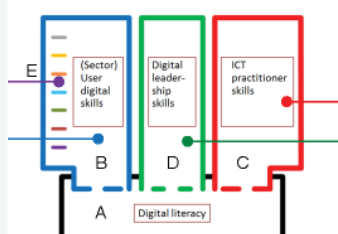


Contents

- p1** NEMISA chosen as a Top Performing Company
- p1** Creating a framework for understanding e-skills and where they fit
Information on Digital Skills Framework One.. [Read more on p1](#)
- p3** Graphic representation of Digital Skills Framework One
- p4** e-Skills awareness in government, business and among the youth
KZN e-Skills CoLab at the Knowledge Management Learning Exchange, Black IT Forum and Eskom Expo for Young Scientists.
- p4** The provincial e-skills CoLabs
- p5** e-Skills themes from the DTPS Deputy Minister's budget speech
- p6** Contact NEMISA
- p7** 'My life in high school' Digital Stories Competition
- p8** All about the Limpopo e-Skills CoLab: Connected Health



Creating a framework for understanding e-skills and where they fit

Information on Digital Skills Framework One.. [Read more on p1](#)



e-Skills awareness in government, business and among the youth
KZN e-Skills CoLab promotes e-skills at the Knowledge Management Learning Exchange, Black IT Forum and Eskom Expo for Young Scientists. [Read more on p4](#)



e-Skills themes from the DTPS Deputy Minister's budget speech
Prof Hlengiwe Mkhize talked around the theme 'Accelerating Broadband Access for Ordinary Citizens'. [Read more on p5](#)



All about the Limpopo e-Skills CoLab: Connected Health
Find out more about the CoLab's focus, past activities and future plans. [Read more on p7](#)

NEMISA update

NEMISA chosen as a Top Performing Company

NEMISA has been selected as a Top Performing Company in the public sector. 'Top Performing Companies' is an annual publication that seeks out the top performers that contribute to making South Africa a great country.

The focus is on showcasing top performing companies in their sectors and celebrating the successes of organisations, leaders, local talent, creativity and the drive for excellence. The annual publication is in its 13th year. Using a comprehensive survey, the research team at 'Top Performing Companies' spends the year choosing companies and public sector organisations.



understanding e-skills

Creating a framework for understanding e-skills and where they fit

Computers and other digital devices (cell phones, smartphones, tablets etc) have become ubiquitous, persistent and pervasive. They are found everywhere and technology continues to develop rapidly, including computers and digital devices. Technology is part of our everyday life and it's become difficult to function without knowing how to use it.

Upgrading e-skills and learning new e-skills

e-Skills constantly need to be upgraded as new programmes and new functionalities are developed. (New functionalities are new ways that a device or a programme can perform.) e-Skills also need to be upgraded as people use programmes and devices in new ways.

People also need new e-skills because there are new technologies and new devices. As the world moves forward, there are also new areas of life, work and learning where

digital devices are used. (Jobs like a social media manager and a mobile app developer never even existed 10 years ago.)

For many people exposed to a new device, the e-skills needed to use it don't necessarily relate to previous e-skills or how they use computers. New devices can bring a completely new skills set.

Different e-skills for different people in different situations

Generally, users and people involved in training interventions are confronted with a bewildering array of e-skills. "This often results in confusion and a lack of clarity about which e-skills apply to whom and under which circumstances," says Prof Walter Claassen, Senior Researcher in the Western Cape e-Skills CoLab.

The confusion increases since computers and other digital devices can be used in very different situations in life, work and learning.

Phones as the main digital device in SA

"Add to this that for a large part of the South African population – as in many other African countries – the feature phone or smartphone might be the first choice or the only digital device available," says Prof Claassen. "It is the smartphone that must now do the same functions where other people may use computers."

Learning programmes need to take numerous factors into account

Often, learning programmes are presented that don't take note of the wide range of e-skills needed in the new digital world. They also don't take into account that specific devices are sometimes used out of necessity.

 to next page



What is ICT?

ICT stands for information and communication technology.

What is an e-skill (digital skills)?

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 add benefit to your life – to actively take part in the world and move ahead.**

Article continued: 'Business on the Move': using a Living Labs approach

Need for identifying and positioning e-skills for citizens

In some areas (such as in ICT divisions in business), professional organisations have maintained structure in the rapidly developing e-skills world. They ensure that new skills are identified and that these fit into a logical structure. "Unfortunately, this has not happened adequately regarding the e-skills relating to the daily lives of citizens, in their personal capacity and in social and family contexts," says Prof Claassen.

Digital innovation doesn't just come from IT professionals and leaders

The aspect of leadership in the digital space hasn't been adequately represented in e-skills frameworks. Many of the exciting and useful innovations that occur when applying technology didn't come from IT management, but from other kinds of leadership. The influence of these kinds of leaders has resulted in digital innovation that improves our lives. This type of leadership needs to be taken into account.

How do we map all these different types of e-skills?

The question then arises: how the various e-skills (in the wide sense noted above) can be structured and mapped in a way that makes them understandable and that helps us to get an overview?

How can we ensure that there aren't unrealistic expectations about certain e-skills for people who have no use for these e-skills? And how can we ensure that the e-skills (that make people function effectively and flourish in a new digital context) are recognised and developed further?

A useful approach is to think of multiple 'ladders' or 'stacks' of e-skills learning and development? This is an alternative to just having one 'ladder' in which ICT practitioner skills are regarded as the ultimate phase of e-skills development.

Purpose of an e-skills framework

The purpose of a comprehensive e-skills framework is to:

- Represent our knowledge of the e-skills domain in such a way that it can be understood
- Explain the underlying relationships and interactions
- Express these underlying relationships visually

Types/Levels of e-skills

The 'groupings' of skills that are conveyed during discussion or are part of expectations (eg 'e-skills for business' and 'broadband skills') can be explained by distinguishing the following types or levels of e-skills:

- **e-literacy or digital literacy:** involves more than a very basic level of e-skills, rather e-skills that can lead to meaningful use in life, work and learning, both for individuals and in small organisations
- **(sector) user skills:** can be generic, or sector- (or

profession-) specific (sector-specific e-skills are represented symbolically by colour bars in the framework proposed)

- **e-leadership/digital leadership skills**
- **ICT practitioner skills:** some people refer to these as 'professional skills', where the e-skills needed refer to professions in the ICT field eg programmers

It is important to position these skills in different 'stacks', as shown in the diagram of the proposed framework. For example, user skills are in a different stack from ICT practitioner skills:

- In ICT practitioner skills, the outcome of the action is an IS (information systems) or ICT result, such as a programme, service or functionality (also known as an artefact).
- In user skills, the outcome is to be able to perform the job or profession in a better or more efficient way through the use of ICT, or to do things in everyday life better, or to be able to do them at all.

"There will be overlap between the different activities across the whole of the framework. However, the framework provides us with a rationale and a way of speaking about specific groups of e-skills," says Prof Claassen.

ICT practitioner skills are not the whole universe of e-skills

The range of skills in the ICT practitioner sector is well described in the Skills Framework for the Information Age (www.sfia-online.org/en). This can be inserted into a more comprehensive framework. It needs to be clear that ICT practitioner skills are an important component, but not the whole universe of e-skills. 😊

Further input into developing the framework

The Digital Skills Framework One is intended to be a comprehensive framework within which the various types of e-skills can find their appropriate position and relevance. "It is a work in progress and I welcome suggestions on how the framework can be developed further," says Prof Claassen.

Contact Prof Claassen at wclaassen@uwc.ac.za for further information.

The diagrammatic form of the e-skills framework follows on the next page.



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Developed in the Colab for
eInclusion and Social Innovation,
University of the Western Cape
(UWC) May 2016 Vs. 1.1 ©
(wclassen@uwc.ac.za)

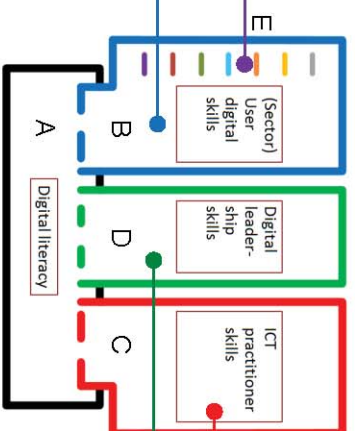
Digital Skills Framework One

E. Sector user skills

The digital skills for work in a specific sector, type of organisation or profession. The skills sets must be worked out for each sector or profession.

Example - new media:

1. Show understanding of the characteristics of the new media, convergence, etc.
2. Show understanding of digital formats, multi-platform requirements and copyright
3. Show mastery of key apps/suites in addition to the applicable general user skills
4. Demonstrate capabilities w.r.t. implementing advanced digital app combinations for handling multiple media sources
5. Demonstrate creative use of ICTs in the new media space (a.o. from concepts to visual and audio expressions).



B. User skills

Skills re the following:

1. Word processing
2. Spreadsheets
3. Presentation
4. Web browsing and information search
5. Communication (e-mail, etc.)
6. Data sets and knowledge flows
7. Project management (if appl.)
8. New era competences (e.g.):
 - a) Social media (proficiency)
 - b) Cloud (understanding and usage)
 - c) Safety, security, privacy, backups, etc.
 - d) Netiquette and ethics (at organisational level)
 - e) Collaboration in the digital context.

D. e-Leadership skills

"The capabilities needed to exploit opportunities provided by ICT, notably the Internet, digital devices and the new media,

- * to ensure more efficient and effective performance of different types of organisations,
- * to explore possibilities for new ways of conducting business and organisational processes,
- * to establish new businesses, organisations, platforms, applications or interventions, and
- * to effect innovation (incl. social innovation) through digital means." (adapted from T. Hüsing et al., *e-Leadership: e-Skills for Competitiveness and Innovation*, 2013)

A. Digital literacy

Categories of actions for individuals relating to life and work:

1. Communicating
 2. Handling information
 3. Transacting
 4. Problem-solving
 5. Work & learning
 6. Creating content
 7. Personal life, home & family
- (A separate set of actions relating to organisations is available. Also: a list of actions relating to safety in all categories.)

2. Handling information:

- a) Using a search engine to find information
- b) Demonstrating knowledge of which websites to target/search for specific sources of information or services, and the ability to work with these web sources
- c) Reading, viewing on digital devices
- d) Evaluating information sources on the web
- e) Bookmarking useful websites and services
- f) Storing/saving data on a device or in the cloud (e.g. Dropbox)
- g) Moving things around on computers and saving them (files, folders, records, favourites)
- h) Making backups and managing a back-up plan
- i) Using the basic functionalities of mobile devices
- j) Making and managing digital lists of various kinds
- k) Finding places and working with digital maps
- l) Printing information as suitable to purpose
- m) Setting up news feeds.

C. Development and implementation: Systems development:

- Systems development management
- Data analysis
- Systems design
- Network design
- Database design
- Programming/software development
- Animation development
- Safety engineering
- Sustainability engineering
- Information content authoring
- Testing

(Detail of one of the categories in SFlA 6.)

C. ICT Practitioner skills

SFlA is the most widely accepted framework for ICT practitioner skills.

SFlA 6

(Skills Framework for the Information Age)

	1. Follow	2. Assist	3. Apply	4. Enable	5. Ensure, advise	6. Initiate, influence	7. Set strategy, inspire, mobilise
A Strategy and architecture							
B Change and transformation							
C Development and implementation							
D Delivery and operation							
E Skills and quality							
F Relationships and engagement							



e-skills awareness

e-Skills awareness in government, business and among the youth

The event: The Knowledge Management Learning Exchange ran from 17-19 May 2016. Held at in Durban, KwaZulu-Natal, the theme was 'Putting Knowledge Management at the Core of the Local Government Agenda'. It was hosted by the eThekweni Municipality and its Municipal Institute of Learning (MILE), in partnership with South African Local Government Association (SALGA) and South African Cities Network (SACN).

Focus on knowledge management: The event was for knowledge management practitioners across South Africa to engage and discuss matters around knowledge management and its development. The aim is to implement successful knowledge management programmes across government and its agencies.



What is knowledge management?

Knowledge management is the systematic management of an organisation's knowledge assets. This is to create value and meet tactical and strategic needs.

e-Skills CoLab involvement: Dr Surendra Thakur, Director of the KZN e-Skills CoLab, made a presentation on 'Technological Systems as a Critical Element of Knowledge Management in the Public Sector'. This was part of showcasing e-skills as an essential enabler for the public sector. The presentation was made during a facilitated session.

Audience: Participants came from municipalities, government departments, government agencies, NGOs and partners (including academia and the private sector). 😊

More e-skills awareness activities from the KZN e-Skills CoLab

- On 6 May 2016, the KZN e-Skills CoLab was invited to present at a Black IT Forum event in Durban, KZN. Dr Surendra Thakur spoke about the e-skills necessary for SMMEs in South Africa. He has been co-opted into Black IT Forum's Executive Advisory Committee, focusing on mentoring and skills.
- Dr Thakur of the KZN e-Skills CoLab was involved in the Eskom Expo for Young Scientists. The event was held on 21 May 2016. Representing e-skills, Dr Thakur was a judge on the ICT and clean energy projects. The annual regional expo includes local learners as expo participants.



Dr Surendra Thakur, Director of the KZN e-Skills CoLab, at a Black IT Forum event on 6 May 2016.

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 e-Skills CoLab:** Connected Health, based at the University of Limpopo
- **Northern Cape/Southern Gauteng e-Skills CoLab:** e-Literacy and e-Business (knowledge economy and e-social astuteness), based at the Vaal University of Technology
- **North West e-Skills CoLab:** e-Agro-tourism, based at the University of the North West



e-skills government alignment

e-Skills themes from the DTPS Deputy Minister's budget speech



Deputy Minister of the Department of Telecommunications and Postal Services, Prof Hlengiwe Mkhize

In her speech to parliament for the DTPS Budget Vote on 10 May 2016, Deputy Minister of the Department of Telecommunications and Postal Services, Prof Hlengiwe Mkhize, talked around the theme 'Accelerating Broadband Access for Ordinary Citizens'. Following are some of the focus areas, in particular those that refer to e-skills (digital skills).

Teacher digital literacy training in schools

The Schools Connectivity programme now has 11,

528 schools connected nationally. Of particular interest is that, in a number of regions, the Department of Basic Education has initiated training modules for teachers on digital literacy.

e-Skills will be needed for ICT initiatives

The increased number of ICT initiatives, such as Gauteng's online schools registration process and increasing the number of connected primary healthcare facilities, show the government's drive to create a connected society. With initiatives like these, e-literacy and digital skills become increasingly important as they are needed to make use of the new technologies.

Skilling youth for the digital revolution

Prof Mkhize noted the importance of skilling young people for the information revolution. She spoke of five As concerning the digital revolution:

- **Availability** of broadband network – especially in the most remote rural areas
- **Awareness** – people need to be aware of the value of being connected by broadband
- **Accessibility** of broadband at a national level – from villages to in the home
- **Affordability**
- **Ability** to use the applications

Skills needed for the broadband rollout

She notes that the "SA Connect Policy has identified human capital development as a key success factor in ensuring social and economic inclusion in the Information Society and knowledge economy".

Echoing the Digital Opportunity Pillar in the broadband policy, she notes that "rapid deployment of technologies to communities is not an end on its own. What is needed is a

shared dynamic skilling programme, which puts trainees in a pipeline, from acquiring basic computer skills to advanced skills for accessing internet economies".

Discussions with other government departments around e-skills include:

- e-Education to drive a digital the economy
- Investment in the R&D and skills for knowledge economy
- Internet connectivity for rural economy to stimulate growth and opportunities for entrepreneurship
- Development local skills for knowledge economy

About NEMISA and the creation of INeSI

The Deputy Minister said that "the Ikamva National e-Skills Institute was initiated to address the overlap, duplication and gaps in e-skills development within and between government departments, the education sector, business and civil society". Increased funding is being given to support establishing the institute. This falls under the ICT Enterprise Development and Oversight programme.

She notes that creating these types of institutions is "informed by the realisation that broadband rollout and the deployment of all other connecting technologies require a skilled society for rapid uptake and possible contribution to the sector through the deployment of local content and many other forms of innovation".



Article continued: e-Skills themes from the DTPS Deputy Minister's budget speech

Focus areas for digital skills

Regarding a skills pipe line, Prof Mkhize focused on "categories under environment, socio-cultural and economy" as the centre. She also noted that the digital revolution is an opportunity "to meet the country's set targets for the number of disabled people who should be employed in each and every organisation". In particular, designing technology tools to compensate for disabilities.

She directed the sector to increase the techno-girl programme "as it prepares girls to meet requirements in faculties like engineering, science and technology". The focus on achieving gender equality and empowering all women and girls is part of the United Nations' Sustainable Development Goals (SDGs).

She noted that government "will pursue multi-stakeholder relationships with various research bodies... to ensure that women from our communities acquire the necessary digital skills and benefit from the educational opportunities from our own home-grown agencies like NEMISA and other Universities of Technology thus fostering long-term partnerships with employees, entrepreneurs, facilitating SME opportunities and economic growth".

Growing SMMEs is also seen as a key development area.

Online security

Prof Mkhize also noted a focus on online security, particularly for the youth, children and women. The aim is to have an ICT Summit to achieve among other things:

- Development of the comprehensive Child Online

Protection Programme

- Research programmes on cyber bullying, social cohesion, online behaviour and parents support

For the full speech, go to www.dtps.gov.za/mediaroom/deputy-minister-s-speeches-ms-stella-ndabeni-abrahams/620-accelerating-broadband-access-for-ordinary-citizens.html. 😊

NEMISA exhibiting at the parliament budget vote

NEMISA and its CoLabs were part of the exhibition that was part of the Budget Vote to parliament on 10 May 2016.



The DTPS Deputy Minister with some of the Directors of the e-Skills CoLabs.

TV inserts developed by participants in the NEMISA boot camp

When NEMISA ran an eight-week boot camp from 22 February to 15 April 2016, the 11 learners were divided into three production teams. They produced news and current affairs inserts on social issues. Go to www.youtube.com/user/NEMISAtv to see the end results.



Contact NEMISA

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- 21 Girton Road, Parktown, Johannesburg, 2193
- PO Box 545 Auckland Park, Johannesburg, 2006



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e-Skills CoLab profile

All about the Limpopo e-Skills CoLab: Connected Health



Dr Farivar Rahimi, Director of the Limpopo e-Skills CoLab: Connected Health

South Africa's National Development outlines an e-literate society by 2030. NEMISA/INeSI is part of making this vision into a reality. It plays a role in training e-skills (digital skills) and this includes e-skills as part of the broadband rollout.

e-Skills are needed to ensure that people have the know-how to use the technology and thus create demand for broadband. (This is outlined in the Digital Opportunity pillar in SA Connect, the broadband policy, which looks at the ways broadband can be used for social and economic development.)



What is broadband?

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

Digital Opportunity includes developing user skills (e-skills) in a number of areas, including within the health sector. The Limpopo e-Skills CoLab focuses on e-skills in this sector.

e-Skilling SA within a partnership framework

NEMISA/INeSI works on a national, provincial and local level. Its CoLabs focus on e-skilling on a provincial level. The organisation works with stakeholders to align e-skills initiatives to government

policy, reduce duplication and increase national impact. NEMISA/INeSI's aim is to e-skill South Africa but within a larger framework of collaboration and partnership.

Each CoLab has its own focus area. The provincial e-skilling interventions and the CoLab focus area are being developed so that they can be scaled nationally. All CoLab activities focus on:

- e-Skills training, such as e-literacy training
- Curriculum and course development
- Knowledge for Innovation – this means activities such as commissioning and presenting research reports, hosting colloquiums, thought leadership engagement and product development (apps, videos etc.)

To find out more, we asked Dr Farivar Rahimi, Director of the Limpopo e-Skills CoLab: Connected Health, about the CoLab and its work. The CoLab is based at the University of Limpopo.

Q Explain the CoLab focus?

The CoLab focuses on connected health (e-health). e-Health means using ICT to assist with healthcare. It usually encompasses three main areas:

- Delivering health information, for health professionals and health consumers, through ICT.
- Using the power of ICT and e-commerce to improve

 to next page



Delegates from one of the five courses run from April to June 2015. The e-literacy training was for Limpopo health workers.

Article continued: All about the Limpopo e-Skills CoLab: Connected Health

public health services, such as through the training of health workers.

- The use of e-commerce and e-business practices in health systems management

As CoLab Director, I am responsible for provincial e-skills activities, in particular, the Connected Health project.

Q What are the CoLab plans for this financial year, in particular the patient management system?

Our initial environmental scan showed a tremendous receptivity in the rural clinics towards the use of technology in their daily practices. This led to focusing on developing a pilot Patient Management System (PMS), its installation and implementation in four rural clinics in Limpopo. The project has the highest priority for the coming year.

The PMS is a much-needed tool. It is likely to have a positive impact on the lives of the communities served by these clinics and on the professional lives of the healthcare workers and administrators employed in these clinics. It is hoped that once the concept is working and proved effective, it will be emulated throughout the province and the rest of South Africa.

Q What other plans are there?

- The CoLab is involved in the e-skilling of healthcare workers in the province and this will continue to be an important focus this year.
- In addition, the extension of Smart Centres (in the form of school facilities) will be an important focus of the Limpopo CoLab's activities. This involves the support of teachers and learners in these schools and working out ways in which these facilities can safely and meaningfully be made available to the communities surrounding the schools.
- The CoLab has an interesting project in partnership with Intel. Intel is attempting to connect 5 million African women to the Internet – women aged between 15 and 25 being the target audience. In order to achieve this, Intel has partnered with organisations such as ours to

Limpopo e-Skills CoLab message

The only way to make South Africa both competitive and prosperous is the use of technology to awaken the dormant talents of its people. It requires a holistic and collaborative approach to align disjointed efforts in this arena and to move towards this massive opportunity. The question is whether we will rise to the occasion.

offer Intel Easy Steps – a digital literacy programme with elements of entrepreneurship, marketing, branding and business management. The CoLab has been involved in the training of more than 400 young women during the University of Limpopo vacations and intends continuing with this worthwhile initiative.

Q What is your background?

I have been involved in ICT for many decades both in South Africa and abroad (Canada and UK). I was also the Executive Director of ICT at the University of the North/ Limpopo. I have a Computer Science Degree, an MBA and a PhD in e-Learning.

Since 2010, my role at the University of Limpopo as Director of e-Learning has focused on promoting the meaningful use of ICTs in teaching and learning – something I am passionate about. 😊

Participants at the Intel Easy Steps course conducted in June to July 2015.



Participants at the Intel Easy Steps course conducted in November and December 2015.