizens become and remain included in the digital society.

### Delivering digital skills and learning

Of particular interest at the conference was the panel discussion held on 'Delivering digital skills and learning'. The panel included:

- Sanna Lukander (Vice President of Learning, Rovio Entertainment, Finland)
- Yuma Inzolia (Head of Social Impact and Special Projects and head of MOOC Strategy and Special Projects, Telefonica Educación Digital, Operaciones, Spain)
- Klaus Petter (Curricula creator, KUKA Roboter GmbH, KUKA College, Germany)
- Ellen Helsper (Associate Professor Media and Communications, London School of Economics and Political Science, Media and Communications, United Kingdom)

### Key messages on digital skills and learning for the global audience

- **Shift towards defining and understanding digital skills as basic life skills:** As life becomes increasingly digital, people either engage directly with technology or people are surrounded by a world that is engaging with technology. It is important to note that services and products are becoming digital. Consequently, it's critical to have a grasp of what the basic skills are that citizens need to be part of the digital world. This is so that citizens can benefit from advances in digital developments and function effectively in the digital world. These skills are increasingly seen as **basic life skills** as opposed to technical skills. Investing in the basic life skills of citizens is equally important as investing in specialised technical skills (such as data analytics

 to next page

### Article continued: Digital skills need a common vision and framework

and e-practitioner skills). Since South Africa is on a 'mobile first' path, it makes sense that the focus should be on unlocking the benefits of mobile skills.

- **Embedding digital skills development in schools:** To ensure that digital skills development is approached in a systemic way (that they become part of the system), digital skills development needs to be embedded in schools. Currently, the formal workplace is not provided with people who have the necessary digital skills. It means that the digital strategies and interventions need to work towards closing this gap.
- **Focusing on transferable skills rather than teaching how to use a specific product:** To close the digital gap in the workplace, it's increasingly needed from all sectors to invest in the up-skilling and reskilling of their employees. This is to close the digital skills gap and to ensure that the workforce remains productive and competitive while digital developments occur in the various sectors. The focus is shifting to developing transferable skills that will enable employees to quickly adapt and adjust to digital advances. (This is in comparison to teaching skills that focus on a specific product.)

#### Key pointers for the way forward

- The global view is that closing the gap needs a multi-stakeholder approach. This gap refers to digital skills development and ensuring the needed digital skills are developed for future 'digital' jobs. All sectors have a critical role to play to close the gap and to grow the necessary skills for the digital era.
- The global view is also that a unified digital skills framework is needed to align role players and coordinate efforts. The framework will then guide skills interventions of the various stakeholder groups and sectors, as well as monitor and assess progress among other things.

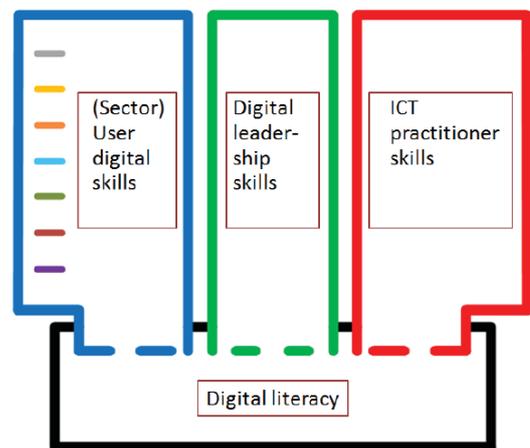
#### South Africa's response to digital skills development is aligned with international thinking

The South African government recognised that a multi-stakeholder approach is needed to deliver on digital skills development in the country. The e-Skills Institute was an initiative created by the DTPS to develop this approach. The e-Skills Institute is in the process of merging with NEMISA and the Institute for Satellite and Software Applications (ISSA). Currently called NEMISA, it is moving towards becoming the Ikamva National e-Skills Institute (INeSI).

As part of the work that has been done regarding digital skills development, it was clear from the beginning that South Africa needed a digital skills framework as a critical building block and unifying instrument.

"Digital Skills Framework One' was developed by Prof Walter Claassen, in collaboration with the Western Cape e-Skills

Part of the Digital Skills Framework created for South Africa



CoLab, to provide a first version of a unified framework," explains Dr Craffert.

"A unified framework will help the various stakeholders and role players to have an integrated view on digital skills. The framework provides the base for identifying and naming the individual skills. This ranges from professional skills to user skills in work contexts, as well as e-skills in all aspects of daily life. The framework shows the interdependencies among the various sectors. It also accommodates existing sub-frameworks that are widely accepted internationally."

Dr Craffert says that, in this respect, South Africa is aligned with international developments. The South African Digital Skills Framework will help with coordinating national discussion and initiatives. This will help reduce duplication, as well as identify gaps. It will also help with monitoring the progress of the collective effort.

However, going forward two processes need to be followed:

- South Africa needs to continue participating in the global discussion and developments around the unified digital skills framework.
- The first draft of the South African Digital Skills Framework needs to be tabled for discussion, comment and input from all the stakeholder groupings.

#### Digital is not an aspect of society but society itself is becoming digital

Throughout the ICT2015 conference, most speakers emphasised that digital is not an aspect of society but that society is becoming digital. To remain part of the digital era and to ensure that countries remain relevant and competitive, we need to see digital skills development as a 'life-long learning' process. 😊



**Training**

**NEMISA is offering the following 2015/2016 courses for full-time study**

Graphic Design	
FET Certificate: Design Foundation	<p>NEMISA offers a one year programme that serves as a foundation for both graphic design and animation. The course exposes learners to theoretical, practical and technological components of graphic design and animation production. Aimed at preparing learners for further education and training in the fields of animation and graphic design, the course equips learners with the key skills of conceptualisation and visual communication. Learners are further exposed to: writing for multimedia, digital storytelling, and art direction.</p> <ul style="list-style-type: none"> <li>• <b>Entrance requirements:</b> Matric/Grade 12/NQF Level 4-related qualification, Mathematics and English at NQF Level 4, Entrance Exam and Visual Portfolio</li> <li>• <b>Advantageous:</b> NC(V) level 4: IT or Marketing</li> <li>• <b>Application deadline:</b> 30 November 2015 (payable upon acceptance in January)</li> <li>• <b>Commencement date:</b> 25 January 2016</li> <li>• <b>Annual course fee:</b> R28,005.12 (registration fee is R2,800.51 – payable upon acceptance in January – with the remaining balance of R25,204.61 payable over 10 months from February to November)</li> </ul>

Animation	
National Certificate: 2D Animation	<p>NEMISA offers an 18 month programme that is based on both traditional and digital animation and is designed to cover the entire value chain of animation production (from conception, to production and editing). The course exposes learners to theoretical, practical and technological components of animation production in the 2D animation discipline. Aimed at preparing learners for the competitive market place of animation and digital graphics production, the course equips learners with the key skills of interpretation, visualisation, conceptualisation, production and technical application of animation projects. In the first year we introduce learners to Traditional Animation. In the second year, we begin Digital 2D Animation studies. Graduates will acquire the skills necessary to work independently, collaboratively and in studio settings.</p> <ul style="list-style-type: none"> <li>• <b>Entrance requirements:</b> Matric/Grade 12/NQF Level 4-related qualification, Mathematics and English at NQF Level 4, Entrance Exam and Visual Portfolio</li> <li>• <b>Application deadline:</b> 30 November 2015</li> <li>• <b>Commencement date:</b> 25 January 2016</li> <li>• <b>Annual course fee:</b> R38,000.00 (registration fee is R3,800.00 – payable upon acceptance in January – with the remaining balance of R34,200.00 payable over 10 months from February to November) 😊</li> </ul>

**Do you have a passion for Art?**

Are your drawing skills out of this world?

You can apply for one of the following courses:



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<b>Annual Course Fee:</b> <i>Graphic Design Foundation</i> - R28,005.12	<b>Registration Fee:</b> R2,800.51 ( <i>Payable upon acceptance</i> )	
<b>Annual Course Fee:</b> <i>2D Animation</i> - R38,000.00	<b>Registration Fee:</b> R3,800.00 ( <i>Payable upon acceptance</i> )	

Applications available from [www.nemisa.co.za](http://www.nemisa.co.za); or contacts us for more info Mary Moleke (011) 644 4834 [MaryM@nemisa.co.za](mailto:MaryM@nemisa.co.za); or Lungile Xulu (011) 644 4801 [LungileX@nemisa.co.za](mailto:LungileX@nemisa.co.za) or message us on Facebook <https://www.facebook.com/Inesi.Official>.

**NB.** Applications will be accepted by hand delivery only addressed to **The Recruitment Officer:** 21 Girtou Road, Parktown, Johannesburg, 2193.

**NEMISA Profile****Meet Keroshin Reddy, NEMISA Film and Television Lecturer**

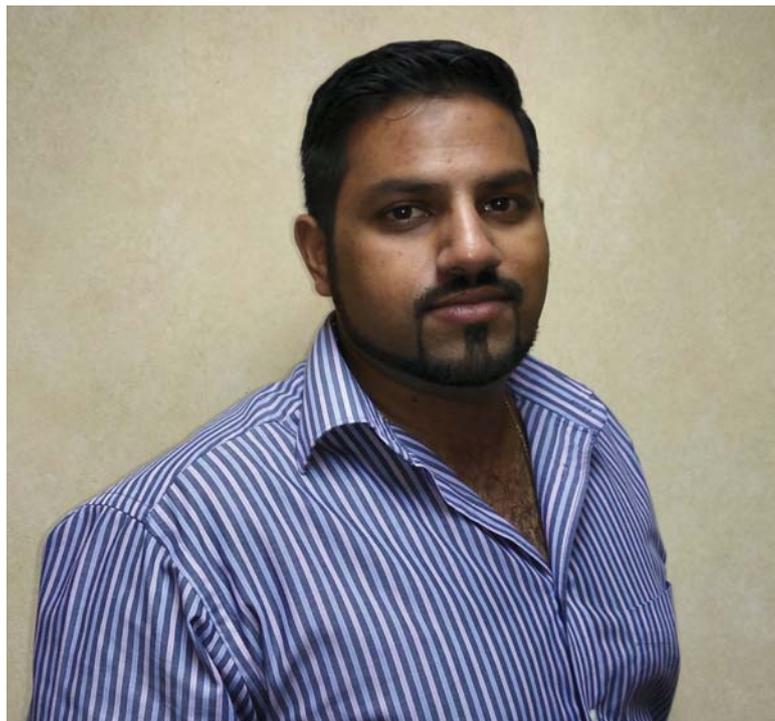
Keroshin Reddy is a new Film and Television Lecturer at NEMISA. We asked him some questions to get to know him better.

**Q What is a film and television lecturer?**

I write course content, teach and assess on film and television. I teach the fundamentals like the business of television. This involves areas such as identifying target markets, proposal writing, organising project funding, on-set management and crew management.

**Q What were you doing before working at NEMISA?**

For five years, I was a lecturer, training students in degree film studies, as well as a manager of projects and productions at AFDA. AFDA is the



South African School of Motion Picture Medium and Live Performance in Johannesburg.

I then moved to Think Ahead Education Solutions. There I held the title of Education Project Manager, working closely with South African schools. We implemented iPads in the classroom and trained teachers, parents and students on the best uses of technology in the classroom.

**Q What did you study originally?**

I first did a BA Live Performance and then a BA Honours Motion Picture Medium. Both of these qualifications were at AFDA.

**Q Why did you go into this field?**

I entered the field of entertainment many years ago when I found my love for the arts. This love developed into a passion because I was inspired by my high school mentors to pursue my talent in stage performance and fine arts.

The world of entertainment is an unforgiving industry but it's where change can be influenced and differences are non-existent. We can influence change with the stories we tell and we don't exclude anyone because of their social or cultural differences. We are an industry driven by differences so we welcome them as they allow us to grow and develop better content and people.

**Q What advice would you give to someone going into the entertainment industry?**

This is a tough industry. Like any other profession, you need to work hard to make it up the ranks. But if you're open to learning, you will succeed in anything you invest your time in. 😊

**NEMISA updates**

NEMISA completed the TV and Post TV Production training for 40 youth in KwaZulu-Natal mid-September 2015. The training was done in partnership with the KZN Film Commission. It prepares young people for documentary and film making. It is a five-month MICT SETA Skills Programme within the Further Education and Training (FET) Certificate: Film and Television Production. NEMISA will be reaching out to more of the rural and peri urban communities to enable young people to realise their dreams. TV and radio learnerships have begun in Eastern Cape and Northern Cape respectively.



## Technology for improved e-skills

## e-Skills and improved healthcare through patient management systems

The Limpopo e-Skills CoLab focuses on connected health, also known as e-health. The CoLab has been running e-literacy training courses, including those specifically focused on health workers, among other initiatives. However, its biggest project is to assist with the implementation of a patient management system in four clinics in the region.

### Open source vs proprietary software

"The question, from an ICT perspective, is an age-old ICT

conundrum – to go open source or proprietary?" explains Dr Farivar Rahimi, Director of the Limpopo e-Skills CoLab based at the University of Limpopo. "As with every conundrum there are pros and cons to both... In addition to the human resource capacity related to open source, one also has to consider the maturity of the product and the size and involvement of the community supporting the software."

The Limpopo e-Skills CoLab has chosen the most mature system currently available in South Africa, designed for South African needs. "It is a proprietary system developed and supported by a South African company, which has been implemented in a number of areas around the country and on the continent, in different guises," says Dr Rahimi. At the same time, the CoLab will continue investigating open source solutions, including participating in the development of appropriate open source initiatives.

### Implementation to begin early 2016

Currently, the CoLab is undertaking an analysis on the identified clinics. The aim is to begin implementation in early in 2016.

### Understanding the impact of patient management systems

The patient management system forms part of a bigger project that involves the CoLab, various departments of the University of Limpopo (including the Medical Sciences and Nursing departments) and a group of Flemish Universities in Belgium. This means that the impact of patient management system implementation will be measured against data that has been collected in the area for more than 15 years.

"The importance of this patient management system cannot be overemphasised. In addition to assisting clinics with day-to-day management and the possible reduction of waiting times, the system will also make the lives of healthcare workers easier by automating their reporting – both within the clinic and to their line management," says Dr Rahimi. "The system will also present healthcare workers with a learning opportunity and a chance to hone their clinical skills by incorporating decision trees to assist nurses to better and more accurately diagnose patients." 😊

### What is connected health or e-health?

e-Health means using ICT (information and communication technology) to assist with healthcare. It usually encompassing three main areas:

- Delivering health information, for health professionals and health consumers, through ICT.
- Using the power of ICT and e-commerce to improve public health services, such as through the training of health workers.
- The use of e-commerce and e-business practices in health systems management

### What is open source software and what is proprietary software?

Open source software (OSS) is software whose source code is available for modification (changing) or enhancement (improvement) by anyone. Source code is the part of software that programmers work with to change how a programme works.

Proprietary software is owned by an individual or a company (usually the one that developed it). There are almost always major restrictions on its use, and its source code is almost always kept secret.



## Contact NEMISA

The National Electronic Media Institute of South Africa (NEMISA) can be contacted at the following:

- [info@nemisa.co.za](mailto:info@nemisa.co.za)
- 011 484 0583
- 21 Girton Road, Parktown, Johannesburg, 2193
- PO Box 545 Auckland Park, Johannesburg, 2006



## Future events

## Thought Leadership Series on the Digital Economy



The University of the Western Cape's Faculty of Economic and Management Sciences, the Western Cape e-Skills CoLab and Donor Relations are running another 'Thought Leadership Series on the Digital Economy'. This will be held on 13 November 2015.

**The topic?** 'Why Africa business has to go mobile? Is Mobility the key to Digital Transformation?' by Mr Kristofer Kimbler, Business Development Executive, IBM MEA, Telco Enterprise Mobility & M2M Solutions.

**Mobile devices create physical, intellectual and operational mobility:** Through the use of

mobile devices (such as smartphones and tablets), human mobility gets new meaning. This mobility moves across the physical, intellectual and operational. People are able to overcome the many limits of time, distance, location and human capability.

**Mobile transformation can benefit many more people than those that already know and use ICT:** Mobile device developments are often described as a 'mobile transformation' that impact on both work and life. The new world of mobility gives more power to those who already use ICT but also to the 'mobile first' generation. This generation refers to countries and communities that can leapfrog the previous gradual stages of technology development that a lot of countries had to go through. Many more people benefit, and people benefit in many more ways.

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### Notes from the previous thought leadership seminar – 'Organisational agility in the face of digital disruption'

Digital disruption can be explained as the change that happens when new digital technologies affect the usual way of doing things. The previous thought leadership seminar was on 'Organisational agility in the face of digital disruption'. It was held at the University of the Western Cape on 21 August 2015.

Following are some of the points from the presentation by Mr Brian Pinnock, Head of Innovation, Internet Solutions, Dimension Data:

- Digital involves using information intensity, connectedness and mobility to transform how we serve customers, partners and employees. It is not just about moving away from an analogue business.
- The 'ideal' digital organisation is transformed by digital technologies and capabilities.
- The digital maturity of an organisation is driven by its digital strategy.
- The objectives of a digital strategy include: improving customer experience and engagement, increasing efficiency, improving business decision making, improving innovation, and transforming the organisation.
- Sometimes there is partial digital disruption and sometimes total digital disruption – impacting on the user experience, business

model, change in flow of value or power etc. Publishing is an example of where there has been partial disruption. Photography is an example of total disruption.

- Mobile is arguable the most important ingredient of digital disruption – particularly due to the online access provided by smartphones.

Mr Pinnock spoke in detail about organising for digital agility. (Agility is the ability to respond quickly to things such as change.) He noted that each organisation needs to understand the digital maturity level of their particular industry and compare their organisation against this maturity level. There is a need to:

- Raise the awareness levels regarding digital transformation
- Know where to place a potentially disruptive technology or business model
- Develop the necessary digital skills to remain relevant in the digital economy

He concluded the discussion by quoting Charles Darwin: "It is not the strongest of the species that survives, nor the most intelligent, but the one most responsive to change."

### Article continued: Thought Leadership Series on the Digital Economy

#### Doing business in this new context means we need to think anew.

We need to look at the following questions:

- Who really benefits from the digital economy?
- How does mobility transform life and business in countries on the African continent and what are the implications for us?
- What are the key technology and business drivers of this mobile transformation?
- What do we need to do to make enterprise mobility more affordable and available to the continent?
- Given digital technologies' ability to expand human capabilities, the concept of 'cognitive business' comes to the fore. What is cognitive business and what does it have to do with digital transformation?

**What is The Thought Leadership Series?** It is a shared platform between academia (the world of inquiry and



analysis) and business (the world of work). It is a space to discuss, explore, learn and research matters relating to the digital economy. This will enhance our individual and collective ability to engage with these new challenges and opportunities.

**Venue:** School of Public Health, University of the Western Cape, Bellville

**Time:** 7.30am to 9.30am

**Booking:** Seats are limited so please book in advance. Email Ms Melissa Maans at [mmaans@uwc.ac.za](mailto:mmaans@uwc.ac.za). ☺

#### What is broadband?

Broadband means fast, always-on access to the internet.



### The provincial e-skills CoLabs

The provincial e-skills CoLabs are based at universities. Each has a focus on a specific area in e-skills:

- Western Cape e-Skills CoLab: e-Inclusion and Social Innovation, based at the University of the Western Cape
- KwaZulu-Natal e-Skills CoLab: e-Enablement for Effective Service Delivery, based at Durban University of Technology
- Eastern Cape e-Skills CoLab: ICT for Rural Development, based at Walter Sisulu University
- Gauteng e-Skills CoLab: Creative New Media Industries, based at the National Electronic Media Institute of South Africa (NEMISA)
- Limpopo CoLab: Connected Health, based at the University of Limpopo
- Southern Gauteng/Northern Cape CoLab: e-Literacy and e-Business (knowledge economy and e-social astuteness), based at the Vaal University of Technology

### SA moves up seven places in WEF annual 'Global Competitiveness Index'

South Africa is up seven places in the World Economic Forum's (WEF) annual 'Global Competitiveness Index'. (The index was released at the end of September 2015.) The country is now placed 49 out of 140 countries. The best improvement comes in technological readiness, which is up 16 places.

This new placement is a change from the four previous years of moving down the list. The upward move is largely due "to an increased uptake of ICTs, especially higher Internet bandwidth", according to the WEF report.

e-Skills are an essential part of the increasing use of ICTs. Technology and digital devices may be made available but they are only used if people know how to use them effectively.

The essential role that e-skills play is recognised in South Africa's broadband policy, South Africa Connect. One of its four pillars is called Digital Opportunity. This pillar includes e-skills as a necessary part of the broadband strategy – that e-skills are needed for people to use broadband and to create the opportunities that broadband brings.



## NEMISA Profile

## Meet Dr Surendra Thakur, CoLab Director at the KZN e-Skills CoLab

Dr Surendra Thakur is the CoLab Director at the KwaZulu-Natal e-Skills CoLab: e-Enablement for Effective Service Delivery, based at Durban University of Technology (DUT). Most people know him as Colin. He answered some questions so we could learn a bit more about him and the KZN e-Skills CoLab.

### Q What does your work entail and how does this promote e-skills?

The CoLab's work involves advocacy and awareness building around e-skills. It is also about the creation of knowledge and imparting skills around all things digital, such as mobile and computing devices. This moves from a social level, like working on social media communications, to engaging with government so that they can leverage digital and technology tools more effectively.

At the CoLab, we do research and development around e-skills. This also means looking for gaps where e-skills capacity or innovation needs to be built. The CoLab creates curricula and training around this. We also work with provincial stakeholders so we are all aligned. It's important not to duplicate and to be aligned with national objectives.

Among my other work, I have also been appointed by Stanford University as the co-facilitator to teach programme management for innovation to the Technology Innovation Agency (TIA).

### Q Does the KZN CoLab have a focus?

Each of the CoLabs has a specific focus area which is important to the whole country. At the KZN e-Skills CoLab, we



focus on improving service delivery in government through e-skills. This includes encouraging citizen participation.

### Q What motivated you to get into this field?

At university in the 80s, the anti-apartheid struggle mentality wasn't only about protesting the government but about community mobilisation for self help. How can we help ourselves and our communities to be better, for example, at maths or school? I was also a community activist then.

I had studied computers and statistics at the University of Durban-Westville, so my focus is on this area of education and community mobilisation. The focus has continued throughout my life. I believe in 'one person, one connected

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### 'System Architecture for Secure Mobile Internet Voting', doctoral thesis by Surendra Thakur

The thesis focuses on the development of an enhanced secure mobile internet voting system architecture. This will offer the needed security requirements to theoretically mitigate some of the intrinsic administrative and logistical challenges of voting. Challenges include the lack of mobility support for voters, voter inconvenience, election misconduct, and possible voter coercion often associated with the conventional poll site voting system.

The research work improves upon a well-developed Sensus reference architecture. It does so by using near field communication (NFC), global positioning system (GPS), voice biometric authentication, and computational intelligence techniques. Using a combination of these features

provides a theoretical mitigation of some of the security challenges.

### Want to know more about electronic voting (e-voting)?

- You can listen to a radio interview Colin had on Cape Talk Radio about electronic voting. Click <https://soundcloud.com/primediabroadcasting/is-sa-ready-for-evoting> to listen.
- There is another recent radio interview about e-voting on LotusFM on 2 November 2015. Click on <http://iono.fm/e/223723>.
- You can also read more about e-voting by clicking on [http://issuu.com/dutalumni/docs/dut\\_alumni\\_mag\\_2\\_3rd\\_issue\\_](http://issuu.com/dutalumni/docs/dut_alumni_mag_2_3rd_issue_) and going to p12.

### Article continued: Meet Dr Surendra Thakur, CoLab Director at the KZN e-Skills CoLab

device'. It means we are no longer dependent on groups, like clubs and societies, but are connected to the world and can access free information. This we can then reference or reconstruct within our own context.

But it isn't as simple as just having a device. Once you have the device, the country has a responsibility to provide affordable broadband (access to the internet) and to drive useful content to its citizens. However, the step before this is to teach people how to use the devices. This includes teaching e-skills to government employees to improve citizen engagement and for effective service delivery.

#### Q What were you doing before you became the KZN e-Skills CoLab Director?

From my ICT studies, I went to work in industry in the ICT departments. Then I went into academia and became an ICT lecturer at DUT. At the same time, I was involved in a lot of community-based projects, such as teaching children how to programme. The university decided to make the projects a full-time focus and I started out with DUT's Enterprise Development Unit (EDU).

My scope has now increased to include the KZN e-Skills CoLab. Not only does this involve e-skills in general and the e-enablement of service delivery as a CoLab focus, but I feel strongly about teaching parents about internet

safety for children. I do this as part of the CoLab work but it also becomes part of the community work that I do on the weekend.

#### Q You have a high profile around electronic voting (e-voting) – how did this come about?

One of the projects I was involved in at EDU was looking at contextual analysis of the suitability of electronic voting in South Africa. At the time, I didn't realise that no one else on the continent was doing this.

I was also independently commissioned by the Independent Electoral Commission (IEC) and the United Nations Development Programme (UNDP) to study electronic voting technology. I am consequently considered an expert in the field and am invited to numerous national and international conferences.

I have recently completed my PhD in Technology and the thesis focuses on e-voting. I came up with the idea because I re-imagined democracy in the context of the modern world. What is the most available and pervasive device? The mobile phone.

Of course there are safety issues with using a mobile phone to vote but I propose how to potentially mitigate these risks in the thesis. My thesis also looks at various safety features, such as using GPS (global positioning of the individual), near field communication (to assist with authenticating the individual) and biometric voice recognition. Voice recognition, using the mobile phone, can help verify the voter as well as register the vote. However, the two steps are not 'linked' so the vote is confidential.

It was also important to look at cultural context when considering e-voting. For example, women who follow Islamic religious law often cover their heads where only their eyes are seen. It is also against religious law for unknown men to touch these women's hands. This causes issues with photos and fingerprints and this can exclude people from voting.

#### Q Any messages around e-skills?

We are blessed and cursed with unimaginably great tools for communication. They can make us look like prophets or idiots, the choice is ours. How we engage with social media reflects on who we are, our community and ultimately the country.

On a community level, it's important to remember our social and moral responsibility to teach those in our ecosystem about technology and the connected world. This means grandmothers, neighbours, friends, people who work for us etc. Show them how to make use of digital tools to the best advantage. In essence, we should all follow the 'Each one, teach one' slogan. 😊

#### KZN e-Skills CoLab presents at 'Electoral democracy in Africa' colloquium

On 29 October 2015, Dr Surendra (Colin) Thakur presented at the third annual colloquium of the WIPHOLD-Brigalia Bam Chair in Electoral Democracy in Africa. His topic was 'Digital Democracy: Is It on or off?'. The colloquium ran from 28-30 October 2015 at UNISA in Gauteng. The theme was 'Ethics, Accountability and Fairness in Elections: Lessons for Africa'.

Pre-conference literature noted that an "increasing body of research and practitioner experiences suggests that ethics and accountability might be the cornerstones of Africa's transition to democracy. While lack of accountability can potentially undermine political stability in a country (Chiroro, 2008), to what extent is accountability the answer to Africa's election woes?"

The annual colloquium brings together academics, practitioners, politicians and other stakeholders to debate issues and share their experiences of elections in Africa.



## Promoting e-skills

## e-Skills and social innovation

The KZN e-Skills CoLab gave a talk on social innovation to the Durban University of Technology's Faculty of Arts and Design seminar on 16 October 2015. The theme was 'Art and Social Innovation' as this is one of the faculty's research focus areas. Following are some of the points made by Dr Surendra Thakur, Director of the KZN e-Skills CoLab:

- A social innovation is a novel solution to a social problem. It is more effective, efficient, sustainable or just than current solutions. The value created is primarily more beneficial to society rather than to private individuals.
- There is a need to look at other types of innovation models that are more flexible, aware of scarce resources (frugal) and inclusive. An example is called

jugaad innovation. Jugaad roughly translates as "an innovative fix for your business; an improvised solution born from ingenuity and cleverness".

- Colin asserts that South Africa is at the opportunity stage for social innovation. South Africans can use e-skills to deliver social innovation services, particularly with social innovation mobile apps. 😊



### What is social innovation?

Social innovation is about new ideas (such as products and services) that meet social needs ie they are for the good of society.



## Promoting e-skills

## e-Skills are important for recording cultural heritage

The Deputy Minister of Telecommunications and Postal Services, Prof Hlengiwe Mkhize, commemorated Heritage Month in Sebokeng on 15 September 2015. The theme was 'Our indigenous knowledge: towards the identification, promotion and preservation of South Africa's living heritage'. This was part of a launch of the first Women in Agriculture organisation in the area. The organisation aims to empower women in rural and urban areas.

The Deputy Minister looked at e-strategies regarding agriculture, as well as promoting the preservation of South African heritage and culture through ICT and using ICT to promote economic growth and to develop communities. NEMISA supported the Deputy Minister with branding and attendance.

### What is Heritage Day?

Heritage Day on 24 September recognises and celebrates the cultural wealth of South Africa. It is about remembering the cultural heritage of the many different cultures that make up the population of South Africa. Cultural heritage (or living heritage) is a foundation for communities and a source of identity and continuity. It includes cultural tradition, oral history, performance, indigenous knowledge systems etc. It is also a way forward to promoting social cohesion.

### Culture and heritage can drive employment

When focusing on using South Africa's heritage as an economic asset, Prof Mkhize noted that the New Development Plan (NDP) encourages the use of heritage and culture to generate employment. This includes the arts and the creative economy sector.

*Celebration for Heritage Month, Sebokeng, 15 September 2015.*



### South Africa to become an information society

A core function of the Department of Telecommunications and Postal Services (DTPS) is to contribute to the development of an inclusive information society. This will include information and ICT tools as key drivers of economic and societal development.

### e-Skills are also important for cultural heritage

Prof Mkhize said that the DTPS is tasked with e-skilling the nation for equitable prosperity and global competitiveness: "We are working towards a point wherein all content will be available digitally. This will most importantly help in recording our cultural heritage so as to preserve it for our future generations. Schools are now acting as technological hubs; educational content is now available digitally. A cellular phone is no longer just a means of talking to another person

 to next page

### Article continued: e-Skills are important for recording cultural heritage

but a source of digital information whereby people can gain access to a wealth of information on the internet.”

#### Ensuring citizens are connected with broadband

DTPS is tasked with making sure that every citizen, business and organisation are connected. The recent focus is on broadband. South Africa's Broadband Policy, South Africa Connect, outlines a number of activities to improve broadband in South Africa. The vision for broadband is that by 2020, 100% of South Africans will have access to broadband services at 2.5% or less of the population's

average monthly income.

The broadband policy is a four-pronged strategy which looks at what is needed in terms of infrastructure and services, as well as what is needed to make sure the infrastructure and services are used. Prof Mkhize said, “There are endless uses which broadband can be put to once rolled-out. Digital libraries can educate people around the world about our way of life, our culture and heritage. The preservation of our own culture and heritage can help us create economic centres.” 😊

#### NEMISA and e-skills highlighted in speeches from the DTPS minister and deputy minister

- DTPS Minister Dr Siyabonga Cwele spoke at the 2015 Southern African Telecommunications Networks and Applications (SATNAC) Conference, Western Cape, on 7 September 2015. SATNAC is Africa's leading ICT conference that puts students, academics and government representatives together with specialists and leaders from the industry. The theme was 'Africa – The Future Communications Galaxy'. NEMISA moving towards INeSI (the Ikamva National e-Skills Institute) was mentioned as part of seeing an increased uptake and use of ICTs, including skilling government employees to be able to effectively provide e-government services.
- DTPS Deputy Minister Prof Hlengiwe Mkhize spoke at the International Women in Information Technology Summit on 17 September 2015 in Gauteng. The theme was 'Using technology and science to spur development of rural women'. She noted that part of the DTPS response to the mismatch of skills and the jobs that are needed in the economy is the repositioning of the NEMISA/INeSI “to assist in identifying individuals who can be trained and acquire relevant and job-ready skills in the ICT sector”. The focus will be on youth and women.
- Deputy Minister Prof Hlengiwe Mkhize addressed the delegates at GSMA Mobile 360 Africa on 8 October 2015 in the Western Cape. In her speech, she noted that NEMISA/INeSI “is aimed at the development of local e-skills that are required by the sector and the user skills necessary for social and economic inclusion to secure and create jobs. INeSI brings together government, business, schools, Further Education and Training Colleges (FETs), universities, civil society and global development partners to advance the development of local ICT skills that will make South Africa globally competitive, facilitate economic and social inclusion and contribute to economic growth”.



#### Promoting e-skills

The KZN e-Skills CoLab and Durban University of Technology (DUT) partnered with Accenture around Accenture's 'Skills to Succeed' global corporate citizenship initiative. This initiative focuses on advancing employment and entrepreneurship opportunities in South Africa and other emerging economies. The CoLab assists with implementation and rollout for training 150 candidates in Java programming. Candidates are unemployed graduates seeking jobs in the ICT industry.

Some of the students from the programme entered a third-year DUT academic project competition. There were a total of 36 groups (over 300 learners) that entered and the KZN e-Skills CoLab group won. This was announced on 9 October 2015.

#### Group from KZN e-Skills CoLab partnership wins programming competition

They created a social innovation solution called iPupil. It is a GPS locator that tracks learners. This is done through a web application and a mobile app for Windows. For example, parents can use it to track to see if their children have been dropped at school. The app alerts them if this is not the case. Since it is a research project, the app still needs to be developed further before going to market. 😊



#### What is a mobile app?

A mobile application (mobile app) is a computer programme that runs on mobile devices such as smartphones and tablet computers.