



The
eLearning
Africa
Report
2013

The eLearning Africa Report 2013

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Acronyms

ACP-EU	African, Caribbean and Pacific Group of States and the European Union	ICWE	International Conferences Workshops and Exhibitions
ADB	African Development Bank	IEBC	Independent Elections and Boundaries Commission
ADSL	Asymmetric Digital Subscriber Line	ISP	Internet Service Provider
API	Application Programming Interface	ITU	International Telecommunication Union
BBM	BlackBerry Messenger	MDG	Millennium Development Goal
CAADP	Comprehensive Africa Agriculture Development Programme	MIT	Massachusetts Institute of Technology
CASAS	Centre for Advanced Studies of African Society	MOOC	Massive Open Online Course
CC	Creative Commons	NGO	Non-Governmental Organisation
CMS	Content Management System	OER	Open Educational Resource
COL	Commonwealth of Learning	OLPC	One Laptop Per Child
CSIR	Council for Scientific and Industrial Research	SIDA	Swedish International Development Cooperation Agency
CTA	The Technical Centre for Agricultural and Rural Cooperation	SME	Small and Medium-sized Enterprise
DBSA	Development Bank of Southern Africa	TENET	Tertiary Education and Research Network
DRC	Democratic Republic of the Congo	TVET	Technical and Vocational Education and Training
ECCE	Early Childhood Care and Education	UIS	UNESCO Institute for Statistics
EFA	Education for All	UNDP	United Nations Development Programme
FAO	Food and Agriculture Organisation	UNECA	United Nations Economic Commission for Africa
FOSS	Free and Open Source Software	UNESCO	United Nations Educational, Scientific and Cultural Organisation
FOSSFA	Free Software and Open Source Foundation for Africa	USAID	United States Agency for International Development
GIZ	German International Cooperation	VoIP	Voice over Internet Protocol
GSM	Global System for Mobile Communications	VSAT	Very Small Aperture Terminal
HRD	Human Resource Development	WAPA	Wireless Access Providers' Association
ICASA	Independent Communications Authority of South Africa	WHO	World Health Organisation
ICT	Information Communication Technologies	WTS	Well Told Story
ICT4D	Information Communication Technologies for Development		

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When citing from one of the opinion pieces within the Report, please reference the surname of the individual author, followed by the report reference. For example:

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The word cloud inside the front cover depicts the combined answers to the question asked in *The eLearning Africa Survey 2013*: 'What do you think are the three priority issues related to the use of learning technologies in Africa that the global development community should commit to after 2015?' The word cloud on the back cover depicts the combined answers to the question asked in *The eLearning Africa Survey 2013*: 'What are the reasons behind the top three drivers of change in the use of learning technologies in the African country where you work?'

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Foreword

On behalf of the Government of Namibia, it gives me great pleasure to announce the launch of *The eLearning Africa Report 2013*. As proud hosts of this year's eLearning Africa conference, we believe that the information in this report will enrich the conversations, debates and arguments at this year's conference.

The eLearning Africa Report 2013 covers a wide range of critical issues related to our collective interest in improving our education systems in Africa with the support of digital technologies.

I am delighted by the honesty with which many of you have articulated your views in *The eLearning Africa Survey 2013* on which the report is based. I was particularly encouraged by the failures in eLearning that were so openly shared and the attention given this year to local digital content and the integration of indigenous African languages.

Furthermore, the report highlights the views of 413 eLearning practitioners on priorities for the post-2015 development agenda. Not only can we now take stock of our collective endeavour to reach the Education for All objectives and the Millennium Development Goals, but it is also our moment in Namibia to consider our experience with digital technologies in helping us to reach these noble goals. Africa in general, and Namibia in particular, now boast more than 15 years' experience with policy development, design, implementation and evaluation of ICT in education and training at national and institutional levels. The insights offered by *The eLearning Africa Report 2013* provide us with a platform to learn from these practices, both 'good' and 'bad'.

At the same time, change is constant and rapid and many of us are challenged to make choices about an ever increasing array of technologies, platforms and solutions, all claiming to be good for education. Similarly, so much is changing in the learning and teaching terrain including the emergence of new forms of learning, new literacies and new pedagogies. New 'players' are entering an increasingly commercialised education and training market. These conditions highlight the importance of sharing our knowledge, experiences and ideas.

The eLearning Africa Report 2013 and the *eLearning Africa* conference offer a space for us to learn, share and grow with our peers. It is up to us to harness this opportunity to develop our learning network. Only in this way can we overcome the mammoth task of resolving our most pressing educational problems in Africa.

Joel Kaapanda
Minister of Information and Communication Technologies,
Government of the Republic of Namibia

An Editorial Note

The recent death of the 'father of African literature', Nigerian-born Chinua Achebe, and the legacy that he leaves behind, is symbolic of the overarching theme of the *eLearning Africa 2013* conference: *Tradition, Change and Innovation*. Professor Achebe championed the re-imagination of Africa. Through his writing he celebrated, explained and defended local culture and challenged the interpretation of Africa and Africans in dominant Western literature. His eloquent portrayal of the Continent also reveals the chameleon-like nature of our transformation process, our ambiguous histories, traditions and stories of change. Today, the rapid diffusion of digital technologies in African society further catalyses changing perceptions, not only of ourselves as Africans but also of the views from the wider world about Africa.

There are varying, conflicting and intersecting interpretations of Africa: a 'second scramble for Africa', the rise of a new Africa, and decades-old social and economic challenges that tell tales of continuing pain and suffering. Examples of paradigm shifts in education and innovation co-exist with traditional ways of learning. The media and popular literature is awash with statistics on the exponential rise of Internet-enabled mobility in Africa, said to be ushering in Africa's 'leapfrog' into the 21st century and 'revolutions' in the field of open education, higher education and schooling have been declared. Buzz-words such as MOOCs, cloud computing and crowd-sourcing are currently in vogue.

Today's dominant story presents the way Africa's spectacular economic growth over the past decade is opening up 'frontier' investment markets once believed to be too risqué. This dovetails with another important issue: the development agenda in light of the target date of 2015 for the achieve-

ment of the Millennium Development Goals (MDGs) and Education For All (EFA) objectives. Evaluations and monitoring reports of the past 13 years' experience with the MDGs and EFA suggest that some progress has been made in the numbers of children in primary, secondary and tertiary education, including girls and women in Africa, and that gender parity levels have improved. Many of these reports demonstrate that deficiencies in education resources, textbooks, teachers, education financing and skilled personnel in ministries of education and training remain an overriding preoccupation. They also suggest that there needs to be a stronger focus on improvements in the quality of our education and skills development systems. The dominant struggle goes beyond numbers and focuses on building an educated, skilled and entrepreneurial continent of people who lead fulfilling lives.

Numerous projects, programmes and initiatives are under way across Africa, related to experiments with mobile phones, tablets and social media in learning and teaching. National policies on ICT in Education are being revisited in a few African countries and implementation plans are being evaluated and renewed. New partnerships are being forged, new financing models are being designed, innovation hubs and technology-related start-up companies are sprouting up.

This is the vibrant backdrop against which opinions on the influence of digital technologies on learning, teaching, education delivery and skills development in Africa, are shaped. *The eLearning Africa Report 2013* takes the pulse of these opinions. It seeks to make sense of reality amidst the hype by asking African teachers, lecturers, trainers, entrepreneurs, executives, government officials, investors and policy makers about their views and experiences with the way digital technologies are influ-

encing spaces of learning. This year, 413 respondents to *The eLearning Africa Survey*, 80% of whom are African by birth, express their beliefs and aspirations based on experiences with digital technologies in their classrooms, workplaces and communities. Opinion pieces by experts, interviews with practitioners, photographs from *The eLearning Africa Photo Competition* and a comic strip add nuance to the colourful contributions of survey respondents.

We hope that this illustrative review of African opinion will provide us with some insight into how tradition, change and innovation in education are understood. Our report tries to illuminate the current thinking of an important segment of a growing eLearning network. We hope it serves to promote informed conversations and better decision-making in ways that are beneficial to all.

Shafika Isaacs
Editor



Photo: Mignon Hardie, Zambia,
"Teens get reading on FunDza"

Executive Summary

The average respondent to *The eLearning Africa Survey 2013* is based in Nigeria; works in higher education; has a university degree; makes daily use of a laptop and social networking for learning and uses technologies mainly for classroom-based learning. They believe that the use of digital technologies leads to improved learning outcomes; that mobile technologies are a dominant change driver; that national government is the most important change agent, and that education and ICT are the top priorities for the post-2015 development agenda.

These are some of the key findings of a survey completed by 413 practitioners involved in eLearning in Africa, 80% of whom are African by birth. *The eLearning Africa Report 2013* is based on this survey and provides a snapshot of the opinions and views on a wide range of issues related to the use of digital technologies for learning and teaching in various African environments. This report is the second of its kind, building on the experience of *The eLearning Africa Report 2012*.

The report shows how the urgent challenges to provide equitable and quality access to education for all combine with the new learning spaces that digital technologies open up. In this way, the report aligns with the overall theme of the *eLearning Africa 2013* conference which focuses on *Tradition Change and Innovation*.

Laptops, Mobile Phones and Social Networking More Popular

Key highlights of the report focus on the kind of technologies that African practitioners use for learning, how they are used, why they are used and their impact on learning outcomes.

For the majority of the survey respondents, laptops and mobile phones are the most popular learning devices compared to computer tablets, zero client labs and smart boards. Yet, even though 83% of respondents make daily use of laptops and 71% make daily use of mobile phones to support learning, 67% still use stand-alone PCs, 34% still use TVs and 31% use radios for learning every day. This goes to show that newer, more mobile technologies have not yet eclipsed older generation technologies and their use for learning and teaching.

Tablets, zero clients and smart boards may still be emerging. While 20% of respondents are using tablets for learning, 30% say they never use tablets, 42% say they never use zero client labs and 34% never use smart boards. This finding may reflect the level of exposure by respondents to these technologies at the time the survey was conducted.

With the rapid emergence of new media, the *eLearning Africa* survey team was also keen to know whether social media in particular are used to support learning. Here, the use of social networking sites such as Facebook, Google Plus and LinkedIn featured prominently with 60% of respondents using them. This compares with 29% who use Voice over Internet Protocol (VOIP) such as Skype and 22% who use blogs, mobile apps and mobile chat.

Accessing Online Resources and Learning Opportunities are Key Concerns

Accessing online resources, classroom-based learning and personal learning are top technology uses for survey respondents. 65% of respondents use technologies to access online resources, 56% use them for classroom-based

learning and 52% use them for their own personal learning. When asked why they use digital technologies for learning, expanding access to learning opportunities (33%) featured more prominently than developing employability skills (8%). Unsurprisingly, given that the vast majority of respondents are actively involved in using digital technologies for learning and teaching, 71% say that technologies have a positive effect on learning outcomes in their experience and only 1% say that they have a negative effect.

African eLearning Practitioners Embrace Kushindwa¹

When asked about their experiences of failure, 49% say they have experienced failure in eLearning with many of these failures associated with technology and infrastructure breakdowns. With this insight, *eLearning Africa* hopes to open up valuable conversations on the topic of failure, in an attempt to promote a culture of learning and reflection. A dedicated session entitled *the eLearning Africa Kushindwa Bazaar* serves to encourage conference participants to share their lessons of failure in order to improve practice.

Mobile is the Top Change Driver and Government is the Top Change Agent

The report also highlights the views of respondents on the top drivers of change in the use of digital technologies for learning in Africa. Here mobile technologies (27%) and social media

¹Kushindwa is Kiswahili for 'failure'

(16%) are the top change drivers and as in 2012, national government is the most important change agent.

Local Content, Local Languages

This year, the report pays special attention to the use and creation of local digital content, including content produced in indigenous African languages. It reveals that 40% of respondents are involved in creating local digital content but only 16% are involved in creating content in indigenous African languages.

Education is the Top Post-2015 Development Priority

With less than 1000 days to go to achieve the Millennium Development Goals and Education For All goals by 2015, respondents were asked to name

the development priorities for a post-2015 development agenda. Unsurprisingly, with the vast majority of respondents working in the education and skills development sector, 27% of respondents highlighted education as the top post-2015 development priority, followed by ICT (22%).

When asked to name their top technology-specific priorities, ICT use in education (16%), training (15%) and infrastructure (16%) rank as the top three priorities. Within the category of infrastructure, bandwidth and electricity are highlighted as the key priorities.

The report highlights the views of those at the forefront of eLearning in Africa. Arguably, the majority are 'front-runners' and 'digital pioneers'. Collectively, these views reflect a strong optimism about the newness and positive change that digital technologies can catalyse in Africa's education and skills development systems. Yet they also highlight important gaps in our knowledge. Key amongst these are the views and

insights of the traditionalist education practitioners and those without access to new learning technologies - those who are primarily focused, due to their personal views or circumstances, on delivering the basics of education: chalk, textbooks, qualified teachers and functional classrooms.

These conversations about innovation still seem to be taking place in parallel with resolving our traditional educational problems. There is an urgent need to establish points of connection between these conversations. Each year the *eLearning Africa* conference hosts *The eLearning Africa Debate*. This year, the debate focuses on whether sustainability matters more to education than innovation. This is a timely discussion and will hopefully point to key areas for further exploration in forthcoming *eLearning Africa* reports.

1. Introduction

The eLearning Africa Report 2013 is a barometer of African opinion on changes in our learning landscape under the pervasive influence of digital technologies. The main purpose of the report is to reflect the stories, views and experiences of African practitioners and their contribution to the broader African eLearning narrative.

This year we have the advantage of building on the lessons and experience

of *The eLearning Africa Report 2012* which was cited on numerous blogs, magazines, journals and news articles from all over the world. We were also pleased to learn that the 2012 report served as an important source of information for conversations about ICT in Education policy in a few African countries.

In 2013, we focus on *Tradition, Change and Innovation*, which is the theme of

the *eLearning Africa* conference, this year held in Namibia. Consistent with this theme, we illustrate the thoughts and ideas of 413 survey respondents on a wide range of issues related to our traditional and changing learning landscape. Key among these is an appraisal of respondent beliefs and attitudes about the priorities for a post-2015 development agenda.

2. Survey Respondents and Their Use of Digital Technologies

Who are the eLearning Africa practitioners, policy makers, investors and role players? What digital technologies do they use to support learning? Why and how do they use

digital technologies? What are the educational outcomes resulting from their use? These are the important questions that the survey and report try to address.

2.1 Who are the eLearning Africa Survey 2013 Respondents?

The average respondent to *The eLearning Africa Survey 2013* is male, has at least one tertiary level degree, works in the higher education sector and works for a government or government-supported organisation in Africa. Within this overall picture there is a

diverse range of respondents, working in 42 African countries across different sectors and at all levels of education and skills development. As may be expected, individuals who have experience with learning technologies are the most likely to respond. 80% of the responses to the survey came from people who stated an African country as their country of birth.

Outside Africa, the highest number of responses came from people with German or British nationality (each 3%).

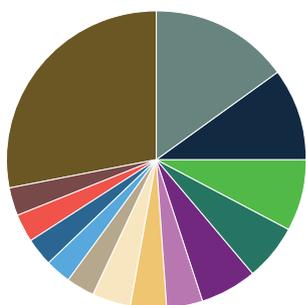
29% of the respondents were female, 70% were male and 1% did not specify their gender. This contrasts slightly with the gender distribution of the total number to whom the survey was sent, which was 29% female, 46% male and 25% unspecified.

The *eLearning Africa* network seems to have been stable and relatively unchanged over the past year, with the distribution of respondents' education sector and type of organisation remaining very similar between 2012 and 2013.

In 2013, the majority of the respondents (52%) work for a government or government-supported organisation, 19% work for an NGO, followed by 18% who work for privately-owned organisations. 6% responded that they work independently of any organisation, 3% work for international government organisations and 1% for donor organisations.

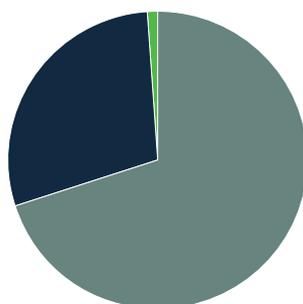
Survey respondents are most likely to work in higher education (42%), followed by those who work across all education levels (21%). Another 15% work in schools (primary, middle or secondary), 14% work in TVET, 4% in informal education and 1% in Early Childhood Care and Education (ECCE).

What countries do respondents work in?



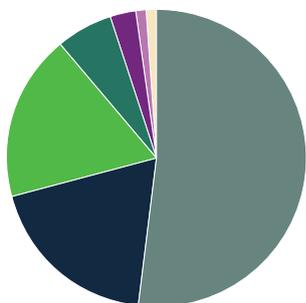
● Nigeria.....	15%
● South Africa	10%
● Kenya.....	8%
● Tanzania	6%
● Zambia.....	6%
● Uganda.....	4%
● Namibia.....	4%
● Cameroon.....	4%
● Ethiopia.....	3%
● Benin	3%
● Ghana.....	3%
● Cape Verde.....	3%
● Zimbabwe	3%
● Other	28%

What proportions of respondents are female or male?



● Male.....	70%
● Female.....	29%
● Unspecified	1%

What type of organisation do respondents work in?



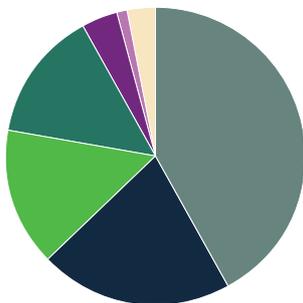
- A government or government-supported organisation.....52%
- An NGO19%
- A privately-owned organisation.....18%
- Independently of any organisation.....6%
- An international government organisation.....3%
- A donor organisation1%
- N/A..... 1%

The final 3% selected 'other' or did not answer the question. Once again, these figures link closely with the survey respondents from 2012.

The educational qualifications of survey respondents are significantly above the average achieved in sub-Saharan Africa.

- 99% of respondents indicated that they had completed their secondary education, whereas across sub-

What education sector do respondents work in?



- Higher education.....42%
- Across all education levels21%
- Schools (primary, middle or secondary).....15%
- TVET.....14%
- Informal education.....4%
- ECCE.....1%
- Other3%

Saharan Africa it is estimated that less than 20% of the total population complete secondary education;

- 87% of respondents indicated that they had completed at least one degree at tertiary level, whereas across sub-Saharan Africa it is estimated that less than 5% of the total population complete tertiary education; and
- 18% of respondents indicated that

they had completed a PhD, whereas across sub-Saharan Africa it is estimated that less than 0.1% of the total population complete doctoral education (World Bank, 2012; UIS, 2011).

The instrumental role of positive learning experiences and role models in promoting educational achievement is illustrated by the experience of an interviewee from Namibia who said:

"A truly gifted, knowledgeable and inspiring biology teacher taught me in my last two years of high school. I chose to pursue a career in the natural sciences as a result of this teacher's enormous enthusiasm to (freely!) share knowledge with her learners. She gave so much more than was required to pass a final matriculation exam and instilled an incredible sense of urgency to learn far more than what was simply conventional."



Photo: John Kessy, Tanzania, "Interactive IT in universal primary education"

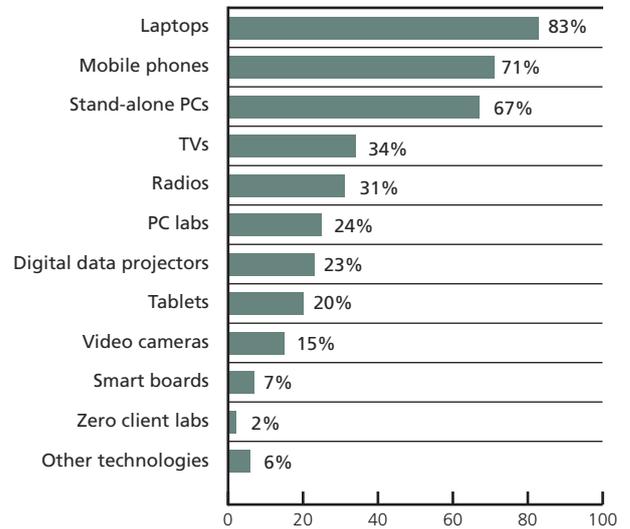
2.2 Digital Learning Technologies: What, How and Why?

Laptops and Social Networking are More Popular

This year, laptops rank as the most popular device to support learning compared to mobile phones, tablets and stand-alone PCs. Respondents were asked what technologies they make use of every day to support learning in their organisational contexts. 83% of respondents said they use laptops to support learning, followed by mobile phones (71%) and stand-alone PCs (67%). At the other end of the spectrum, the technologies least likely to be used every day to support learning are zero client labs at 2% (a server-based computing model where the user's 'computer' has no processing and storage power) and smart boards (7%). We also wanted to establish what technologies are most likely never to be used by respondents to support learning in their organisational contexts: 42% never use zero client labs, 34% never use smart boards and 30% never use tablets.

Building on this, respondents were asked specifically what forms of social media they make use of every day to support learning in their organisational contexts. Social networking sites (such as Facebook, Google Plus and LinkedIn) were the most popular, with 60% of respondents making use of them to support learning on a daily basis. Some 29% make use of VoIP every day and an equal 22% make use of blogs, mobile chat (including WhatsApp, BBM and Mxit) and mobile apps. We also wanted to establish what forms of social media respondents never make use of to support learning in their organisational contexts. The figures indicate that occasional use of social media is very widespread within the sector. Only 8% never make use of social networking sites, 16% never use blogs, 21% never use wikis and 24% never make use of mobile chat.

What technologies do you use every day to support learning?



What forms of social media are used to support learning?

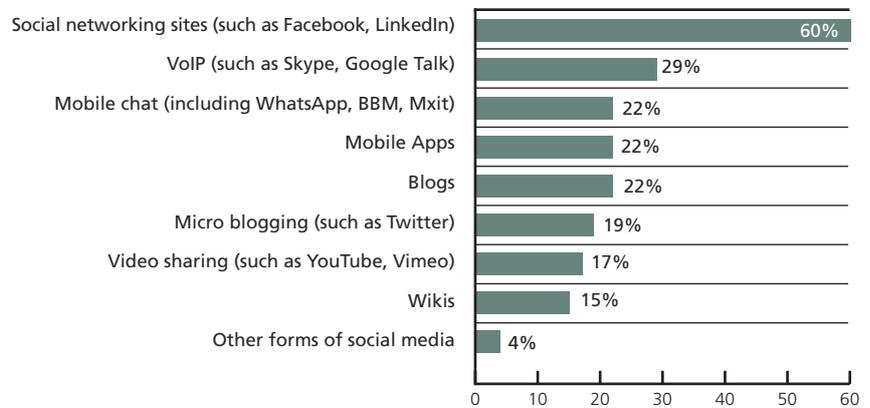


Photo: Willy Ngaka, Uganda, "Computers excite and motivate intergenerational literacy learners in a rural school"

Seeds 2.0 to Modernise and Boost the Agricultural Sector

Ken Lohento

“Really? But what has the agricultural sector got to do with Web 2.0?” That was the sarcastic question I was asked one day when I was describing the Web 2.0 training that I provide to CTA (the Technical Centre for Agricultural and Rural Cooperation). It was an understandable question; on the one hand the Web 2.0 concept seemed to be a current reality reserved only for geeks, and on the other hand, combining new ICTs and the agricultural sector in Africa appeared to many to be a utopian dream, or not far off from one. However, since 2009 CTA, created as part of ACP-EU (African, Caribbean and Pacific Group of States and the European Union), has provided highly sought after training on the subject of Web 2.0 for Development, aimed mainly at players operating in the agricultural and rural sectors.

Popularised by Tim O’Reilly in 2004, the Web 2.0 concept denotes a set of IT applications (sometimes called “social media”) which enable ordinary users to produce and share multimedia information on the web, very often free of charge. It can be seen in services such as Facebook, Twitter, LinkedIn, Google Maps and Dropbox. By 2012, in conjunction with a number of different institutions, CTA had trained 1,684 people from 32 ACP countries in the use of these tools as part of development activities. In particular, these people were agricultural association representatives, ministers, extension agencies, researchers, teachers, students, trainers and, occasionally, farmers. A number of other activities are also carried out to support training, as illustrated by the content on www.web2fordev.net.

Strengthening networks and managing information and institutional communication

Training in Web 2.0 for Development enables agricultural players to more effectively manage their access to information (for example, by understanding RSS feeds and using a site such as www.agrifed.org). It easily strengthens external communication (with blogs, etc.), at the same time as reducing costs and making it easier to co-author collaborative documents (with platforms like Google Drive, Framapad.org or Wikis). Agricultural documentation centres can then interact with their users more easily, thanks to Facebook pages, which are distinct from individual Facebook accounts. For example, the Senegalese and Kenyan Ministries of Agriculture, convinced of the relevance of these tools, have included this training in their agents’ educational programme. In the same way, Ning platforms, such as those established by AgriProFocus in various African countries, facilitate online collaboration between various agricultural networks.

Strengthening agricultural marketing, promoting agriculture and its image

The development of blogs has enabled many young people to become involved in agricultural citizen journalism while promoting the sector. Although agriculture accounts for 30% of

gross domestic product (GDP) in most African countries, this sector has been forsaken by these same countries, due to a certain negative image, and states do not pay enough attention to it. Certain platforms identified by the agriculture blog competition, the YoBloCo Awards (ardysis.cta.int/yobloco), such as the Nawsheen’s World blog (nawsheenh.blogspot.nl) and Anne Matho’s blog (annematho.wordpress.com), fall within this category. Others such as Technology4Agri (technology4agri.wordpress.com) and Agro-Benin (www.agrobenin.com) promote national agricultural or technological opportunities, including ICT, which could modernise agriculture. Sometimes, agricultural product marketing is also carried out via Facebook or blogs, in line with the increased commercialisation of this platform. A new service offered by accessagriculture.org allows agricultural videos to be shared.

Advocating access to ICT at an affordable price for the agricultural sector

This penetration by Web 2.0 into the agricultural sector forms part of the increasing use of ICT, and mobile telephony in particular, within the agricultural sector. With more than 700 million subscribers, this medium makes it easier to access the Internet every day, to share information about the agricultural market, even in a rural environment, and to encourage the uses of Web 2.0.

However, it is necessary to increase the benefit of Web 2.0 within agricultural institutions and less at an individual level. The development of the Web 2.0 communications culture within organisations remains embryonic. The cost of internet access remains prohibitive for many of them. The interactivity which their platforms can enjoy is also very limited, because of internal considerations, but also because the public overlooks them or does not know about them. It is also appropriate to encourage the implementation of social media communication strategies since absent or uncontrolled communications on the many networks can today be dangerous for an organisation. Of course, poor ICT infrastructure and the absence of electrification in rural environments are serious handicaps. Consequently, it is essential for agricultural players to get involved in demands for access to ICT at an affordable price. To do so, the most effective channel should be the Comprehensive Africa Agriculture Development Programme (CAADP), the flagship in the development of the sector, set up by African states.

Ken Lohento is ICT4D Programme Coordinator at the Technical Center for Agricultural and Rural Cooperation ACP-EU (CTA) in the Netherlands, where he coordinates projects related to ICT and agricultural value chains, eAgriculture strategies, youth and ICTs, Web2fordev training. Ken is a National of Benin Republic and has been working with national and international organisations for several years on ICT for development activities and policies.

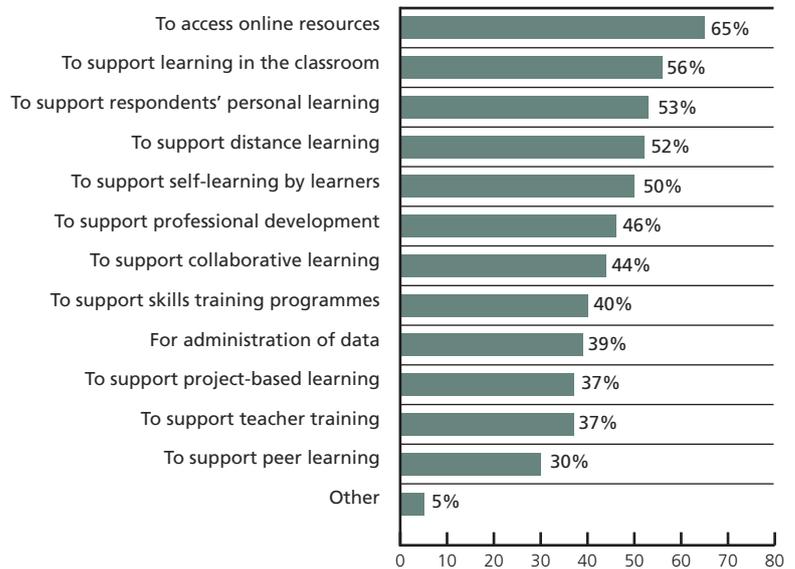
Online Resources and Classroom Learning are Top Educational Uses

The most frequently cited reasons for respondents using the various technologies and forms of social media are to access online resources (65%), to support learning in the classroom (56%) and to support their own personal learning (53%). As the graph on the right demonstrates, the respondents have a broad range of educational uses for technologies.

Access to Learning Opportunities Matter More

Having established what technologies are being used, and the way in which they are being used, the survey sought to find out the motivation behind using digital technologies to support learning. Respondents were asked what

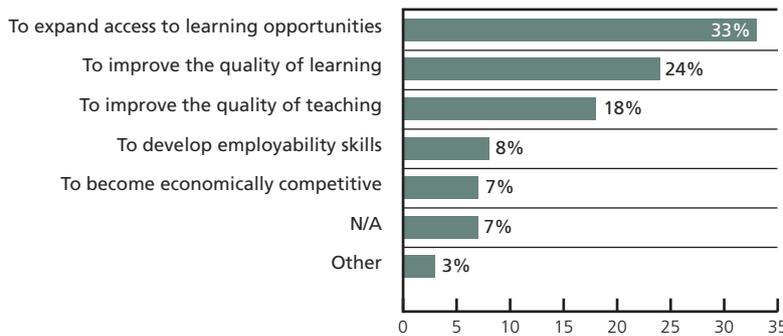
How are digital technologies used to support learning?



respondents relative to the improvement of quality learning and teaching. However, when combined, the issues of improving the quality of learning and improving the quality of teaching do rank higher in the priorities of survey respondents than issues of access. Per-

haps surprisingly, developing employability skills is only considered the main reason for using digital technologies in learning by 7% of respondents.

Why do respondents use learning technologies?



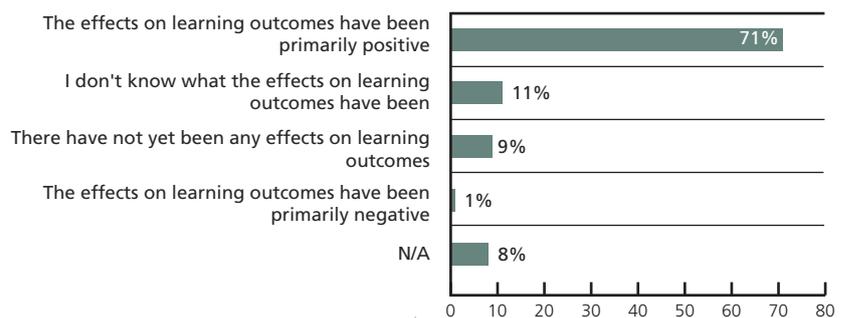
their biggest motivation for using learning technologies is. The most popular responses were to expand access to learning opportunities (32%), followed by the desire to improve the quality of learning (23%) and improve the quality of teaching (18%).

This suggests that the need to expand access to learning opportunities remains a preoccupation among survey

Technologies Influence Positive Learning Outcomes

Within the survey, respondents were asked to express what they had experienced to be the effect of digital technologies on learning outcomes within their respective organisational contexts. The majority of responses were positive, with 71% saying the effects have been positive and only 1% saying the effects have been negative.

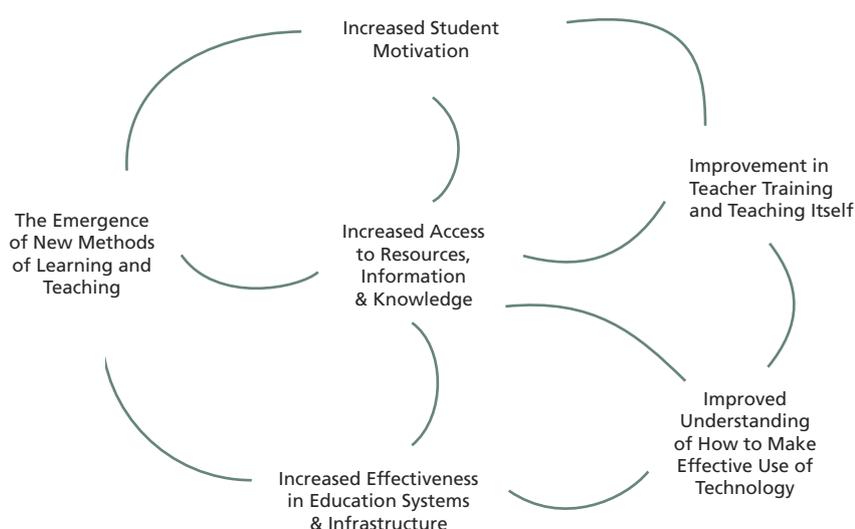
What effect does technology have on learning outcomes?



Those respondents who indicated that digital technologies have had a positive effect on learning outcomes were asked to outline the ways in which these positive attributes are manifested. The objective for asking this

this minority, the challenges are significant enough that technology has an overall negative effect on learning outcomes. For the majority, the effect remains positive despite the presence of the challenges!

Why Digital Technology Integration Enables Positive Learning Outcomes



was to establish the detail behind the overall perspective and to understand what the *eLearning Africa* network perceives to be the most significant ways in which technology is affecting learning outcomes.

Before focusing on the majority who responded that the effects on learning outcomes have been primarily positive (71%), it is worth considering the small minority who said that technology has had a negative effect on learning outcomes (1%). The reasons that these respondents gave were that computers serve to distract children from formal learning in the classroom, students have stolen equipment, the equipment is too expensive to maintain and train teachers in its usage and there is a lack of understanding of how to use the available technologies for learning purposes. Together these encapsulate the widely-acknowledged challenges with the optimal integration of digital technologies in learning and teaching. For

A total of 268 respondents chose to explain the ways in which technology is leading to an improvement in learning outcomes. There was a high degree of overlap between the individual responses but they can be categorised into six dominant and interrelated themes:

- Increased access to resources, information and knowledge
- The emergence of new methods of learning and teaching
- Increased effectiveness in the education system and infrastructure
- Increased student motivation
- Improvement in teacher training and teaching itself
- Improved understanding of how to make effective use of technology

90% of all responses were grouped into these six categories. The final 10% (28 responses) were generic descriptions that could not be easily categorised. These categorised responses provide valuable insight into the dominant perspectives of the sector and the most common beliefs held regarding the way in which ICT can affect learning outcomes and facilitate educational change.

Increased access to resources, information and knowledge was the most popular response, with 20% of the responses grouped into this category. Respondents emphasised the ways in which digital technologies have opened up possibilities to access the materials required for effective learning, with the most regularly repeated single response being '*access to information and knowledge*'. This issue was emphasised by many of those working in higher education. A male respondent working in the higher education sector in Zimbabwe commented that the use of technology means '*students and lecturers are now able to access the Internet for research*'. He went on to note that '*the quality of students' work has been enhanced as they have access to more resources*'. Similarly, a female respondent working in the higher education sector in Nigeria explained that '*access to information has greatly improved the quality of graduates being produced from our University*'. The positive impact of increased access was also expressed by respondents working in the private sector. One respondent working in TVET in Nigeria in a privately-owned organisation articulated how they now have '*access to publications which would otherwise not be accessible or even known to us*'.

The emergence of new methods of learning and teaching represented the second largest category of response (15%). Within this the dominant themes included the way in which technology can facilitate new pedagogies and promote collaboration, enable stu-

dents to enhance their research skills, break the barriers of geography – promoting distance and flexible learning – and facilitate online learning communities. These sentiments were expressed by a respondent working in a government-supported organisation in Mauritius, who stated that ‘people who learn about ICT are able to undertake further research on any subject’ and by an employee of an international donor organisation, noting that ‘working and exchanging with others has been improved ... learning at any time and everywhere is possible.’

Increased effectiveness in the education system and infrastructure

was identified by 13% of respondents, emphasising the way things can now happen faster and at a lower cost, with education management systems and service delivery mechanisms becoming more efficient, and with the ability to scale up more easily than before and

connect with a greater number of learners. This was expressed by a female respondent working for an NGO focused on higher education in Tanzania, who suggested that technology is leading to an improvement in outcomes because ‘it has reduced workload for faculties, it has enhanced communication between faculties, students and administrators ... it has also enabled monitoring and evaluation of the school activities’. This was corroborated by an employee of a donor organisation working in higher education in Namibia, who explained that, due to technology, their work is now more ‘cost-effective and we can reach a geographically wider audience’. Finally, a male respondent working independently on higher education in the Ivory Coast expressed clearly: ‘more learners are on the platform, materials are being updated, self-learning is going on, trainers who have been trained are now rolling out national

trainings and earning income: the organisation is extending its reach with little investment’.

Increased student motivation was the fourth common theme with 10% of respondents suggesting that this was the reason that technology is leading to improved outcomes. Key issues highlighted were the way in which the commitment to learning increases, alongside increased student enjoyment and participation. This theme was particularly common among those working at the school level (primary, middle and secondary) in government supported organisations – as demonstrated in the following three responses. A respondent working in Togo explained that they had found ‘using the ICTs with young children from primary school is a great source of motivation in their learning process’. Similarly, in Kenya it was noted that the integration of digital technologies is having a positive impact on learning outcomes because it makes it possible to visualise difficult, abstract concepts through the use of animations.’ A respondent from Uganda offered a similar explanation, pointing out that, following the integration of digital technologies, ‘teaching of complex concepts became easy, the attitude of learners towards my lessons improved greatly, pass rates of my students increased, students increased their participation in project work and group and collaborative learning was enhanced’.

The improvement in teacher training and the practice of teaching

was the emphasis given by 6% of the respondents. The answers focused on how technology has enabled better quality and more diverse training to take place, and the way in which this has had led, in turn, to an improvement in teaching itself. These comments were exemplified through a female civil servant working in Nigeria across all levels of education who explained that technology ‘has made teaching and learning more interesting and improved



Photo: Afanou Sèti, Togo, “eLearning has made her the queen of the kitchen”

the performance of teachers and students'. Similarly, a female respondent from Togo, working in the school sector (primary, middle or secondary) shared her observation that *'teachers have access, from their workplace, to enhancement opportunities for their lessons and the professional development'*. Finally, another female respondent from Tanzania, working in TVET for a government-supported organisation, remarked that the introduction of technology *'has improved the quality of teaching and time management'*. In turn, this has meant that *'resources are easily searched from the Internet'* and this becomes a *'very effective way to share learning material'*.

Improved understanding of how to make effective use of technology

was the smallest of the six categories, emphasised by 3% of respondents. These responses attributed the improvement in learning outcomes simply to the fact that there is now a greater generic understanding of how technology works. This is illustrated by a female respondent from South Africa, working in the school sector, who observed that *'the learners are gradually becoming computer literate by using computers at school'* and, similarly, by a female respondent from Nigeria, working in higher education, who explained that the learning outcomes were improving because *'more people are becoming techno-savvy and are developing their technology skills'*.

Mobile Has Not Eclipsed Non-Mobile

It is worth noting that 31% of respondents still use radio every day to support learning. This demonstrates the ongoing relevance of radio for learning even amidst the rapid increase in the variety of technology devices that support learning. The high use of stand-alone PCs and PC labs perhaps also points to a longer period of use in the

African education system for older technologies. The more popular use of laptops, PCs and mobile phones suggest that these have been 'mainstreamed' by respondents far more than tablets. The low reported usage of the latter in learning may also be due to this technology device entering the learning arena at a similar time to the survey being conducted. With older technologies taking longer to become obsolete, the survey findings also demonstrate the proliferation of options of technologies to support learning.

The popularity of social networking sites reflects the new avenues that are opening up for communication, knowledge-sharing, collaborative learning and growing learning communities and networks in Africa. Anecdotes regarding the use of Facebook for learning in Africa suggest that they particularly support teachers in their communication with learners (Verster 2010, Bosch, 2009). However the integration of social networking as part of a wider social media milieu, in learning and teaching, has also opened up the prospects for cyber-bullying and privacy infringements which are only beginning to surface in the *eLearning Africa* conversation.

The top educational use for technologies is to access online resources and the top motivation for their use is to provide access to learning opportunities. This demonstrates clearly that access to learning resources remains a preoccupation with eLearning practitioners in Africa. Furthermore, the high use of digital technologies for classroom-based learning, learning outside the classroom, distance learning and personal learning reflects both the level of ICT integration in learning and the varied and flexible ways it is used.

Globally and in Africa, the role of digital technologies in improving learning conditions, experiences and outcomes, is still subject to significant debate (Hinostroza *et al*, 2012). The large num-

ber of respondents reporting that using digital technologies has a positive impact on learning outcomes serves to highlight the importance of deeper exploration of the nature of the learning experience with technologies in various African contexts. In addition, there is continued work required in assessing the nature of learning outcomes and the value in investigating more openly the possible negative effects of technological integration and ways to manage these effectively. The latter is a story that remains under-explored.

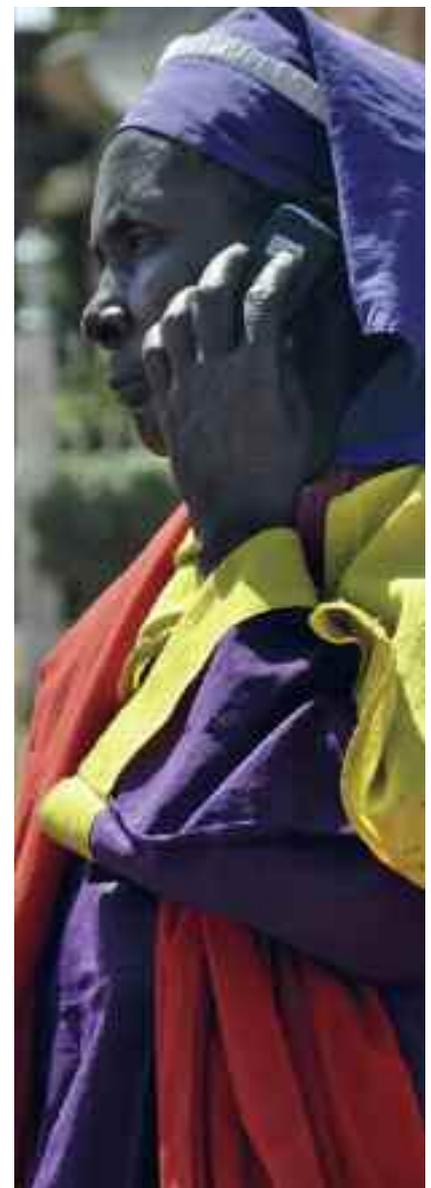


Photo: Karolina Lagiewka, Kenya, "Legio Maria follower using mobile technology"

Technology Enhances Learning and Life

David Angwin

Technology vendors Dell and Microsoft have been working to deliver classroom technology for remote regions and, in particular, into schools that have not previously had access to any form of computing technology.

Mamoeketsi School in Lesotho is profoundly aware of the importance of technology in educating and empowering young people. The school is located in Lesotho, near Maseru. HIV/AIDS affects a third of the population and around 50 per cent of the school's students are orphans. Most are familiar with poverty. Although the government invests 12 per cent of its gross domestic product in education – and the country's literacy rate is one of the highest in Africa – few students have access to technology. Less than 5 per cent of the population has access to the Internet or even basic mobile phones with text and call functions. However, through the efforts of Moliehi Sekese, a charismatic maths and science teacher at the Mamoeketsi School, students now have access to affordable technology that is significantly raising their academic achievements and enhancing their potential.

After attending a Microsoft Shape the Future event – an initiative that supports access to technology in developing countries through partnerships with companies such as Dell – Sekese was inspired to see how technology could engage pupils in a dynamic way. She devised a project about native plants and herbs, requiring students to report to her by text message through mobile phones borrowed from relatives or friends. The project was a huge success, exciting students so much that Sekese found herself receiving text messages in the middle of the night. Sekese realised that the school needed to empower students with access to technology, but cost was a major barrier to this.

Mamoeketsi School wanted to implement an affordable, low-maintenance IT solution to provide its students with access to the internet, supporting research and collaboration, so the school implemented a shared computing solution with Dell 'zero clients' and Microsoft Windows® MultiPoint Server to deliver a low-cost, centrally managed computing environment for students.

As a result of its dynamic use of technology in teaching, the school has reduced truancy. While access to technology can be a big motivator for students and increase attendance and engagement in learning; it can be challenging for students who are slow learners. Shared computing addresses this by enabling the teacher to remotely monitor and interact with an individual student from the teacher's computer station. Sekese says: "Children who are slow learners often feel embarrassed about asking questions in class and so they stop coming to school. Truancy has stopped being a problem since we deployed the solution because I don't have to disrupt the rest of class or call attention to the slowest learners."

Students are also more excited and motivated about school because it is a place where they are discovering a world that holds more possibilities than they previously imagined. Sekese says: "It's amazing to see how much the students can learn when they have access to things that can help and inspire them. With the native plant project we saw that we could motivate and engage pupils with just a few resources. We can do a lot with an affordable, small solution, and that's why working with Dell is so important to us."

Students are now motivated to study and train for careers following online research and collaboration. As part of her curriculum, Sekese has created numerous research projects that require students to collaborate and share their work with their peers, as well as online with students in other countries. Collaboration with a school in Norway, for example, involves the students communicating what life is like in Lesotho through blogs and comparing this to the students' lives in Norway. Students use their observations of their own lives and research topics that they are not so aware of, such as local events. This increases their understanding of their country and the world at large.

Sekese says: "One consequence of the students' internet research and collaboration is that they've discovered careers they want to follow. For example, some want to be police-women or policemen to help reduce crime in the country. Others have decided they want to be self-employed and open their own motels to support tourism in their country. There's so much that the students know about now that they wouldn't have had the opportunity to find out about before – this is thanks to the this solution. By providing them with technology, we're maximising their potential as human beings."

Since implementing the technology solution, Mamoeketsi students are top out of 700 schools for English exam results. All curriculum subjects in Lesotho are taught in English. In addition to completing coursework in English, students are required to take an English language exam before they can register with a secondary school. As Sekese marked the students' coursework and read their online blogs for the Norwegian students, she noticed that their fluency was increasing quickly. She says: "Our English examination results were the highest out of 700 schools in Lesotho after our students had been using the Dell solution to collaborate with Norway. When the students had to register with a secondary school they also found it easy to communicate effectively with administrators, making it easier to secure their place in a school."

"There's no doubt in my mind that technology enhances learning and life. Our results and progress with Dell and Microsoft are proof of what you can accomplish with affordable technology," Sekese says.

David Angwin is director of global field and channel marketing for Dell | Cloud Client Computing

3. Constraints, Failure and Change

Some of the primary objectives of the survey and report are to uncover the challenges faced by respondents, to engage realistically with failures that they have experienced and to

build an understanding of the anticipated changes that will influence the use of digital technologies, with the aim of improving learning and teaching in Africa over the coming years.

3.1 Finances, Hardware and Bandwidth are Top Constraints

Respondents were asked to identify the challenges they face when using digital technologies for learning in the African country where they work. The lack of financial resources, appropriate hardware and training, along with limited electricity and bandwidth constraints, were reported to be the biggest challenges faced.

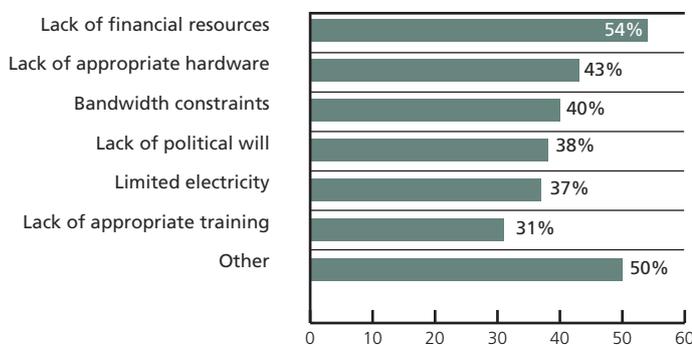
turn. One male respondent, working for the government in Liberia, explained the challenging, long-term constraints that they are facing: *'As an emerging country coming out of crisis for over 14 years, our resources were depleted, thus creating the problem of financial scarcity. The brain drain in Liberia is causing the lack of quality educational*

of a local bank to provide credit for their organisation: *'The reason for lack of financial resources has been the inability of the local banks to provide my organisation with a loan.'*

The second most frequently cited constraint in the effective use of technologies to enhance learning was the **lack of appropriate hardware**. Within this category, the dominant themes were respondents' reflections on the limited access to computers, laptops and digital projectors within their respective organisations. One example of this is a male respondent working in a government-supported organisation in Mauritius who highlighted the lack of overall access by stating that *'only 34% of the population own a computer'*. Similarly, a government employee in Zambia expressed that they experience a *'lack of enough laptops/desktops and digital projectors'*. Speaking from an institutional context, a training manager at a university in Zimbabwe mentioned that *'a number of staff do not have personal computers that they could use in accessing the Internet and programmes that could enhance learning'*.

The third most common category of response related to **bandwidth constraints**. Once again, the majority of respondents identified the financial cost of adequate network connections as the primary prohibitive factor. Others highlighted the significant bandwidth disparities between urban and rural

Top Constraints to the Use of Digital Technologies for Learning



The lack of financial resources was the most significant reported constraint. This is linked to the expressed frustration of respondents regarding the lack of resources available to purchase hardware, pay for software and web services, train personnel, implement programmes and maintain infrastructure.

The majority of respondents work in public organisations and many of these directed their frustrations at the lack of available government funding, both historical and as a result of the more recent international economic down-

content because there are no specialities or specialists in the country that can guide the learning experiences of those desirous of learning ... we lack financial resources to achieve our objectives.' Another male respondent working in TVET in a government-supported organisation in Tanzania noted that the biggest constraint was simply the *'dependence on budgetary allocation from the central government'*.

However, in contrast, one respondent working in a privately-owned organisation in Ghana identified the key constraint as being the limited ability

areas, both in regard to cost and capacity. This is exemplified by a respondent from Kenya working in informal education who explained that, in rural regions of the country, *'poor connectivity makes it hard to make a vast impact – there is slow and unreliable Internet connection which at times is*

expensive to maintain'. Others said that the bandwidth available across their countries was inadequate for effectively supporting interactive usage, streaming of video or for other common eLearning practices. This category of constraint is well summarised by a male respondent working at a privately-

owned organisation in Uganda: *'Where the Internet is, bandwidth makes it impossible to have meaningful interaction with the product. Where bandwidth is reliable and available, schools cannot afford to pay for it.'*

Harnessing TV White Spaces for Learning

Jenny King

What constitutes good connectivity? The answers to this question seem to be related to personal experience: dial-up users think that every other option is great, whereas ADSL users want cheaper, faster upload and download speeds. So we need to start with the premise that good connectivity is subject to the individual user's experience, and this is by no measure an observation unique to South Africa.

The areas that need to be urgently addressed are those in rural and under-served locations where adequate infrastructure is not available. Access to information is vitally important in many sectors, but the one that is relevant to this discussion is education.

Looking for ways to overcome the difficulties posed by lack of connectivity infrastructure, we have chosen to become involved in a TV white space trial. We hope to find answers to address many of the questions about distance, upload and download speeds, latency, bandwidth regulation and the potential impact on other users of the spectrum. The trial went live on the 25th March, 2013, enabling me to share what we have learnt so far, in a fairly generalised way.

Firstly, what is TV white space? Put simply, it is the unused channels in the broadcast TV spectrum. New radio and database technologies allow that spectrum to be used to transmit wireless Internet over distances of up to ten kilometres. As a result, white spaces can be used to deploy broadband access and other mobile data technologies. This technology is important as it has the potential to overcome the problem of distance where there is a lack of infrastructure.

We chose to use schools to trial the TV white space technology, this being partly due to the e-Schools' Network's relationship with the schools and partly because we know schools will use all the capacity that is available to them. The schools that we selected currently use connectivity in fairly broad ways. The goal of this trial is not to measure the existing ICT interven-

tions in the schools but rather the faster, more stable connectivity over greater distances.

As the trial is still in its early stages, we have yet to record any impact on teaching methods. However, I expect that Bring Your Own Device (BYOD)-based practices will slowly be utilised during the lessons. Mobile phones will come into the classroom and their importance cannot be underestimated. As a result of the increase of devices in classrooms, providers of content will have to rethink the way that the content is delivered.

The success of the South African trial can be attributed to the Independent Communications Authority of South Africa (ICASA) supporting the trial right from the start. It has been vital to have the right people in place, including a professional project manager, committed financial backer, members of the wireless fraternity, support structures at school level and companies that were prepared to specially build radio devices and software for these devices. A further crucial stage is the evaluation and reporting that will take place and the cooperation of all the partners – Google, CSIR Meraka, TENET, WAPA, Comsol Wireless Solutions and the e-Schools' Network – working closely to ensure a successful outcome.

Let me briefly discuss some of the limitations we are facing with this, one of the first African trials. The new hardware and software had to be specially manufactured for the trial as there are currently no off-the-shelf solutions. Each of these devices had to be programmed to communicate with each other and a fair amount of troubleshooting was needed. This also means that at this stage there are no pricing models, as the equipment used is not commercially available. In addition, this broadcasting spectrum has yet to be regulated, so the cost of using white spaces in this way is currently unknown and will likely be influenced by license agreements and regulations. However, our trial will provide essential data for ICASA to regulate this bandwidth appropriately. A further point to mention is that all staff had to be trained on using the software and

devices. Although there was no problem with staff developing new skills, this required a significant investment of time.

In our setup we have three base stations and ten specially chosen schools. The schools were selected by a rigorous process: they had to be within a 10km radius of the base station and needed to have technology champions in the school as well as the enthusiastic support of their principals. Starting with a short-list of twenty, we whittled these down to ten final trial schools. The three base stations are located at the Stellenbosch Medical Faculty building at Tygerberg hospital and use different 8MHz channels to avoid interference.

To date the trial has shown that the signal has the capacity to deliver non-line of sight connectivity (although line of sight remains preferable). Speed tests have achieved download speeds of 8Mbps (megabits per second) and upload speeds of 2Mbps. At this point, I am liaising with the schools on a

monthly basis to gather feedback from staff, and CSIR Meraka will perform spectrum field measurements.

With connectivity available across the entire country, learning anytime, anywhere could truly become feasible. It will enable children anywhere in the country to log on whenever they want to and receive lessons online, from a centralised hub of teachers. So no matter where the teacher is, or the child, education can be delivered to them. Lessons could be streamed from one school classroom to another, no matter what the location. This means a child in a deep rural school wanting to take a subject that is not offered by the local school can participate and will have every chance of doing as well as a child in the middle of the city. Equal education for all.

Jenny King is Executive Director of eSchools Network, an NGO servicing the IT needs of schools in South Africa

Following bandwidth constraints, the fourth category of response was that the **lack of political will** is the top constraint. Within this group, respondents articulated frustration with their own governments and often expressed concern that their respective countries were lagging behind the rest of Africa or the rest of the world. For some, political will was viewed as the overarching issue that triggers all other important constraints. This was demonstrated by the respondent from Cameroon working in TVET who stated: *'Political will is the main constraint ... education and everything that goes with it depends on government ... for a successful introduction to ICT education, the willingness of the state must be accompanied by a major investment in both hardware acquisition that supplies connection, electricity and construction of appropriate facilities, and in the training of support staff'*. Additionally, a respondent from Togo, working in the private sector across all levels of education illustrated the way in which the lack of political will impacts everything else: *'Since there is lack of political will from the decision-makers of the country, the*



Photo: Glory Ibrahim, Tanzania, "Integrating ICT into medical education"

acquisition of necessary hardware and software to support the learning and teaching is still overpriced for the community ... this leads to a lack of equipment for educational institutions and training'. However, it is important to note that not all respondents considered the lack of political will to be a major constraint. Some actively stated the opposite, as exemplified by a male respondent from Zambia working for the government, who argued that *'the*

political will is there but the implementation is poor' and a female respondent working across all education levels in Cape Verde who noted that *'Cape Verde is a country with strong political and human resources capacities, we just need financial resources'*.

The fifth category of responses identified the **limited availability of electricity** as the most significant constraint. For this group, power was often

described as unreliable rather than entirely absent. Significant challenges were the regular power cuts due to national utility shortages and the erratic outages due to failing transmission infrastructure. The constraint was simply articulated by an NGO worker in Tanzania: *'You may acquire technology but if you do not have power you cannot operate any equipment given'*. One respondent working for a private organisation in the schools sector in Uganda argued that it is the lack of reliable electricity that stops people investing in technology: *'Electricity in Uganda is so unreliable that people are not eager to spend on technology-related ventures'*. Similarly, in Nigeria, a respondent working in higher education noted that *'in Nigeria, electricity is so unreliable that the talk of using technology sounds unrealistic to man; even if the instructor has some reasonable access to electricity, learners who are the end users and targets of the technology adoption are unlikely to have power ... this creates frustration and discourages many from trying'*. A

male respondent working in the private sector in higher education in Nigeria began by stating that *'limited electricity or lack of it at all is a major challenge'* but, in contrast to others who critiqued the government, he went on to note that *'the Nigerian government is working really hard to solve this problem because it is one that has really affected every aspect of the economy'*.

The final category of responses focused on the **lack of appropriate training** or re-training of staff as the biggest constraint to the effective use of technologies. A lack of initial or continuing teacher training both in the basic use and pedagogical integration of technologies was the most widely cited challenge. Regarding the quality of training, the limited appropriateness of the training eventually delivered to students was repeatedly referred to, as exemplified by the Nigerian NGO worker who simply highlighted the *'lack of appropriate training'* as the key constraint. Another respondent from Nigeria, working in a government-

supported organisation in higher education, went further in criticising the approach taken in providing training in ICT for learning, stating that *'there is no provision by the government to train the people'* and suggesting that *'even when provision is made, politics interferes and resources are misdirected'*. Particular issues highlighted included the lack of training programmes that are adapted for the technologies available and the local realities and needs, alongside a significant mismatch of training and employment opportunities. Finally, the consequences of a stark rural-urban disparity were identified again as a major constraint in reference to teacher training. A female respondent working in Zambia in the school sector explained that *'teaching is looked down upon as being low paying and therefore the teachers trained at universities or teaching colleges are saturated in urban areas, leaving rural areas to have to make do with volunteer teachers who are not always qualified enough to do the job'*.



Photo: Jonathan Kalan, Kenya, "Bringing Mogadishu online"

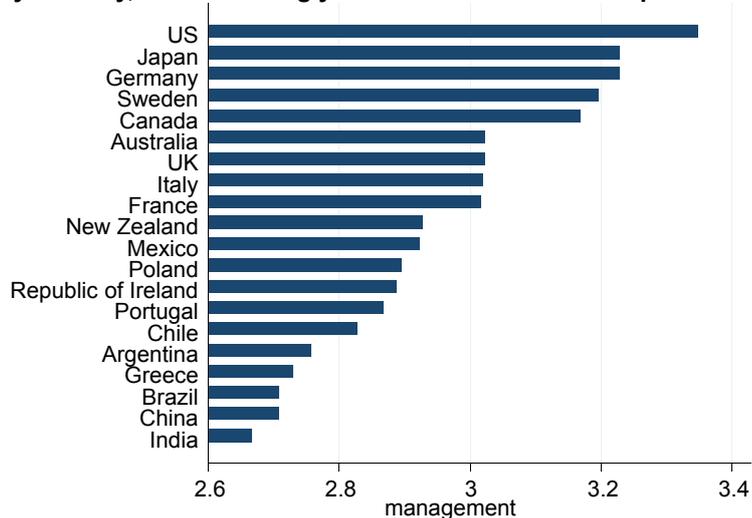
New Models of Management Education for Africa

Guy Pfeffermann

During the last decade a team of researchers interviewed executives in thousands of firms in twenty countries, including hospitals and schools, about the quality of management in these organisations – the most comprehensive such research ever undertaken. The researchers found that, when they sorted the twenty countries by levels of affluence (gross domestic product per person), the two rankings – quality of management and affluence – matched exactly (Figure 1, Bloom et al, 2012).

Management and Development

Figure 1: Management Practice Scores (in Manufacturing) Vary by Country, but are Strongly Linked to Level of Development



Note: Averages taken across all firms within each country. 9079 observations in total.

In other words, there is a clear relationship between average quality of management in a country and the poverty or prosperity of its population.

Of course, correlation does not necessarily mean causation. Fortunately, the same research team ran a randomised management experiment on 28 large textile plants in India. The firms with the large improvements in management also saw large causal improvements in productivity. The research suggests that continuing such improvements over 20 years would generate five additional percentage points to India’s annual economic growth – a momentous improvement over current performance (Bloom, Eifert et al.).

In Africa, where according to the African Management Initiative there is only one business school for every 10 million people, there is a drastic shortage of the management talent needed to make these kinds of gains. Not just industry, but sectors such as health, education, agriculture, infrastructure,

even tourism, lag behind because there aren’t enough people with the management skills necessary to build companies and deliver services effectively. And on a continent where jobs in the formal economy are often scarce, having the skills to run a successful small business can be a major factor in many people’s ability to feed their families.

All of this points to an acute need for more and better management education throughout Africa. However, the traditional model in developed countries, where it requires US\$50,000 annually to come to a campus and listen to lectures for 15 hours a week, is both impractical and uncompetitive.

In Africa, and across the globe, emerging technologies and rapidly expanding access to them will have an enormous impact on generating efficiencies to bring down the now prohibitive costs of management education. New technologies will go well beyond simply delivering content in new ways and may ultimately lead to a complete reorganisation and refocusing of educational institutions everywhere.

One way to conceptualise ongoing changes is that the traditional structure, in which universities (including business schools) supplied the entire value chain from knowledge-generation to course delivery, is breaking down. Instead, specialised players are emerging. Knowledge generation is very costly, and only well-endowed schools or schools that have access to sufficient public funds can afford that ‘stage of production’. Business schools are becoming ‘pedagogic engineers’ whose role it is to adapt knowledge that is generated elsewhere to local needs. Soon faculties will be lecturing less and tutoring more, along the lines of the ‘flipped classroom’ model in which students are assigned videos and online materials for their homework, and come to class in order to discuss what they saw with their teachers.

The bigger question for Africa is how educators, industry, development agencies and other stakeholders can work together to re-imagine the development and delivery of management education in light of the technological advances and economic realities of the modern age. With these disruptive forces at work, it may be possible as never before to make management education accessible, affordable and relevant to millions of Africans across the continent.

Guy Pfeffermann is the CEO of the Global Business School Network, a non-profit organisation with a mission to improve management education for the developing world, which he founded in 2003 when he was serving as the Chief Economist of the International Finance Corporation at the World Bank.

port and nurturing - it is a living thing. Developing a platform and hosting static content without any form of interaction, feedback or communication is not effective.'

The majority of reasons given for the failures experienced were linked to networks and infrastructure, especially a lack of sufficient initial investment in the network, limited policy to oversee the use and development of the network and a lack of technical training for those responsible for its maintenance. An executive manager at a Nigerian university suggested that service outages occurred *'due to the fact that the technology is not home-grown'*. More generally, several respondents attributed the failures to the reluctance of educators to adapt and adopt new methods for using technologies in their teaching.

Respondents were also asked to propose changes or solutions to the failures that they had encountered. There was a wide range of innovative ideas proposed by survey respondents based on their experiences, with many recognising that their endeavours would likely have been more successful if bandwidth and electricity were provided where previously they had been lacking, if financial support had been sustained, if teacher training had been prioritised and if there had been better leadership, policies and planning in place around the effective use of technologies to support learning.

Several respondents emphasised the way in which their programmes could have been made more effective by regularly improving and upgrading the necessary infrastructure for technology to be used in education. This was exemplified by a male respondent working in higher education in Zambia who advised *'investing in backup power supplies such as generators and dedicated power lines'* and to *'upgrade hardware every two to three years'*. A female academic from South Africa

choose to explain why this lack of investment is such a frequently encountered limitation, stating that *'no-one likes to fund the boring enabling infrastructure'*.

Others expressed that their biggest lessons concerned the need for planning, strategy and commitment. A male respondent working in a privately-owned organisation in South Africa explained that the reason for their failure was the *'limited support from senior management as well as a misunderstanding of what eLearning requires to be successful'* and that the key lesson learned is the need for *'a clear, long-term strategy and aim of what is to be achieved using eLearning, as well as committed financial and organisational resources'*. With a similar emphasis, a government worker working in higher education in Swaziland told of how they had learned the importance of *'institutional practice based on policy'* rather than simply depending on the *'individual interest'* of staff. He suggested that his institution *'needs a clear policy on the use of technologies to support learning as a base to the efforts it makes in acquiring these technologies'* and highlighted the importance of rewarding staff for making use of technologies. Again, a

respondent from Tanzania working for an NGO at the school level argued that most of the failures encountered are due to corruption, combined with a lack of commitment. He suggested that the important lessons they had learned are the importance of promoting transparency and *'enhanced policy advocacy targeting all stakeholders including parliamentarians in demystifying ICTs for education and strategic alliances with international partners'*.

Finally, it was encouraging to note several responses where respondents emphasised the way in which they have learnt from their failures and then adapted their approach accordingly. One female respondent working in an NGO in South Africa explained that previously they had provided *'too little ongoing support ... and training that was too broad and not directly useful'* but that now their *'approach to training has changed radically to focusing on a cumulative, relevant, ongoing model of training, based specifically on the needs of the individual teacher and the school'*. eLearning Africa is committed to promoting such a culture of reflective, collaborative and positive learning from failure in order to improve practice.



Photo: Hija Salehe, Tanzania, "Urban farmers: Solutions through cell phones"

"Don't Be Afraid to Fail"

An Interview with Darlyne Komukama, Founder of Shakai Media

Please tell us about your personal journey: what was your most influential formative educational experience as you were growing up?

I have always loved to read. As far back as I can remember, I have had some sort of literary fiction in my hands and this all started with the very first book my mother bought me, *Thumbelina*, which I started and finished right there in the store. I was about five years old.

Why did you find this to be so influential?

This love of reading has really opened up my mind and my world and given me a curiosity that I have found to be very useful to me as an early adopter of the Internet.

What was it that inspired you to start Shakai Media?

I started blogging in 2004. Over the first three years, the bloggers in Uganda built a great community that would meet up every month. This was my first foray into social media so naturally I took to Facebook and Twitter like a fish to water and I saw how easily social media could be leveraged as a means to a wider audience.

Honestly, a lot of it was selfish. I wanted to be able to engage with the Ugandan brands that I was using and I was disheartened by how few of them were online. I decided to start Shakai Media to help them figure out how to use these tools that were already there to allow them to talk to people like me.

Please tell us how you influenced Shakai Media since it was started?

Seeing as I started it, that would be the first way I influenced it. To date, I have been in charge of the business end of things but I am still able to pitch in on the creative side.

Can you give us an example of the challenges you have faced in the process of initiating Shakai Media and how did you overcome them?

The biggest challenge would have to be slow adaptation. Even though using social media is a relatively inexpensive way to keep in touch with an audience, the public was slow to gain awareness. This has changed drastically since I started the business. There are a lot more companies offering the same service now in the Ugandan market and even more have added it as a department in itself. This has led us to concentrate more on the SMEs and get them using social media too.

How do you think technologies can best help build sustainable human development across Africa?

I think that it's important to adapt technologies to the reality on the ground. I am especially excited about technologies coming out of Africa, being developed by people who've lived the problems they're working to solve. A great example is

WinSenga (winsenga.wordpress.com). These young Ugandan men modified the traditional Pinnard horn used by midwives [to measure the heart of a foetus during pregnancy] and created a Windows Phone application that reads the information it collects.

It's important to avoid simply transplanting technologies that have worked in one place and thinking they'll apply anywhere they're introduced.

What do you think is the most significant change that needs to happen in order to tackle the education and training challenges that Africa faces?

Speaking as a Ugandan who grew up and went to school here, I think there needs to be a major paradigm shift. Our education system is not training people for the jobs they'll realistically have or the jobs that are even available. A lot of emphasis is placed on white collar professions at the expense of all others. In turn this breeds a sort of resentment for any jobs that aren't in the corporate sector.

The streets are full of recent and not-so recent graduates looking for jobs that just aren't there. A spirit of entrepreneurship is lacking in a lot of them and some of the blame for this goes back to the schooling system. The tide is slowly starting to turn and I hope that in my lifetime, I will see some significant changes.

What do you consider to be the most transformative, innovative and exciting initiative currently taking place in technologies and education, skills development and lifelong learning and training in Africa?

I am following closely the progress of Fundi Bots (fundibots.com) here in Uganda. Fundi Bots is working to introduce students to, and get them excited about, electronics and especially robotics. It has already won a Google RISE grant and I can't wait to see the scientists it produces. It holds sessions at schools across the country and it really is something to see the joy on the kids' faces when they make something they've built move!

What is the most significant lesson or piece of advice you would share with others seeking to follow in your footsteps?

Don't be afraid to fail. That is the most important thing I have learned. All my failures haven't been total because there's always something to take away from your mistakes.

Looking forward to the next five years, what do you see on the horizon in terms of influential changes, transitions, technologies and trends that will affect the integration of educational technologies in education, skills development and the lifelong learning landscape in Africa?

Already, mobile has proved itself formidable on the African market. I see this growing even more over the next five years. Access to affordable smart phones will increase the number of African apps in the marketplace and I can't wait for some of these innovations.

What will Shakai Media contribute to Africa's human development over the next five years?

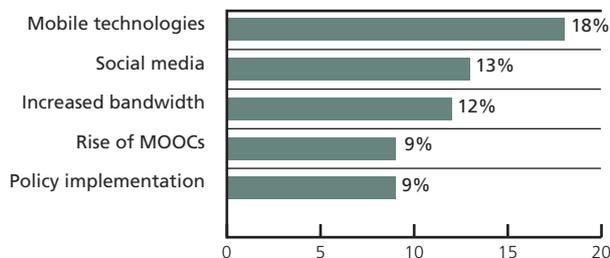
We will continue to get as many people on to social media as we can. As Tim Burners Lee said at a TEDx event that happened in Kampala, and I am paraphrasing, the most important thing is to get the content on the Internet. The more information we have, the more we'll be able to do with it. Shakai Media will continue to do its small part in helping this happen.

3.3 Changes to Expect in the Next Five Years

When respondents were asked what the most significant changes with using learning technologies will be over the next five years, social media, mobile technologies, increased bandwidth, MOOCs and policy implementation each featured prominently.

to the competition that has arisen as a result of the rapid expansion of mobile technology companies: *'The increased number of mobile companies in African has opened a wider opportunity for almost the majority to have access to and own mobile phones. This*

What will be the top changes in the use of learning technologies over the next five years



A sense of inevitability about the increasing influence of mobility on education is evident from the comment of a manager from an association in Kenya who noted: *'Mobile technologies continue to penetrate larger areas and therefore the reach will definitely increase education levels in one way or another.'* Similarly, a government worker from Tanzania anticipated that *'more and more people will be able to access information through hand held devices'*.

A respondent from Uganda working in higher education attributed the growth in use of mobile technologies

creates low calling rates due to the high competition among the telecommunication companies'. These sentiments resonate with views expressed in a research report by Research ICT Africa (RIA, 2012), which states that mobile phone ownership in most African countries is higher than the 40% threshold in voice networks which are believed to trigger the network effects associated with economic growth. It is expected that there will be one billion mobile subscribers in Africa by 2015 (Ventureburn, 2013).

A Zambian secondary school teacher highlighted the link between an



Photo: Felix Warom Okello, Uganda, "Communication opportunities have made life easier for rural residents"

increase in the use of mobile technologies and connectivity: *'As more people have access to mobile technologies, demand for faster and more efficient connectivity will force service providers to improve their connectivity'*. This is reflected in the RIA report that recognises the way in which the emergence of Internet-enabled mobile phones and lower bandwidth adaptations of applications, particularly social media, are driving the rapid diffusion of mobile Internet. This sentiment is expressed again by a government worker from Ghana who commented on the emergence of Internet-enabled phones and the growth in smart phone access: *'A lot of students and teachers and the general public have access to smart phones with all the applications that enable them to learn'*.

Similarly, when asked to name the most significant change that can tackle Africa's education and training challenges, a Namibian practitioner stated the following in an interview:

"Given the rapid evolution of diverse forms of assistive technologies, and concomitant devolution of unit cost, the only significant change required is the provision of universal access to free, high-speed broadband Internet, with the inherent implication that all educational centres will have the infrastructure and electrification to do so. What is a reasonable bandwidth benchmark for African schools? Most ICT4E specialists believe that the definition of 'high-speed' broadband for schools should be at least 10 Mbps, with many countries having already set goals of at least 100 Mbps, even 10 Gbps, in the foreseeable future."

Commenting on the rise of social media, a Kenyan respondent working in the private sector stated the belief that *'social media is becoming like a digital version of you and if you do not have a social media account you simply are non-existent.'*

These views on social media also resonate with trends identified in popular literature related to the rise of social media, the mobile Internet and increased bandwidth. A recent report by Deloitte and GSMA (2012) suggests that in 2012 there were an estimated 22.9 million Facebook users in Africa, the vast majority of whom access the site from their mobile devices. The RIA study also found that in most of the eleven African countries which they analysed, using the mobile phone for social networking applications (such as Facebook) is more common than using it for reading and writing emails, indicating a potential substitution effect of the email with social networking platforms.

Among comments on the prospect of increased bandwidth over the next five years, respondents identified the influence of fibre-optic cables and national programmes on expanding bandwidth access. One respondent from Cote d'Ivoire said that the country *'is currently undertaking a large project*

which sees over 6,000km of fibre-optic mesh throughout the territory, in order to facilitate broadband access to all sections of the population'.

With reference to the rise of MOOCs as a significant change over the next five years, respondents demonstrate their optimism that MOOCs may offer a significant opportunity to expand access to higher education across the Continent. Several respondents expressed the belief that MOOCs open up the prospect of achieving 'education for all'. A respondent working in higher education in Swaziland explained that *'Institutions of higher learning will increase [their] intake since access to them will improve with the learning technologies'*. Others noted that many students and lecturers are already making significant use of online materials, perhaps suggesting a flexible definition regarding what respondents consider to constitute a MOOC. Much of the discussion on the potential of MOOCs to transform higher education has focused on the role of open courses from elite international universities. *eLearning Africa 2013* contributes to this conversation based on the experiences of OERs, open learning and MOOCs in different African contexts.



Photo: Yves Cédric Ntsama, Cameroon, "Having fun with eLearning and multimedia educational games"

OERs and MOOCs: Old Wine in New Skins?

Neil Butcher

There has been a growing buzz about the concepts of Open Educational Resources (OER) and Massive Open Online Courses (MOOCs) and how they will transform education around the world. OER has been the subject of increased attention globally, with many donor-funded projects (most often led by universities) providing space to experiment with different models of openness and research the educational effect that these might have. More recently, governments and inter-governmental organisations around the world have begun to examine the educational potential of OER and open licensing more closely. Likewise, MOOCs have mushroomed, often implemented with or by some of the world's leading universities. Accompanying these has been a plethora of analyses of the MOOC model and its likely effect on education in the long term.¹

Coined at a UNESCO Conference in 2002, OER is a simple legal concept: it describes any educational resources that are openly available for use by anyone, without an accompanying need to pay royalties or licence fees. Different options are emerging that can be used to define how OER are licensed for use, some of which simply allow copying and others that make provisions for users to adapt the resources that they use. The best known of these are the Creative Commons licences (*creativecommons.org*). Unlike OER, the concept of the MOOC does not, by definition, imply open licensing; indeed, many MOOCs are not openly licensed.

Two studies in which I participated in 2012 provided clear evidence of the growing interest in MOOCs and OER. First, a survey on OER Policies conducted by the Commonwealth of Learning (COL) collected several examples of government policies on OER and open licensing. More importantly, research that we did for COL on the business case for OER provided clear evidence of growth in OER activities extending beyond the realm of funded projects, with governments particularly showing an interest in the economic potential of using open textbooks to reduce the cost of procuring materials for schooling. Likewise, universities are showing growing interest in harnessing OER for different purposes, not least of which has been to explore alternative models of accreditation in the face of growing pressure to expand access to higher education (a similar driver behind many MOOC initiatives). In the business case research, we found four areas in which emerging data demonstrates actual or potential economic gains to be had from harnessing OER.

1. Harnessing OER in the creation of new, contextually relevant courses. A case study from Guyana demonstrates powerfully, if only anecdotally, the significant cost reductions that this approach can yield.
2. Applying open licences in the textbook market. The economics of the textbook market, especially in places

where economies of scale are readily applied, indicate clearly that significant efficiency gains can be attained by shifting to open licences. This approach is accompanied by clear evidence from around the world that governments are increasingly understanding its potential and starting to shift decisively towards such models.

3. Releasing research under open licences. Although not OER per se, research is a critical resource requirement for effective education, particularly at the higher education level. Harnessing OER to create alternative accreditation pricing models [which includes the MOOC experiments]. This work is still in its infancy and thus there is no concrete data to demonstrate actual economic gains, but it will be interesting to monitor progress in this area over the next few years.

On the face of it, these trends hold great potential in African countries, where finances are generally scarce and openly licensed resources offer the possibility of providing cheaper access to high quality educational and research materials for use in both schools and universities.

However, these developments leave me feeling uneasy. I see in the growth of open textbooks and MOOCs a replication of models of education that are no longer meeting the needs of our societies. It is true that open textbooks may help to drive down the cost of delivering textbooks to schools, but they are still largely driven by an assumption that the underlying curriculum and classroom-based organisational models, with defined roles and responsibilities for teachers to 'teach the content', are what will best prepare young people for their subsequent entry into society and further education. Likewise, the vast majority of MOOCs seem to emulate the logic and structure of traditional university courses. Sadly, many MOOCs also appear not to be open at all, despite their marketing claims to the contrary. These new models are now predominantly old educational ideas, repackaged: old wine in new skins.

At the moment, we are primarily harnessing the innovation of OER to reproduce content-heavy, top-down models of education that were developed hundreds of years ago to meet the needs of societies in the aftermath of the industrial revolution, models in which the student is still primarily a passive 'consumer' of educational content whose main task is to complete standardised assessment tasks in order to receive accreditation. Open textbooks tend to reinforce these models rather than allowing a fundamental reconfiguration of the interaction between educators and students.

Thus, the urgent imperative – and the real transformative potential of OER and MOOCs – is to evolve new systems of education that can help our societies, and especially our youth, to

navigate their way through a world in which the disruption wreaked by information and communication technologies requires a completely new approach to knowledge, skills and competence. Continuous and ever-present access to open content and open courses offers us the opportunity to rethink the basis on which we organise the educational experiences of both school and university students.

In doing this, we have the opportunity to overhaul resource use (especially the use of our human resources) and the nature of teacher-student interaction so that students can develop key attributes required for success in the knowledge society, including higher order thinking skills, lifelong learning habits and the ability to think critically, communicate and collaborate, as well as to access, evaluate and synthesise information. To do this, we should be harnessing OER and MOOCs to liberate the time of educators so that they can focus on providing more meaningful support to students.

If OER and MOOCs simply replicate the models and curricula of the past, we will have lost a great opportunity to usher in these critically needed systemic changes. Thus, although we cannot know for sure what these new models and curricula might look like, it is a significant opportunity lost if we do not engage proactively and rapidly in working out what they might be, instead just using new technology to recreate the models we grew up with and that are most familiar to us.

Neil Butcher is Director at Neil Butcher and Associates and OER Strategist at OER Africa, an Initiative of the Southern African Institute for Distance Education (SAIDE)

¹Two examples of reviews of MOOCs are referenced below, but a simple web search yields extraordinary volume of writing on MOOCs:

- 'Making Sense of MOOCs: Musings in a Maze of Myth, Paradox and Possibility', Sir John Daniel. Academic Partnerships. 2012. <http://bit.ly/17Hnq10>
- 'MOOCs Will Come and Mostly Go Like Other Edutech Fads', Kentaro Toyama. Educational Technology Debate. April 2013. <http://bit.ly/XHsj8d>

An interview respondent from Namibia also articulated a host of changes that combine to enable an emerging technology and learning architecture:

a central role in promoting large scale access to digital technologies in support of learning. Many of these respondents expressed their hope that if national

"Even more expansion and cost-reduction of fibre-based Internet bandwidth / connectivity to and in Africa. Even more reduction in unit-cost and energy demands of innovative, plug-and-play assistive technologies, with even more locally-relevant educational resources in the cloud. Combined with a new wave of highly mobile teachers and learners, capable of using contemporary (often bring your own) assistive technologies, comfortable with rapidly evolving social media, news, crowdsourcing and viral marketing apps, so much better informed to make educated demands of their political leadership for meaningful change."

It is of particular interest to note the number of respondents who consider national policy implementation and changing attitudes and awareness as significant changes that will emerge in the next five years. This reflects a clear expectation that government will play

government adopts a national policy then implementation of digital technologies in learning on a large scale will follow naturally. When asked to provide reasons for believing these to be significant changes in the coming years, one respondent from South

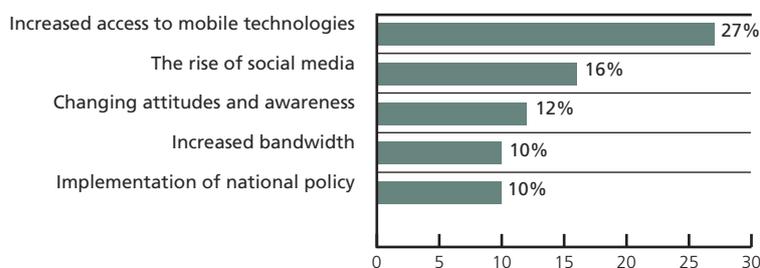
Africa working in the private sector said that: *'The development of appropriate national policy will provide the framework to drive ICT transformation and its use for sustainable development'*. Another respondent from Zimbabwe working in higher education clearly expresses frustration with the current situation and their hope that a national policy will be adopted and implemented: *'Current efforts and initiatives on the use of learning technologies in Zimbabwe are haphazard and uncoordinated. A national policy that is carefully drafted and properly implemented can help coordinate all these efforts'*. Another respondent working in higher education, this time in Nigeria, expressed a similar hope in the consequences of policy formation: *'The ICT policy will make it compulsory for everyone to be computer literate - now national examinations, such as the joint admission matriculation board, will be conducted through the use of computer-based training'*.

3.4 Mobiles are the Top Change Driver

Respondents were asked what they consider to be the top drivers of change in the use of the learning technologies in the African countries where they work. The increased access to mobile technologies, the rise of social media, changing attitudes and awareness, increased bandwidth and the implementation of national policy were identified as the most significant issues.

- Youths are an important driver of change: when their awareness of technology-mediated learning increases, attitudinal changes occur
- The cost of implementing policies and deploying technology specifically for education and learning could undermine the growth that has been enjoyed in the past few years.

What have been the top drivers of change in the use of learning technologies over the past five years?



When asked for the reasons behind their choice of significant drivers, seven core responses emerged from respondents:

- The rise of social media constitutes a major source of influence on education
- Increasing ownership of mobile devices and availability of mobile services have facilitated access to digital content
- Learning practices have been greatly influenced by emerging forms of content delivery such as distance education, open education resources and MOOCs
- Increasing affordability and availability of bandwidth (especially mobile) have improved access
- Improvement in educational practices requires proactive policy practice, positive leadership and extensive efforts

Among these seven reasons there was a particular emphasis on the place of mobile technologies and social media.

Mobile Technologies

Many respondents are clear in the belief that the lower cost of handsets enables wider reach of mobile technologies which in turn is catalysing change in learning and teaching. This was expressed by respondents working in the public sector in Kenya and Zambia, who stated: *'most individuals have access to mobile phones and with the reduction in handset prices, most individuals can access the Internet and thereby more resources from the palm of their hands'* and *'most mobile technologies are cheap and therefore readily available almost to all'*, respectively.

A few emphasise the positive influence of the liberalisation of telecommunications and the shift towards accessing the Internet via mobile platforms. The

significance of this was emphasised by a respondent from Zimbabwe working in higher education who stated: *'Mobile technologies, specifically mobile telephony, due to their relatively low cost and wider reach have enabled many in Zimbabwe to communicate and connect to the Internet easily and cheaply'*. This was echoed by a Nigerian respondent, also working in higher education: *'Liberalisation of telecoms has provided an opportunity for a dramatic change in the rate of diffusion of the Internet and most people today use the mobile platform to get connected to the Internet'*.

A Namibian practitioner also highlighted the growth of mobile Free and Open Source Software: *'FOSS has become pervasive in ICT4D, given the dominating volume of FOSS-based mobile technologies being consumed globally.'*

These views are consistent with findings from popular literature which highlight the exponential rise of mobile technology access in Africa, particularly of mobile phone subscription (GSMA 2012, World Wide Worx, 2012). Research from the World Bank (2013) indicates that at present, 53% of the 874 million inhabitants of sub-Saharan Africa have a mobile phone subscription.

Despite all the optimism and energy, increased access to mobile technologies, especially Internet-enabled mobile phones, does not translate into their system-wide integration in formal learning and teaching in African education institutions. This is a key finding in a study by UNESCO (2011) which argues that mobiles are currently only being fully integrated with learning and teaching in a few pilot projects, some of which are showing positive learning outcomes.

Alongside mobiles, there appears to be rising interest from education

authorities about the potential that computer tablets may hold for accessing educational resources and enhancing learning and teaching in and out of the classroom, both formally and informally. Four 'African' education tablets have reportedly already made their way on the education market (Coetzee, 2012). The uptake appears to be more prevalent in private schools, with a limited number of public education institutions also exploring their use. In response to this current attention, two dedicated sessions at the *eLearning Africa 2013* conference will discuss experiences with tablets in classroom practice in schools.

Social Media

Respondents highlighted the rise of social media and the potential this has for improving learning and growing leaders in the coming years. This was illustrated clearly by a male respondent from Sudan working in TVET for a government organisation who noted, *'the rise of social media in the last years enabled both teachers and students to improve their use of computers as well as the foreign language, although at a limited level, but it was better than before'*. A female respondent working for an NGO in Nigeria went further, arguing that it is important to proactively shape education in light of the interest that young people have in social media: *'The ease with which African youth have adapted to the use of social media*

shows their interest and the importance in using what interests them to improve our future leaders'.

Social media is also having increased influence on the way that governments and citizens relate to one another. Social media has been used to 'revolutionise political and economic development in Africa' (Deloitte and GSMA, 2012, p.7) and as a tool for industry to engage with customers across the Continent. New social and mobile learning initiatives such as m-profesa (www.mprofesa.com) and Mxit have emerged as Africa's response to 'social learning', and through this it has created an opportunity for platforms that are locally relevant, large-scale and enable learners to direct and pace their own learning.

"Entrepreneurship Isn't About Easy Money"

An Interview with Markos Lemma

A number of African pioneers and entrepreneurs have ventured towards establishing technology start-up companies and innovation hubs. The eLearning Africa Report 2013 interviews Markos Lemma co-founder of iceaddis, an innovation hub based in Ethiopia

Please tell us about your personal journey: what was your most influential formative educational experience as you were growing up?

I never went to any particularly exceptional schools in my childhood. I attended public schools both at primary and secondary level. But the most influential formative educational experience I had was when I joined a university. I obtained a Bachelor's degree from Royal Melbourne Institute of Technology (RMIT University) through a programme of the African Virtual University (AVU), which I attended in Addis Ababa with a mixed-mode education system.

The programme incorporated standard lectures (from Addis Ababa university facilitators), VSAT live lectures from Melbourne, via the WebCT eLearning platform (undoubtedly the first eLearning programme in the whole country) and different virtual

platforms. I believe this method of mixed-mode learning and teaching is very effective: it gives students unlimited possibilities of getting their questions answered from different places.

What was it that inspired you to start iceaddis?

I am one of the co-founders of iceaddis. In the beginning, we were asking ourselves very basic questions. "Where can the Ethiopian creative youth go when they have great ideas?", "How do people start a business with zero experience?", "What can link universities with industries?" The answers weren't as easy as the questions.

Previously, I was involved in private sector development projects at the German Association for International Co-operation (GIZ), back then GTZ. We already noticed many gaps, even with export-orientated companies, in the country. Undoubtedly, the biggest inspiration came when one of the co-founders visited iHub Nairobi. We felt the dots were connected, and the answer was of course as easy as the question. We needed open spaces, collaborative physical platforms, and we need some energised people who are able to drag hands and tap backs to create something great in a country where innovation and co-working are least endorsed.

Please tell us how you have influenced iceaddis since it was started

Community management is in the foundation of the iceaddis structure. We believe establishing new vibrant communities and supporting the existing tech communities are key precursors for start-ups to emerge. The encouragement of these communities creates its own competition and the desire to do and make big things. I have been involved in tech community management at iceaddis since the beginning. Tech communities in Ethiopia are very vulnerable. Communities need constant follow-up, workshops, events and communications.

Can you give us an example of the challenges you have faced whilst working at iceaddis, and how did you overcome them?

One of the biggest challenges we have is the lack of real cooperation from the private sector, government institutes or international organisations. There is always verbal appreciation and willingness to participate but this isn't always done visibly.

Furthermore, recruiting creative, innovative, fast-paced and self-motivated individuals into the communities is very hard. The mindset is not there yet. There are more talkers than doers. Entrepreneurship isn't about quick money. It is about changing the course of services and products. This needs dedication and consistency. We faced a lot of challenges finding such committed people. This is an ongoing challenge.

Another challenge we face is the Internet infrastructure. We don't want our entrepreneurs to waste one minute of their precious time, but the sole Internet service provider, Ethio-telecom, is still struggling to find its position in the Ethiopian tech scene. Only one per cent of the general population is connected to the Internet; this is very small market share for the entrepre-

neurs who are working solely in the ICT sector. Products are not consumed, so the profits are minimal.

As a hub we can't even afford an Internet connection of more than 4Mbps. This slows down our activities at every level. In addition, other infrastructures related to the Internet are still in the infant stage. East Africa is well known for its mobile banking, however, this has not taken hold in Ethiopia yet. Developers don't have infrastructure to sell their product to customers. They cannot upload their product to either Google Play or the Apple Store. There are no credit card systems and no international banking services.

However, we have been developing a local app store to tackle this problem. Once this platform is up, developers will be able to start to sell their products to customers in Ethiopia using SMS balance transfer. We take these challenges positively. The reason we are up here and working is to make sure that innovative ideas come out of the hub to tackle such issues. We are innovation hub, not an ICU unit!

How do you think technologies can best help build sustainable human development across Africa?

The answers for most of the questions we have in Africa are critical thinking and access to technology. Usually, people think about high-techs whenever they think of technology. The truth is we need to get access to technology at every level. Promoting and using technology should be widely practiced. As the famous saying goes: "it is easier to have old problems than new solutions". We need to accept new solutions. There is no magic technology which solves all the problems we have. In reality, only few technologies work in specific situations out of thousands of technologies available. We need to try out, test and keep on promoting and using these solutions.



Photo: Gereon Koch Kapuire, Namibia, "Tablet-enhanced storytelling and recording in Namibia"

Africa is famous for mobile technology and social media. If the next big thing doesn't come out of Africa, there will be no next big thing. Africa is big. My knowledge is very much limited to my surroundings, but I believe that in every village everyone should work to enable access to technology and encourage people to think critically.

What do you think is the most significant change that needs to happen in order to tackle the education and training challenges that Africa faces?

The first and basic change that should occur is that Africans need to believe that if we don't solve our problems, no one will. But I think I am too late to state this. Most Africans are already aware of that. The basic change is done. Education is the key and it all starts at the family level. Families have the highest responsibility in raising the next generation. I believe the biggest change should happen to tackle education and the challenge we face in Africa is to have a tight relationship between communities and educational institutions.

The Internet infrastructure should be improved. Schools need to be more equipped and open. I have noticed in the schools in Ethiopia that schools are only for the students. This attitude should be changed. Higher education should work closely with the private sector; students need to get their hands dirty. If education is all about theories, we only need to teach people to read. We need to learn but also practice what we learn. I know these are basic and elementary statements. But these are the essentials.

Education reforms and curriculum revision should be carried out at every level. We should stop teaching, we should start educating.

What do you consider to be the most transformative, innovative and exciting initiative currently taking place in technologies and education, skills development, lifelong learning and training in Africa?

I'm really excited to be part of the reading research project currently running in two Ethiopian villages. This project aims to tackle low literacy levels – a serious problem in Africa. The research is carried out in collaboration with OLPC, MIT and Tufts University. Basically, we give tablets to the kids and check if they can learn how to read just through using apps. The programme has been running for one year, and the children in the project are on the cusp of being able to read. This is a very innovative and transformative initiative going on in Africa right now.

mLearning is very transformative. There is high penetration of mobile phones on the Continent. This is something growing at an interesting rate. There are more mobile phones in Uganda than light bulbs and 91 per cent of South Africans own at least one mobile phone. In Gabon, there are more mobile subscriptions than inhabitants.

Using mobile phones for education is not only innovative; it is also far cheaper than traditional models. Schools don't need to provide mobiles as students already own them. This is a great advantage over organising a computer lab. The culture of mobile communication is also mature - people in Africa know very well how to operate a mobile phone. This is especially interesting considering the fact that mobile technology is one of the fastest growing technologies in the world. Ubuntu already introduced standard Operating Systems for mobiles. I believe the schools should seriously consider how to teach students to get the maximum use out of their mobile phones.

The vibrant spread of innovation and incubation centres is also a good example of great African initiatives. These hubs help the students learn entrepreneurship, life-skills and business skills and they have enough facilities to give on-the-job training.

What is the most significant lesson or piece of advice you would share with others seeking to follow in your footsteps?

A new mindset is coming to Africa. This generation of Africans is tired of aid. We are sick of listening to the same old single story over and over again. I began with understanding our surroundings. I have been giving enough attention to what is going on around me before I look to see what's up thousands of kilometres away. Our streets are full of opportunities and it is important to participate at the community level. I believe we need to do things on the spot, communicating as far as it is possible and thinking of the long-term and comprehensive benefits.

My advice is that it is all about drawing a small circle around us. We need to give extra attention to where we are living. We need to influence the people around us and start small. Of course, the more we win over the heart of our community, the more our circle will expand.

Looking forward to the next five years, what do you see on the horizon in terms of influential changes, transitions, technologies and trends that will affect the integration of educational technologies in education, skills development and the lifelong learning landscape in Africa?

In the near future, the participation of private companies in the education sector will grow. Almost 50 per cent of Ethiopia's population is under the age of 18. With scarce facilities, this is a big threat and traditional educational institutes cannot satisfy this need alone. The Ethiopian Ministry of Education targets to have at least one school in each "kebele" (about 3 km radius). This means that the numbers of students who are ready to join university are extremely huge. It requires a lot of private sector involvement.

Internet penetration will also increase in the coming years. This will give a suitable environment for eLearning and mLearning. I also expect that the number of diasporan Africans coming

back to Africa will increase. This will make the universities better equipped in terms of human resources.

I also believe Open Educational Resources (OER) will be widely used. More and more schools are integrating mobile phones into their classrooms. More content will be generated by Africans. Investment in affordable tablets and laptops will circumvent the high cost of printing text books.

What will iceaddis contribute to Africa's human development over the next five years?

iceaddis is a place for high potentials. Start-ups emerging out of iceaddis will create unique job opportunities. The whole philosophy of open and common knowledge is to influence the

mindset of young Ethiopians. Iceaddis will work on encouraging a sharing culture, promoting Ethiopian innovation to the world. The icehubs network is a growing network: icecairo in Egypt and icebauhaus in Germany are already established entities and I believe the icehubs network will be expanding to other neighbouring countries. There are already initiatives to open hubs in South Sudan, Kenya and Djibouti. The iceaddis prototyping facilities will also enable our communities to design their products.

We are looking forward to forging new partnerships and connecting with more supportive organisations: we are open to any kind of cooperation! Our contribution is to be a home for future innovators.

3.5 Government Still the Most Important Change Agent



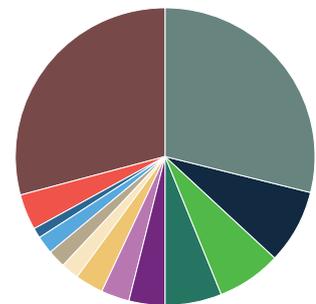
Photo: Willemijn Edens, Kenya, "Empowering illiterates with election information via mobile"

There is clearly significant dynamism and optimism about the way that mobile technologies and social media are opening up new ways to learn. Within this environment, the survey sought to discover what respondents consider to be the most important

agent for accelerating the integration of learning technologies in the African country where they work. It is particularly noteworthy that the most common response, as in the 2012 survey, was to identify national governments as having the key role as an agent of change.

Respondents were over three times more likely to identify the role of national government (29%) in accelerating the integration of learning technologies than to identify the role of the private sector (8%). This reflects a strong sense among respondents of government responsibility and accountability with reference to the design and delivery of education, including the role of digital technologies in support of learning, teaching and improved education management. It may also reflect the way that, in many African countries, governments continue to play an important role with reference to national policy development and implementation, the allocation of national budget for education and skills development and the development of partnerships in support of government national objectives.

Who is the most important change agent in accelerating the integration of learning technologies?



● National government	29%
● The private sector	8%
● Schools.....	7%
● Non-governmental organisations	6%
● International donor agencies	4%
● Students	3%
● The community	3%
● Regional authorities (such as ECOWAS, SADC, AU)	2%
● Local government.....	2%
● Parents.....	2%
● Provincial government	1%
● Other	4%
● N/A.....	29%

Security, Investment and Learning

Harold Elletson

Some months before he was elected President of the Republic of Kenya, Uhuru Kenyatta addressed the Africa Forum on Business, Investment and Security, an annual conference of business leaders and security experts.

“We are here,” he said, “because the unique conditions of our time make the discussion on security ever more important and ever more personal for each one of us.” His audience did not, perhaps, need to be reminded of the importance of security; Kenya’s continuing military action in Somalia, ethnic violence on the Swahili coast and a terrorist attack in the heart of Nairobi were fresh in their minds. Yet his call to his countrymen to “unite in a spirit of peace”, combined with a passionate declaration of the importance for Africa of overcoming the Continent’s security challenges struck a chord that echoed beyond the conference centre and may indeed have contributed to his election victory.

Now that he has been elected President, however, Kenyatta may need to keep reminding himself and his colleagues in other countries that the continuation of Africa’s impressive economic boom will depend on tackling a number of security-related problems that threaten to undermine the Continent’s dash for growth.

African countries face an alarming array of complicated security problems – or, as one think-tank puts it rather more seductively, “Africa’s dynamic security environment is characterised by great diversity”. It is a security environment defined not only by conventional challenges, such as low intensity conflicts and insurgencies, but also by seemingly smaller but no less economically damaging problems, such as threats from piracy, corruption, drug trafficking, violent extremism and the growth of organised crime. Whilst many of these problems are interconnected and have similar origins or consequences, all of them have an impact on Africa’s commercial and investment environment.

Although the list of African security problems is long and daunting, there are a number of important areas in which success would have a major impact on the investment environment, sending out an important signal that Africa is not only open for business, but safe for it too.

The first of these is in the field of governance. There is now a widespread and growing recognition across Africa that corruption, electoral fraud and a lack of transparency or accountability are often feeders for bigger security problems, such as terrorism or conflict over resources. At the same time, widespread access to new information and communication technologies (ICTs), combined with growing demands for democratisation in many countries, are beginning to create a

realisation that future security solutions must be based on consent, if they are to be effective.

The second concerns cyber security. Successful modern economies are digital and African businesses, along with investors in Africa, need the security of a modern, digital economy, in which Government information infrastructures and the financial sector are protected and in which there are no safe havens for fraudsters and organised online criminals. Dealing resolutely with threats to Africa’s cyber security will be vital for investor confidence in the future.

A determined effort, with international support, to tackle the Continent’s food security problem is also vital for long-term growth. Food shortages in the past have too often been caused by a failure to find effective solutions to security-related problems and thus to ensure security of supply. In a continent as blessed as Africa is with an abundance of natural resources, food insecurity is not only unacceptable but incomprehensible too. The end of food insecurity will be a sign that Africa has finally become an economic powerhouse.

The final key area in which success will have a significant impact on investment is logistics. African economies need to be open to the world with a secure route to and from international markets. They also need secure internal transport infrastructures for the movement of goods and people. The security of ports, airports, roads, railways and shipping lanes is vital for any modern economy. Dealing effectively with threats to this critical communication infrastructure, such as piracy, is essential for the future of all African economies.

Education, training and the raising of awareness are already playing an important role across Africa in helping to overcome these security challenges. Technology, particularly in the form of solutions based on the imaginative use of mobile telephony, is now an essential part of new training solutions that are contributing in a multitude of ways, to the development of a new, more secure and more open Africa.

When Blaise Compaore, the President of Burkina Faso, opens this year’s Africa Forum on Business, Investment and Security in October in Ouagadougou, Africa will still face many security challenges but he, along with other African leaders, will be well aware of the prize to be won if it can be made safe for business.

Dr Harold Elletson is the Chairman of the New Security Foundation, which is one of the organising partners of this year’s Africa Forum on Business, Investment and Security, together with the Government of Burkina Faso, ICWE and the International Telecommunication Union (ITU).

4. Key Themes

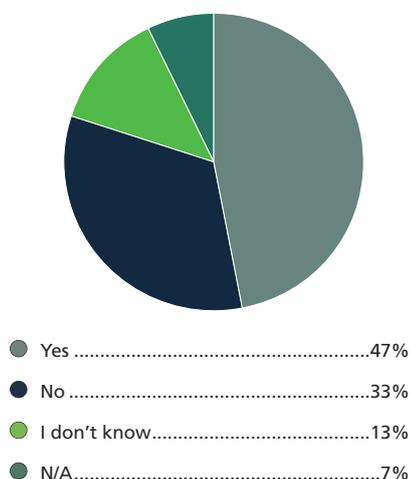
4.1 Producing Local Digital Content

In recognition of the sea-change sweeping across the content landscape, *The eLearning Africa Report 2012* noted that content was becoming increasingly social, fluid, mobile, visual, dynamic and distributed. It further stated that the ability to assess and evaluate content critically is becoming an important 21st Century skill (Czernowiec, 2012). This year, consistent with the 2013 conference theme of *Tradition, Change and Innovation*, the survey and report focus on the experiences of African practitioners with accessing and producing local content, including content in indigenous African languages.

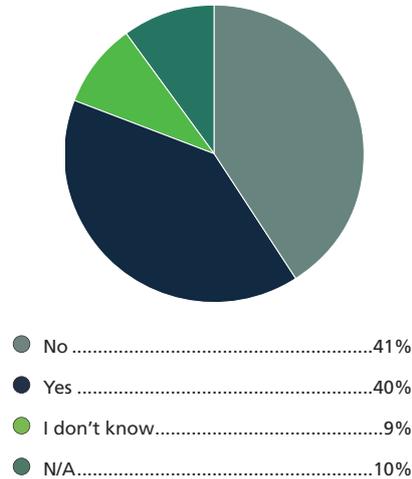
The survey distinguished between access to and creation of locally-produced digital content as well as the use and creation of locally-produced digital content in indigenous African languages. The findings reveal that 47% of respondents have access to locally-produced digital content compared to 40% who are involved with creating local content.

Respondents provided a wealth of information about the locally-produced digital content that they access. A few said that they access farming informa-

Do respondents have access to locally-produced digital content?



Are respondents involved in creating locally-produced digital content?



tion and information on tourism training, leadership and management and public administration. This is exemplified through the comment of a programme manager working in higher education in Uganda, who noted that *'locally-produced digital content includes the problems that affect the farmers in their specific area. And this content is about pest and diseases, financial literacy...'*

Others mentioned their access to locally-produced online training courses, curriculum content for primary and secondary schooling, e-textbooks, e-books, audio-visual teaching and learning material, research journals and local blogs. A respondent working in higher education in Cape Verde explained: *'I have access to digital content shared by other professors in the University of Cape Verde through Moodle, Piazza, intranets.'*

When asked to mention the locally-produced content that they create, respondents highlighted a range of digital materials that are produced within their institutions and that draw on assignments, videos and programmes produced by children, youth and adult

learners. A Cameroonian respondent working in South Africa noted: *'we produce our own local audio and video content to help students understand the concepts in the study material'*. An executive manager working for the government in Cameroon explained their local content creation is *'through the recording of women's activity and adult literacy programmes in the villages of the northwest region of Cameroon'*. Similarly, an information technology manager at a business school in South Africa expressed how their *'in-house studio is used to develop and publish video content for use on educational programmes'*. Local content is also produced by a respondent working in healthcare in Tanzania who noted that *'we have developed ten modules on maternal and child health - assistant medical officers, school and students have access to these contents for the programme.'*

These quotations illustrate the diverse activity that respondents are engaged with in regard to local content use and production. Where possible, *eLearning Africa* supports conversations and opportunities that promote the creation of locally-produced, culturally- and contextually-relevant digital content. In light of this, the 2013 *eLearning Africa* conference pays significant attention to the local production of video content and its use in education.



Photo: Imrana Buba, Nigeria, "Listening to folk tales via mobile phone"

eLearning and Knowledge Management in an African University Context

Kingo Mchombu

As the world moves gradually into the knowledge-based society predicted by Peter Drucker in the early 1970s, one of the challenges for developing countries in Africa, Asia and Latin America is how to create building blocks and vehicles to manage and quicken the transition process. One such building block is Namibia's Vision 2030, which envisions Namibia becoming a knowledge-based society by 2030. For a country to become a knowledge-based society, organisational learning is of paramount importance because individuals need to engage in continuous learning to acquire new knowledge, not just to remain relevant, but also to make their organisation competitive. Human Resources Departments as well as Information Management Departments, where they exist, have a key role to play. There is little doubt that two pillars which could accelerate the birth of the new knowledge-based society are eLearning and Knowledge Management.

eLearning refers to computer-based training and education, and has a history dating back to the 1970s. In its effort to support education, eLearning provides structured education content to enable learners and participants to pursue studies in the format of distance education. Needless to add, technology plays a pivotal role in eLearning, including modern technologies such as the Internet, and other forms of computer-based training. Bilinovac (2010:381) notes that the concept of eLearning has not only been made efficient, but faster by the coming of age of the Internet. He concludes "the learning materials are available through the Internet, and participants (learners and tutors) communicate between themselves by email, chat, discussion forums or social networks, and thus the concept might be used either as the main learning method or combined approach to classroom-based training".

The eLearning approach is particularly valuable because it has flexibility and is cheap. Given these advantages, eLearning could be used by individuals and organisations that want employees to acquire new skills quickly without departing to a far off educational institution.

In comparison to eLearning, Knowledge Management has a shorter but no less illustrious history, having taken off in the mid-1990s. Although knowledge has no single universal definition, it is generally agreed that it involves acquiring, retaining, storing, communicating and sharing knowledge in an organisation using both the latest technologies and traditional means of communication. The aim is to get the right knowledge to the right people at the right time for the organisations to benefit from improved decisions made by the knowledge-enriched individuals (ABC of Knowledge Management, 2004). Knowledge Management has many processes which allow employees to integrate their cumulative knowledge content to address the organisation's strategic goals. Like eLearning, modern Knowl-

edge Management has benefited tremendously from the Internet and associated technologies. The current power of Knowledge Management lies in the extensive use of email, chat rooms, blogs, discussion forums, social networks and databases to leverage ideas and knowledge to benefit the various groups and teams involved in such exchanges. Similar to eLearning, Knowledge Management is now a valuable tool to support organisation learning in order to generate new ideas to address the complex situations in which organisations find themselves, as they struggle to achieve their strategic objectives and remain competitive at national and global levels.

Our major contention in this article is that both eLearning and Knowledge Management are required for African countries to become knowledge-based societies. The similarity and overlapping roles between the two concepts have not escaped the attention of some writers. Aldrich (2005), for example, asserts that "both sides have a critical piece of the puzzle and the best of each will form a new paradigm". Aldrich argues that, given these similarities and overlaps, eventually Knowledge Management and eLearning will converge to form a powerful new entity which brings together knowledge, eLearning and organisational change. We argue that this mixture is required to propel Africa to the 21st Century where knowledge and intellectual property are key to achieving national development. Supporting the merger of the two concepts, Tom Barron (2000) in his article entitled 'A Smarter Frankenstein: the Merging of eLearning and Knowledge Management' points out that new ways to work and learn are just around the corner and web technologies will cement the marriage of the two buzz words.

The merger of the two buzz words, however, leaves several questions begging for answers. Although internationally both concepts are relatively well known, in Africa they have not fully taken root and are still a novelty. Is there sufficient experience to adapt eLearning and Knowledge Management to African realities? Is there sufficient local content to form the bedrock of building the new paradigm? Do training opportunities exist to speed up the fusion of eLearning and Knowledge Management? Can training institutions rise to the occasion to offer the type of training required by a new breed of knowledge managers cum eLearning practitioners?

These questions matter to us in African universities. Many universities teach some form of Knowledge Management but few teach eLearning. A range of regional organisations in Africa are willing to support the spread of Knowledge Management and eLearning, as separate entities. A few such organisations include the Development Bank of Southern Africa (DBSA) based in South Africa, and the United Nations Economic Commission for Africa (UNECA) based in Addis Ababa. Others are the local offices of United Nations Development Programmes (UNDP),

World Health Organisation (WHO), and Food and Agriculture Organisation (FAO). Given that most of the above-mentioned organisations, and many others with local presence in Africa, would see Knowledge Management and eLearning as separate entities, universities have a unique role to play in providing bridging programmes which provide training in both eLearning and Knowledge Management as a single programme.

There is a fair amount of literature which addresses the possibility of training to bring to reality the fusion of eLearning and Knowledge Management. Patrick Dunn and Mark Iliff (2005) have written a paper subtitled 'Why eLearning and knowledge management don't get along' noting that they have too many similarities which may generate some form of cannibalism rather than a blissful marriage. Donald Clark (2003), on the other hand, has written a white paper on Knowledge Management and eLearning while Ras, Memmel and Weibelzahl (2005) have also given their thoughts on the integration of eLearning and Knowledge Management. A brilliant paper written by Thomas Kelly and Diana Bauer (n.d) elaborates on how Cisco created a worldwide eLearning platform for its own staff which merges both eLearning and Knowledge Management. They note that "Knowledge Management initiatives at Cisco are not exclusive to eLearning, nor are they explicitly defined as Knowledge Management. At Cisco, eLearning is the preferred term describing the Internet-enabling of information, training, communication and collaboration. The end goal of Cisco's eLearning initiative is measurable business impact..." What the various works cited above illustrate is that the merger of the two concepts is not only feasible but desirable to achieve the best returns for any organisation.

At this juncture, perhaps we should ask which Knowledge Management tools, among the multitude of available options, can enhance eLearning. Essentially one may note that the same tools which allow organisations to capture, store, share and

enhance organisational knowledge, can be used for creating, enhancing and delivering learning and training to students.

- Shared spaces offered by a Knowledge Management System for collaboration and teamwork, can become the 'virtual classroom' for teachers and students to interact, share ideas and learn collaboratively.
- Content Management Systems (CMS) and, more specifically, Learning Content Management Systems can provide the content repository for learning materials or, more specifically, Learning Objects.
- Learning Portals will provide the customised interface for a student's personalised learning experience, where the student will be able to choose the learning that he/she requires, by selecting the "chunks" of learning needed, and linking to the teacher(s) who can facilitate this learning.

In conclusion, we quote the writer of the article titled 'A smarter Frankenstein' who has talked enthusiastically about a new paradigm shift. He calls it a "a beast (which) combines formal training as represented by eLearning, and the free-floating knowledge swirling through organisations that Knowledge Management practices seek to snare and share" (Barron 2000). So the big question is: can the beast be snared and domesticated to serve Africa's transition to a knowledge-based society through combining the powers which these two innovative disciplines bring? The answer will depend on African organisations and tertiary institutions that have the courage to walk uncharted terrain, creating a hybrid profession: an area we shall hear more about in future.

Professor Kingo Mchombu - Professor of Information and Communication Studies and Dean of Humanities and Social Sciences, University of Namibia.

4.2 Mother Tongue Matters

Another important topic for discussion at the 2013 *eLearning Africa* conference is the value of indigenous African languages. The survey asked respondents whether they used local digital content in indigenous African languages and whether they were

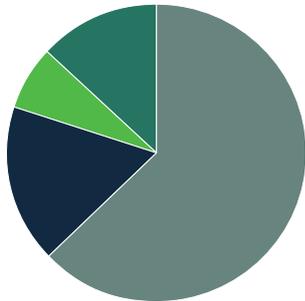
involved with creating local content in any of these languages.

A significant minority who answered these questions indicated that they use local content in indigenous African languages (17%) and that they are

involved in creating digital content in indigenous African languages (16%).

Several respondents detailed the ways in which they are using or creating digital content in indigenous African languages. An IT network specialist from

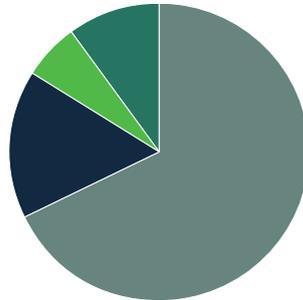
Are respondents involved in using content in indigenous African languages?



- Yes63%
- No17%
- I don't know.....7%
- N/A.....13%

Ethiopia noted that 'we have local digital contents produced in Amharic, like basic computer training, e-books, videos and interactives'. A manager working in Zambia explained: 'all the iSchool online content is being pro-

Are respondents involved in creating content in indigenous African languages?



- No68%
- Yes16%
- I don't know.....6%
- N/A.....10%

duced in the seven main Zambian local languages [Silozi, Nyanja, Bemba, Citonga, Lunda, Luvale and Kikaonde]. I create lesson plans in all the seven local languages as well as content for the lessons.' Similarly, a government

worker in Cameroon indicated that they produce content targeted at adult women in the Lamso, Kom and Nkwen languages. The theme of local content based on agriculture was emphasised again by a government worker in Zambia who explained that they produce 'agricultural information products ... in areas of crop and livestock production, processing, storage and marketing' in the Luvale language.

Those who responded that they are not involved in the creation of digital content in indigenous African languages emphasised reasons including a belief that content in indigenous languages is not necessary, a recognition that their official language is not an indigenous African language, the fact that they do not have the internal capacity to develop content in indigenous languages and that policy dictates that they teach in English.



Photo: Rudi Dundas, Tanzania, "Singisi coffee farmers use iPads in their export business"

Comics for Peace – Shujaaz and the Kenyan Elections

On March 4, 2013, Kenya successfully and peacefully held a historic election, the first one after the inauguration of the ambitious democracy-protecting Constitution of Kenya 2010.

In the run up to the elections, multi-media communications company, *Well Told Story* [WTS], was approached by the Independent Elections & Boundaries Commission (IEBC) and the Kenyan Ministry of Education to create a campaign that would engage school children in the election process.

Well Told Story is the social enterprise behind the award winning multi-platform production *Shujaaz.FM*. *Shujaaz.FM* tells educational, change-focused stories on multiple platforms (comic books, syndicated FM radio, SMS, social media, web and video animation) to youth across Kenya.

It was the immensely popular Shujaaz characters and brand that the IEBC wanted to use to speak directly to Kenyan youth about the elections. WTS created a special campaign called 'Apisha Paro' [meaning 'Parents' Pledge'] to empower children



ShujaazFM hero & pirate radio host *DJ B* challenges the youth of Kenya to ensure the coming elections will be successful...

He also asks them to show their parents the ballot papers to ensure they are informed when they turn up to vote.

to assist in the peace process. The idea behind the campaign was that the elections matter to children, even if they cannot vote. They are the ones who suffered in the post-election violence of 2008 and, as a result, they want to be able to do something to prevent it happening again. They too needed to be empowered to ensure the outcome of the elections is peaceful and successful.

In 'Apisha Paro', Shujaaz.FM hero DJ B challenged every school child to get five adults in their home to pledge that they will to

turn up and vote in the elections (if registered) and to accept the results peacefully. Once they had all five signatures, they returned their forms to school where they have the chance to win prizes.

The campaign was launched on various platforms:

- 9.5 million special comics that were given to every primary school child in Kenya. An additional 850,000 Shujaaz.FM comics also featured the pledge.

DJ B asks every child in Kenya to find 5 adults to take and sign the pledge.

They are encouraged to return their completed forms to their schools with the chance to win some great prizes!

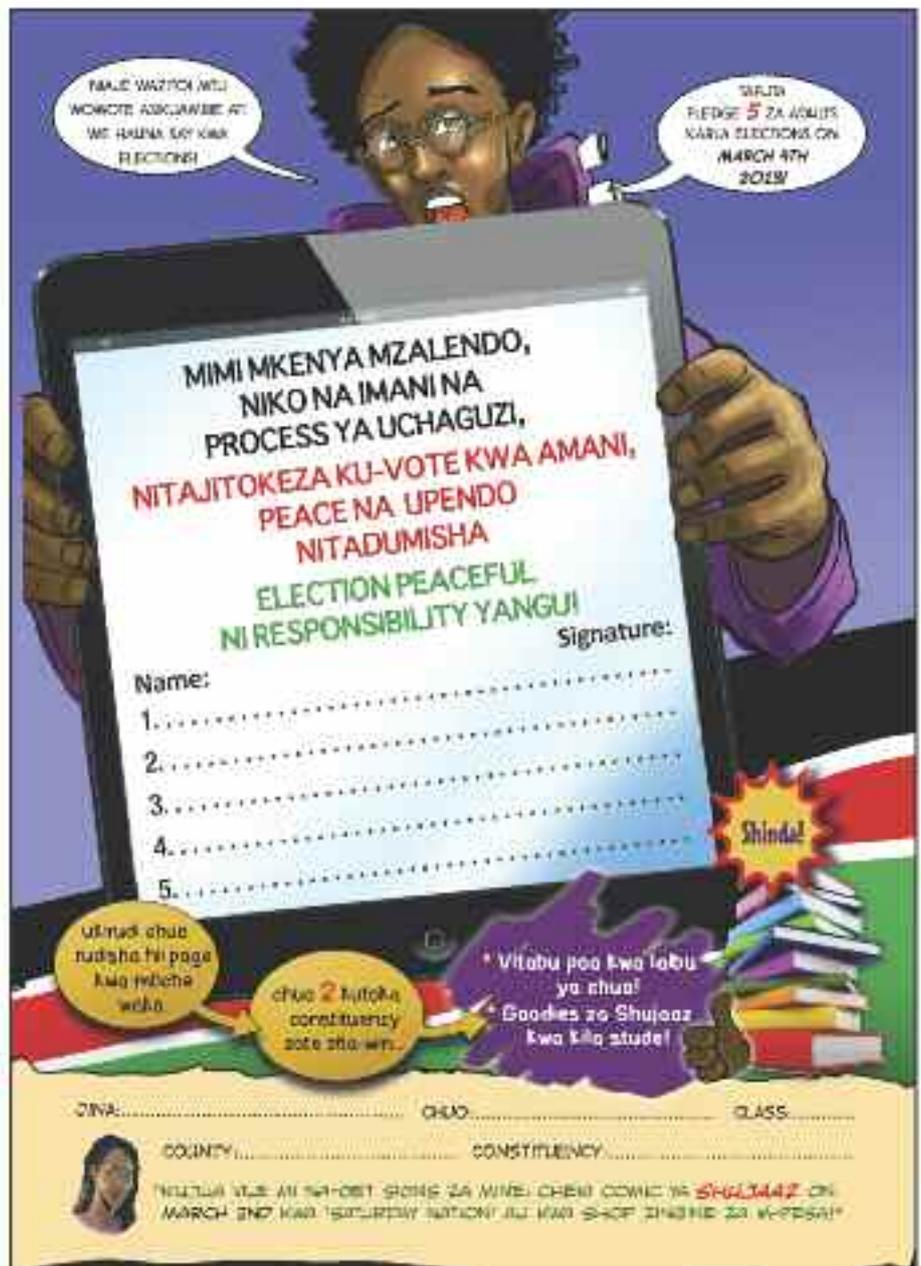
THE PLEDGE:

I'm a patriotic Kenyan

And I have faith in the election process.

I will come out to vote and will maintain peace and love.

A peaceful election is my responsibility!



- A facebook page that would to appeal more directly to secondary school students(www.facebook.com/Apisha Mabeste). Fans of the page were invited to send photos of themselves pledging.
- An animation was broadcast every day for a week on three national television stations.
- The animation was circulated on You Tube (<http://youtu.be/BNQJlcpodFs>)



Young Kenyans participating in the Shujaaz campaign: pledging to vote and accept the results peacefully.



Charlie Pele has the weight of the world on his shoulders. He confides in his best friend Rosie...

"It's the elections on Monday and I'm so afraid that it will be the same as last time. I'll lose my home, my friends, everything. And there's nothing I can do about it."

Rosie excitedly tells him that there is something young Kenyans can do to make sure the elections are peaceful!

She tells him about DJ B's challenge!

Rosie shows Charlie the flyer - she's already got 5 pledges!

Charlie is inspired and they rush off to get more signatures!

- The call to action was broadcast every day for a week on 26 FM radio stations.

‘Apisha Paro’ was received with enthusiasm as it provided children with an opportunity to directly participate in preserving peace and the rule of law. Speaking during the launch of the campaign, IEBC Commissioner Yusuf Nzibo said the purpose of the Sh14.2 million (US\$ 170,00) campaign was ‘to turn school children into peace ambassadors in the communities they live as they encourage their parents to commit to the promotion of a peaceful and participatory electoral process’.

This was not the first education-focused campaign for Shujaaaz.FM. Previously, the comic has addressed issues such as teacher absenteeism, how to avoid and report sexual abuse from teachers, how to improve safety in your school and how to address tribalism in schools. All Shujaaaz.FM campaigns are run on multiple platforms to ensure the target audience is reached. Rob Burnet, director of Well Told Story says: ‘It is the combination of the Shujaaaz.FM comic books, syndicated FM radio, SMS, social media, web and video animation in engaging five million youth every month in a huge public conversation that is helping to change the way people live, think, act and govern in Kenya.’

Charlie and Rosie collect signatures from adults who agree to take the pledge.

They visit the local witchdoctor who is about to sign when Charlie's dad turns up to ask the witchdoctor to help him prepare a curse against the political party he wants to lose.

Much to Dad's surprise the witchdoctor gives him a stern talking to;

"It's people like you who nearly destroyed our country in the last elections - you should be ashamed of yourself! And you should be afraid... People caught causing unrest will be treated very seriously this time, it says so in our new constitution!"

Charlie tells his Dad that the witchdoctor is right... He doesn't want his Dad to go to jail, he wants him to take the pledge.

A chastened dad apologises to his son and promises to accept the results peacefully!



“No country can make progress on the basis of a borrowed language”

Professor Kwesi Prah, interviewed by Alicia Mitchell

Professor Kwesi Kwaa Prah is the founder of the Centre for Advanced Studies of African Society (CASAS), a civil society, Pan-African organisation which focuses on African development through the lens of cultural, social, historical, political and economic research. Currently, through the CASAS Harmonization and Standardization of African Languages Project, Professor Prah and CASAS are working towards improving African literacy rates. By forming standardised groupings of mutually intelligible African dialects, Prah hopes to overcome not only the local linguistic barriers created by the diversity of African dialects, but also to finally break down the far more divisive borders that are maintained by the pervasive grip of post-colonial languages across the Continent.

Speaking to me about his work with language and education from Cape Town, Prah asserts that questions of relevance when speaking about the local languages of Africa are themselves irrelevant. “Every language is important. Icelandic is important. Italian is important. Greek is important. Could you ever ask someone from one of these countries whether the language they speak is important? In the same token, African languages should be allowed to flourish. We do not talk about the ‘indigenous languages’ of France, Slovakia or the Czech Republic, so why do we insist on speaking in these terms when it comes to Africa?”

Despite both national and international focus on literacy and

education in Africa, in part driven by the soon-to-expire Millennium Development Goals, the resulting programmes and policies are all too often delivered in the languages of former colonial powers – particularly English, French and Portuguese – at the cost of excluding the majority and those most in need. “No country can make progress on the basis of a borrowed language, understood only by a minority,” says Prah, “Only ten per cent of African people can speak French, Portuguese or English fluently. These languages cannot be the only languages of African development.”

The problem is not merely one of shaking off the remnants of the past, but of convincing those within every level of African society that undermining the status of African languages serves the interests of no one. “It’s not just a question of Western arrogance,” explains Prah, “but also of African complicity. The cultural power of the African elite is based on the fact that they are proficient users of post-colonial languages. They instil a new colonial order which excludes the majority from the structures of power.” Prah has found some governments to be supportive of his work with CASAS, but overall there has been little official recognition.

However, he suggests that even those in positions of power are allowing themselves to be limited by the same colonial hierarchies of the past. “They are second-hand users of these cultures.



Photo: Vera Obiakor, Nigeria, “Under the tree we work”



Photo: Fasil Damte, Ethiopia, "Child parliament member taking photos"

Therefore, they are actually positioning themselves as inferiors. This can lead to a bottle-neck of tension that can explode."

As an inspirational example for African countries to follow, Prah points to Vietnam and their Southeast Asian neighbours Malaysia and Indonesia. "Vietnam is one of the fastest growing economies in the world. They stopped using the language of their French colonisers: this is precisely why they are succeeding."

Language, education and, with the ongoing growth in ICT-supported learning, technology are co-agents of change with huge potential. However, Professor Prah notes that with the current default to post-colonial languages in the majority of education 'solutions' brought to the Continent, ICT and education remain inaccessible to the overwhelming majority: "Education is still a privilege of the westernised elite. We talk about development through education and training, but in whose language?"

The knee-jerk response to arguments like these is often that the investment and technology for these ICT products comes from abroad – from the United States, from Europe or Asia – and using 'international' languages such as English or French are the only economically viable options, but Prah disagrees. "Some African languages are spoken by fifty or sixty million people. It makes economic sense to develop products for this market, by this market." If we continue to pretend that African languages are unimportant in the drive to achieve 'education for all', says Prah, "we will forever be waiting for 90% of Africans to become English!"

Despite the enthusiastic work of organisations such as CASAS,

Prah admits that the movement to champion African languages as a path towards progress is still in the "very initial, half-hearted stages; it is not happening yet". However, he confidently points to the historical precedent that proves that the democratisation of language is a necessary precursor for the democratisation of society. "For as long as Europe used Latin as the language of authority and academia, knowledge was in the hands of monks, aristocrats and scholars. It is only the common languages – the languages of the street – that can lead to democratic progress. Similarly, for as long as ICTs in Africa are based solely around English, French and Portuguese, we will not get anywhere." Knowledge is power, and language is the fundamental component of knowledge acquisition and dissemination.

The key message that Professor Prah is determined to share with governments, investors, development organisations and the world at large is a simple one: for as long as Africans are supposed to use languages that are not their own, no progress will ever be made. "ICT is enormously important – it is moving the world forward and of great intellectual interest – but without African languages, we cannot make a difference to Africans. You cannot lift Africa without African languages."

Professor Kwesi Kwaa Prah founded The Centre for Advanced Studies of African Society (CASAS, casas.co.za) in 1997. CASAS acts as a research network within Africa and amongst the African diaspora. The organisation focuses on "cultural issues and their relationship to development, and selected basic research on the structure of African society". In recent years, the focus of CASAS on African languages has led to the production of various publications, including dictionaries and research papers focusing on diverse African languages.

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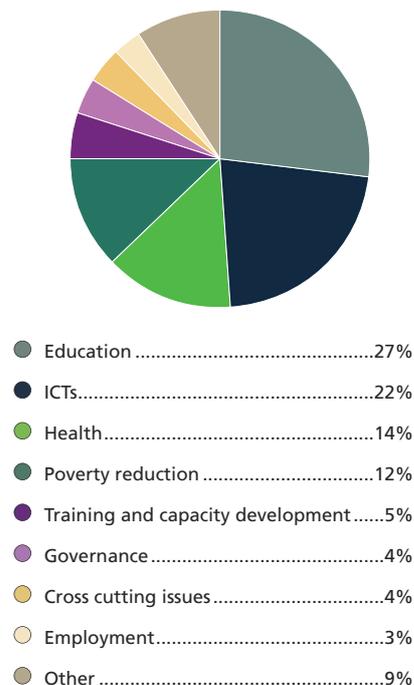
5. The Future of Development

The eight Millennium Development Goals have formed the overarching framework for international development since the year 2000. The goals are focused on 2015 and, as this year approaches, debate is intensifying regarding what constitutes the most appropriate ‘post-2015’ priorities. The conversation is engaging governments, policy makers, academics and activists - and everyone can contribute by telling the UN their personal priorities at www.myworld2015.org (United Nations, 2013). *eLearning Africa* supports the inclusion of the voices and perspectives of the African eLearning network as future priorities are being shaped. In light of this, respondents were asked what they consider to be the three top-priority issues regarding human development in Africa that the global development community should commit to after 2015. Building on this general question, the survey asked specifically what respondents consider to be the three priority issues related to the use of learning technologies in Africa.

Future Priorities in International Development

Respondents to the survey consider the top three priorities for international development to be education (27%), followed by ICTs (22%) and health (14%). Within the 9% section of the pie chart labelled as ‘other’ are environment, water and sanitation, youth (each c.2%) and agriculture, food security, gender, peace and security (each c.1%). An additional set of responses, constituting 6% of the original total, were removed from this analysis as they referred to multiple issues or were things that could not be categorised. Within education, the same priorities were regularly repeated: universal access to good quality education, provision of effective training, and ensuring attention is given to all levels and to promoting lifelong learning.

What are the most important overall priorities for the post-2015 international development agenda?



How Technologies Can Help with Investing in Girls Education

Maureen Agena

Because of the many educational barriers faced by a typical girl child in Africa, it seems that promoting girl child education using technology in Africa is currently more of a fantasy than a day-to-day reality. Over the past few years, it has become evident to many governments that while it is important to educate boys, it is equally vital to invest in the education of young girls and as such, there has been a rise in the number of girl children at primary, secondary and tertiary levels.

“The state of girls’ education has improved significantly over the past decade. However, girls continue to lag behind their male counterparts in many areas of the world, in terms of access to education, completion of schooling, and acquisition of basic skills such as literacy” (World Bank, 2011). According

to research undertaken by the World Bank, around 106 million children were out of primary school in 1999. Almost 61 million (58%) were girls compared to 45 million (42%) boys. By 2009, around 35 million girls were still out of school compared to 31 million boys. Although the gap in gender parity has decreased substantially, there are still many more girls out of primary school than boys (World Bank, 2011).

Gender equality is a basic human right enshrined in the United Nations Charter. In the year 2000, at the United Nations Millennium Summit, the Millennium Development Goals were established and signed by 189 heads of state around the world: a list of eight overarching goals for developing countries to achieve by 2015 was outlined. Within this list, Goal 3a sought to ‘eliminate

nate gender disparity in primary and secondary education, preferably by 2005, and at all levels by 2015'. Indicator 9 of this goal was to measure the promotion of gender equality and empowerment of women, in the ratio of girls to boys in primary, secondary and tertiary education. However, the targets set by MDGs and other global forums have largely been missed on the African continent, partly because in sub-Saharan Africa the number of out-of-school girls has decreased more slowly, from 25 million in 1999 to 17 million in 2008, according to the World Bank (2011).

For many years, the education of the girl child has not been a priority in many parts of the developing world because of a number of reasons, including cultural, biological and social. This disparity has been reflected in areas of politics, leadership and business which have for many years, with some recent changes, been dominated by men.

The birth and rise of new media is, however, changing the story for many girls in Africa who have been given an opportunity to compete with their male counterparts. A new generation of girls using technology to change their story is being born. An example from Uganda is the GirlGeekKampala (girlgeekkampala.com), a group of young enthusiastic girls who have come together to encourage the culture of programming among female university students all over Uganda. Their goal is to facilitate favourable competition in developing applications for sale, to match their male counterparts.

Similarly, in South Africa, ShetheGeek (shethegeek.co.za) is on a mission to empower women globally through training with technology and innovation. In Kenya, a fast growing technology

base within East Africa, the school of Open Kenya initiative is creating positive impact and changing mind-sets (Creative Commons Blog, 2013). The initiative provides girls with peer mentorship, learning through the use of open educational resources, and using the Internet to objectively achieve their goals and actualise their ideas, while actively solving issues in their communities. Beyond individual efforts of girls trying to help fellow girls, institutions such as the International Telecommunications Union (ITU) strive to improve access to ICTs to underserved communities worldwide. Access to ICTs, the United Nations says, empowers women and girls to take their rightful place as equals in the world.

It is evident that investing in a girl child's education is empowering a girl to make informed decisions about her life, to aspire for greater goals in life beyond marriage and to compete favourably with her male counterparts in politics, business, leadership and other fields, with one main goal of creating positive social change and contributing to the development of her society or nation. It is therefore important for leaders to encourage the culture of tolerance and acceptance in men, of women who break even in politics and other male dominated professions, and cease to look at them as competitors or threats, but rather as companions and team players in achieving a better good for society.

Maureen Agena is a Ugandan blogger, a trained citizen journalist and currently a trainee at CTA in the Netherlands in the "policies, markets and ICT programme". She has been working in ICT4D fields for the last 5 years and specifically on the socio-economic empowerment of women and girls.

Those who identified ICT as the top priority gave reasons similar to those explored below in relation to the technology-specific priorities. The prominent issues were ensuring that technology is increasingly affordable and accessible to all, that sufficient investment is given to the infrastructure supporting technology, that training is provided in how to make effective use of technology and that sustainability is prioritised throughout. The third group, identifying health as the top priority, gave reasons focussed on general improvements, fighting major diseases, improving nutrition and ensuring progress in maternal and child healthcare.

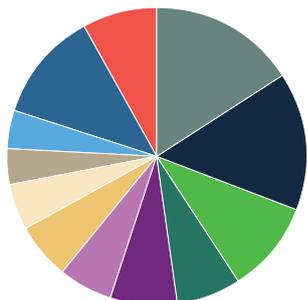
The reasons respondents gave for these for three priorities were interlinked and diverse. Within the minor categories of responses there was a particularly strong linkage between the issues of youth and employment, with the oft repeated priority of creating jobs and providing employment. As noted by a male respondent working for the government in TVET in Liberia, it is the nature of the available jobs that constitutes the key fact, with entrepreneurialism needing to play a significant role in the future: '*Africans should be taught how to create jobs and not to rely on others to make jobs for them*'. There was also a strong and anticipated link to the current MDGs, and this is

explored in more detail in the following section of analysis.

It is not surprising that respondents to the survey consider education to be the top priority for international development. However, it is noteworthy that this perspective reflects the same top priority for international development as the global community (as defined by the ongoing survey www.myworld2015.org) which places education as the top priority, followed by healthcare, and good governance ('an honest and responsive government'). Regardless of other outcomes, we can be hopeful that such a powerful endorsement of the importance of

education will attract the attention of both national and international donor financiers.

What are the most important technology-specific priorities for the post-2015 international development agenda?



- The use of ICTs in education 16%
- Training in the use of ICTs..... 15%
- Bandwidth..... 10%
- Provision of hardware 7%
- Access 7%
- Electricity..... 6%
- Infrastructure 6%
- Content development 5%
- Government and policies 4%
- Funding and finance 4%
- General responses..... 12%
- Other 8%

Technology-Specific Priorities in International Development

As demonstrated in the pie chart above, the most popular three groups of responses regarding the most important technology-specific priorities for the post-2015 international development agenda are the use of ICTs in education (16%), training in the use of ICTs (15%) and bandwidth. The 8% in the 'other' category represents: use of mobiles (c.2%), security (c.2%), ICT and health (c.2%), provision of software (c.1%) and sustainability in use

of ICT (c.1%). An additional set of responses, constituting 21% of the original total, were not relevant answers as they were non-technology based. These responses have been excluded from the analysis.

Within the largest group, focusing on the use of ICTs in education, respondents identified diverse priority issues such as 'MOOCs and Open Educational Resources', one-to-one computing', 'widespread access to learning technologies' and 'enhancing digital literacies'. Some suggested that the priority is to use ICTs to catalyse radical changes

in education, such as one female respondent working in higher education in Swaziland, who stated: '*... if people are able to access resources and learning strategies and learn independently, many of the other resources will not be needed in the form they exist today – such as classrooms and the physical presence of teachers*'. Others advocated a more integrated response, noting the need for focusing on the marginalised. This was exemplified by a male respondent working in Zambia for a private TVET organisation. He argued: '*Rather than concentrating on providing cutting edge technologies on*



Photo: Marko Hingi, Tanzania, "Global health club outreach"

selected projects and initiatives that benefit a few, we should first consider the many who do not even have access to intermediate technology in the classrooms. Let us strive to provide more widespread and easily accessible learning technologies to benefit the many learners who do not have such access at present ... there needs to be a concentrated effort to ... produce a clear analysis of practical learning technology needs, however basic.

The second group, which identified 'training in the use of ICTs' as the top priority, provided relatively consistent responses. Within this group the main theme was the need for widespread and targeted training in order to build capacity to make effective use of the technologies that are available. The main threads were the need for 'easy access to training on new ICTs', as noted by a female respondent working for an NGO in informal education in the DRC, and the need to train and equip a range of stakeholders including teachers, administrators and society at large. One female respondent working

in TVET in Namibia noted specifically the need to 'train teachers to be able to manage and offer trainings'. Some identified 'training at the grassroots' and others emphasised 'training for experts'.

The third group identified 'bandwidth' as the top technology-related priority. Few respondents offered a lengthy explanation for their selection, but the recurring themes were the need for Internet access to be faster, cheaper, more widespread and more reliable. A recent publication by a Swedish agency noted that 'affordable broadband for all' must be a key component of the post-2015 agenda and that 'there is no point in talking about ICT4D unless the basic infrastructure is in place. Broadband is the only democratic option for digital inclusion' (Spider, 2013:2). This third group can be extended to also include the 6% of respondents who identified provision of electricity as the top priority. This overarching group with 16% of responses (bandwidth and electricity combined) can be understood as priorities related to the supporting infra-

structure for effective access to and use of technology.

A final group of respondents identified the top priority for post-2015 as learning from the Millennium Development Goals and calling for a change in approach regarding the way in which technology is used within international development. This is exemplified by one respondent who asserted: *'The first priority is to not toss out the 2015 MDGs, but to look at what has been learned about the adequacy of the goals, as they influenced action, and the lessons to be learned from those actions in terms of their support for MDG outcomes'*. This respondent, working for an NGO in South Africa, continued by articulating the need for a shift in approach: *'Look at people, especially the poor and the rural, and understand what can be done with them within the context in which they actually live. Too much of the time there is high level buy-in to schemes that look good on the surface but are assured to fail. An example is how the _____ project started with a plausible idea (computer assisted learning) and executed it in a way that was virtually assured to fail. This was known in advance, but Ministries allowed themselves to be seduced by the promises of the providers, and never listened to the wants and needs of teachers and students.'*

This analysis provides unique insight into the technological development priorities of a growing eLearning network in Africa. Here there are three overarching priority areas that **combine education, training and infrastructure (bandwidth and electricity)**. This provides valuable insight, for stakeholders involved in decision making, about the future use of digital technologies in development. It suggests that investment should be focused primarily on securing the infrastructure and training to support the delivery of education.



Photo: Uche Uwadinachi, Nigeria, "Girl makes online enquiries about products in a street shop"

6. Conclusions and Recommendations

The eLearning landscape is experiencing tectonic shifts that are catalysed by fast-changing digital technologies. In an attempt to illuminate the way in which these changes are influencing learning and teaching in African classrooms, workplaces and communities, *The eLearning Africa Report* has tapped into the views of those who are at the forefront of these changes. This helps with understanding, from the perspective of practitioners, how traditional educational practice is changing, how these changes are perceived and managed and how future changes may unfold.

In this sense, *The eLearning Africa Report* hopes to offer one mechanism through which the 'wisdom' of the eLearning 'crowd' in Africa is being sourced. Evidently, the findings from this report stem from a 'crowd' that is highly educated relative to the broader African population; that is active in the education and skills development sector; and one that is very active in their exploration of digital learning technologies. The views expressed are those of people who are indeed active participants, front runners, champions and pioneers in the African eLearning space.

Despite their position as front runners, not all respondents engage with the most advanced learning technologies, a fact that is evident from the survey results revealing the limited use of PC tablets in learning at the time of the survey, compared to laptops and mobile phones. This may indicate that the integration of digital technologies in African learning environments is still an emerging process. Perhaps we will see different emphases emerging in 2014?

The dominant views held by respondents are unsurprisingly positive and optimistic. The collective expression is one of growth and progress in the diffusion of digital technologies for learning in Africa. Many respondents express positive learning experiences and an

enthusiastic optimism towards the possibilities and new prospects that digital technologies open up. However, the conversations regarding the benefits of mobile technologies and social media could benefit from more sober reflection on the risks for learning that these new possibilities pose.

The dominant views also reflect a positive shift towards a stronger 'Africa can' attitude, along with a stronger sense of local ownership and entitlement. This is evident from the views and attitudes expressed with reference to creating locally-produced digital content and in the expression of one of the interviewees who encapsulated the sentiment with one statement: 'we are tired of aid'.

It is encouraging to note the openness with which the conversation on failure in eLearning has been embraced by respondents. This highlights the prospect of deepening this conversation, as part of the endeavour to become a more reflective, open-minded and learning network of practitioners who are committed to improving practice. Such an approach is more likely to have a positive impact on the design and practice of eLearning in Africa.

The clear priorities for a post-2015 development agenda focus on education and ICT, with an emphasis on the technology-specific priorities of ICT in education, training and infrastructure. This reflects the continuing reality that Africa still needs to focus on improving the basics: developing enabling infrastructure, growing skills and capacity, and improving education through the integration of digital technologies.

A number of issues did not feature as strongly this year as they did in 2012. For instance, in 2013 there has been less of a focus on Early Childhood Care and Education (ECCE) and rural education. However, similarly to last year,

assistive technologies and their potential to support special needs education did not feature at all except for a reference by one of the report interviewees. Furthermore, other than widespread anticipation of the potential of MOOCs to bring about a significant change over the next five years, the limited references to actual experiences of MOOCs by respondents perhaps shows that the phenomenon is still in its infancy in Africa. Similarly, whilst reference is made to the ubiquitous use of mobile technologies and social media by respondents, less is known about how these are integrated in classroom practice, how they facilitate the learning experience and how they are enabling the emergence of new ways of learning.

Furthermore, the predominance of those who are active in eLearning in Africa overshadows potential voices that are more conservative, less engaged and less experienced with digital technologies. The latter may well constitute a conservative majority among whom the eLearning conversations are not yet mainstreamed. Many such conservative voices may well reside in the decision-making echelons of education and training institutions in Africa.

It is therefore recommended that future *eLearning Africa* surveys consider triangulating the survey data with more interviews and opinion pieces not only of experts and pioneers in ICT for development or eLearning, but also among those who may not yet be convinced. Here the views of the less technologically-savvy such as parents, teachers and government officials, may be worth considering. In this way, the survey and report will continue to provide thought leadership in the education and skills development sector, by engaging with a wider breadth of public opinion.

Bibliography

- Aldrich, C. 2000, cited in: Barron, T., A Smarter Frankenstein: the Merging of ELearning and Knowledge Management. www.learningcircuits.org
- Au, K. 1998. Social constructivism and the school literacy learning of students of diverse backgrounds. *Journal of Literacy Research*, 30, 2, 297-319
- Barron, T. 2000. A Smarter Frankenstein: the Merging of ELearning and Knowledge Management. www.learningcircuits.org
- Bilinovac, D. 2010. ELearning as a Tool for Knowledge Management. Paper presented at 14th International Research/Expert Conference: Trends in the Development of Machinery and Associated Technology TMT 2010, Mediterranean Cruise, 11 – 18 September 2010, 381-384.
- Bloom, N., Genakos, C., Sadun, R., and Van Reenen, J. 2012. Management Practices across Firms and Countries, *Academy of Management Perspectives*, February 2012.
- Bloom, N., Eifert, B., Mahajan, A., McKenzie, D., and Roberts J. 2012. Does management Matter? Evidence from India. *Journal of Economic Literature*, August 2012.
- Bosch, T., 2009. Using online social networking for teaching and learning: Facebook use at the University of Cape Town., in *COMMUNICATIO* Volume 35, 2, 2009, 185–200. UNISA Press: South Africa, Routledge
- Butcher, N., and Hoosen, S. 2012. Exploring the Business Case for Open Educational Resources. COL. September 2012. <http://bit.ly/OfYdIA>
- Butler, M., and Davis, H. 1992. Strategic Planning as a Catalyst for Change in the 1990s. *College and research libraries*, 53, 5, 393-403.
- Canady, R. and Rettig, M. 1995. Block scheduling: A catalyst for change in high schools Vol. 5. Eye on Education.
- Clark, D. 2003. Knowledge Management and eLearning – An EPIC White Paper. Cited in: Dunn, P and Illif, M. 2005. At Cross Purposes Why eLearning and Knowledge Management don't get along In: ELearning and Knowledge Management. Learning Lights, 2005. www.learninglight.eu
- Coetzee, J. 2012. 4 inspiring tablets from Africa for Africa. Gearburn <http://gearburn.com/2012/08/4-inspiring-tablets-from-africa-for-africa/>
- Creative Commons 2013. School of Open Kenya Initiative, Creative Commons blog. March, 2013. <http://bit.ly/Ymtckv>
- Czerniewicz, L. 2012. Critical content and communication capabilities: foundational for African education in a digitally-mediated age. In Isaacs, S. and Hollow, D. (eds), *The eLearning Report 2012*, ICWE Germany.
- Deloitte and GSMA, 2012. Sub-Saharan Africa Mobile Observatory 2012, GSMA.
- Drucker, P. 2003. The Next Society. *The Economist*, Nov. 2001. www.economist.com/node/770819
- Dunn, P. and Illif, M. 2005. At Cross Purposes Why eLearning and Knowledge Management don't get along In: ELearning and Knowledge Management. Learning Lights, 2005. www.learninglight.eu
- FAO, 2004. ABC of Knowledge Management www.fao.org/fileadmin/user_upload/knowledge/docs/ABC_of_KM.pdf
- Global Partnership for Education, 2013. www.globalpartnership.org/our-work/areas-of-focus/out-of-school-children/
- Hinostroza, J. E., Isaacs, S., and Bougroum, M. 2012. Information and Communications technology for improving students' learning opportunities and outcomes in developing countries. In: Background Papers for the Research Task Force on Learning, Brookings' Center for Universal Education, Global Compact for Learning, Brookings Institute, USA
- Hoosen, S. 2012. Survey on Governments: Open Educational Resources (OER) Policies. COL, UNESCO. June 2012. <http://bit.ly/MYzv9j>
- Kelly, T. and Bauer, D. (2004). Managing Intellectual Capital - via ELearning - at Cisco. www.iwp.jku.at/born/mpwfst/03/0310adciscoch56.pdf
- Matzen, N. J., and Edmunds, J. A. 2007. Technology as a catalyst for change: The role of professional development. *Journal of Research on Technology in Education*, 39, 4, 417.

McDonald, H., and Ingvarson, L. 1997. Technology: A catalyst for educational change. *Journal of Curriculum Studies*, 29, 5, 513-528.

Ras, E., Memmel, M., and Weibelzahl, S. 2005. Integration of eLearning and Knowledge Management – Barriers, Solutions and Future Issues. In K.D. Althoff, A. Dengel, R. Bergmann, M. Nick, and T. Roth-Berghofer (eds.), *3rd Conference Professional Knowledge Management - Experiences and Visions, Lecture Notes in Computer Science*, 155-164, Berlin: Springer.

Research ICT Africa, 2012. Internet Going Mobile. Internet Access and Usage in 11 African Countries, RIA Policy Brief No 2, 2012, RIA, South Africa

Ross, H., and Clifford, K. 2002. Research as a catalyst for change: the transition from student to Registered Nurse. *Journal of Clinical Nursing*, 11, 4, 545-553.

SPIDER, 2013. Digital Inclusion. A Swedish Post-2015 ICT4D Agenda

UIS, 2011. Global Education Digest, Comparing Education Statistics across the World. www.uis.unesco.org/Library/Documents/global_education_digest_2011_en.pdf

UNESCO, 2011. Turning On Mobile Learning in Africa and the Middle East. Illustrative Initiatives and Policy Implications. UNESCO, Paris, France

United Nations, 2013. My World. The United Nations global survey for a better world. www.myworld2015.org

Ventureburn, 2013. BuzzCity CEO on the rise and future of Africa's mobile marketplace <http://ventureburn.com/2013/02/buzzcity-ceo-on-the-rise-and-future-of-africas-mobile-marketplace/>

Verster, M. 2010. Facebook for Teaching and Learning, April 21, 2010 <http://maggiev.edublogs.org/2010/04/21/facebook-for-teaching-and-learning>

Vygotsky, L. 1978. Interaction between learning and development. *Readings on the development of children*, 34-41.

Wood, D. 2007. Teachers' learning communities: catalyst for change or a new infrastructure for the status quo? *The Teachers College Record*, 109, 3, 699-739.

World Bank, 2011. The State of Girls' Education <http://go.worldbank.org/RDRAMUGPO0>

World Bank, 2011a. The EdStats Newsletter, The World Bank. Volume V, issue 1. August, 2011. <http://bit.ly/R29C5L>

World Bank, 2012. The transformative use of Information and Communication Technologies in Africa. www.infodev.org/en/Publication.1162.html

World Bank, 2013. Data: sub-Saharan Africa <http://data.worldbank.org/region/SSA>

World Wide Worx, 2012. The Mobile Internet in South Africa, World Wide Worx, South Africa.

Appendices

Appendix 1. Methodology

The conceptual framework for the *eLearning Africa Report 2013* and associated survey is grounded in a critical, realist approach which recognises that realities are complex – that we have partial perspectives on these realities – and that a better understanding of these realities emerges if research, experiences and practices are shared. To improve our understanding, we consider the contexts, views and experiences of a range of stakeholders who experience eLearning from different, albeit limited, vantage points. This survey and report seek to uncover the experiences and insights of African practitioners by contributing towards an emerging understanding of the relationship between technologies, socio-economic and cultural change and the effects on learning, teaching and skills development.

In light of this, the primary purpose of *The eLearning Africa Report 2013* is to produce actionable knowledge that can service a wide range of actors in the African eLearning system. Actionable knowledge is context-specific and premised on problem-solving within given social realities. Whilst recognising the value of developing abstract theory, the focus of the report is on producing knowledge in order to improve practice, reflecting the priorities of the practitioners, investors and policy makers who are major stakeholders in a growing *eLearning Africa* network. The qualitative analysis of the survey findings that inform the report is influenced by a grounded theory of methodology, which is focused on producing knowledge that is situated in specific contexts and premised on a range of stakeholder interpretations of their circumstances.

Whilst a large-scale survey is our dominant data-gathering instrument, the methodology also includes interviews with innovators and champions and

opinion pieces by experts who are involved in the eLearning terrain. These opinion pieces are intended to provoke further conversation and debate as well as add qualitative insights to the data provided by the survey. Similarly, the comic strip produced by Shujaaz highlights the innovative ways in which new media is being used for communication in African indigenous languages. The report also includes a range of photographs from the *eLearning Africa Photo Competitions* (which can be viewed at www.elearning-africa.com/photo_competition_home.php), illustrating a range of personal perspectives on how digital technologies are integrated into the learning lives of African communities. Using mixed methods in this way allows us further diversity of insight and serves to verify, reinforce, challenge or potentially refute the findings of the survey.

It can be expected, given the profile of the survey respondents and their active involvement in the use of learning technologies, that the majority will be positive about their effects on learning outcomes. It remains important to be conscious when interpreting the findings that they are not necessarily reflective of the generalised views held by those involved in education and learning across Africa.

eLearning Africa is committed to investing in developing our collective understanding over time. Core to this endeavour is building a cumulative body of knowledge through this report, the conversations before, at and after the *eLearning Africa* conference and on the *eLearning Africa News Portal*. The Survey 2013 and report build on the experience of 2012 by repeating selected survey questions to enable comparison of findings between the two years. It is anticipated that, over time, the patterns of views and inter-

pretations that emerge will contribute to improved learning, understanding and practice within the eLearning community in Africa.

The eLearning Africa Survey 2013

The core analysis of *The eLearning Africa Report 2013* is based on the findings of *The eLearning Africa Survey 2013*. This survey was distributed by *eLearning Africa* and was open to respondents between 28 January and 20 February 2013. The survey was distributed by email to 81,000 participants on the *eLearning Africa* mailing list. The mailing list includes a wide range of stakeholder groups including teachers, lecturers, post graduate students, researchers, scholars, government officials, managers, senior executives of big and small companies and CEOs of NGOs who are invariably engaged in the eLearning space.

The survey was also promoted through Facebook, Twitter and LinkedIn, and could be filled in with an online survey form or an offline PDF. A total of 826 survey responses were received, of which 413 were fully or near-fully completed responses. The survey asked 60 questions, of which 30 were closed questions and 30 were open questions. A detailed summary of the survey can be viewed in Appendix 1. The overall statistics and qualitative analysis is based on the data from these 413 survey responses.

Survey responses came from 69 different nationalities, with respondents working in 42 different African countries. 80% of the responses were from people with an African nationality. An analysis of the profile of respondents is provided below. The closed



Photo: Stephen Oluoch, Kenya, "Members of the 'Tiwi Massive' youth group using a laptop to access information"

questions were processed through quantitative analysis and are presented as percentages.

The majority of respondents were contacted through the *eLearning Africa* mailing list where respondents had the option to click on a URL which leads to an online survey questionnaire. Conducting a pan-African survey online limits the potential respondents to those who already have access to the Internet. Allowing respondents the option of responding to a questionnaire which could be sent to them in PDF format was one attempt at addressing the challenges of limited bandwidth.

This sampling strategy should be remembered when reading the report and reflecting on the implications of the findings. It is important to highlight the fact that the demographic of the respondents is not in any way representative of the African population in general, nor necessarily of all role players in the education and learning sector in Africa.

Processing the Survey's Qualitative Data

The qualitative data is characterised by responses to open questions, as opposed to multiple-choice closed questions contained in the survey. The open questions focus on respondent

perspectives regarding the most significant eLearning developments in Africa over the past five years and looking towards the future, key challenges and constraints, drivers of change, experiences with failure and the reasons for choosing certain priorities for the post-2015 development agenda. These responses were consolidated in a spreadsheet and were systematically coded in accordance with the country, type of organisation and level of education where respondents' work is focused. Where responses were supplied in French or Portuguese, these were translated into English and then coded accordingly. The codes were clustered based on the similarity of ideas and themes. In this way, between six and seven overarching and inter-related core categories emerged within each section of qualitative analysis. The analysis provided in the report addresses the inter-relationship between these core categories.

In order to maintain the integrity of the qualitative data, the report's analysis is illustrated with verbatim quotes from respondents.

Research Limitations

The coding methods used to process the qualitative data are subject to the researchers' interpretation of the data and the inherent biases therein. To m

imise such biases the researchers consulted popular and academic literature, assigned opinion pieces to a range of eLearning experts and established an Editorial Board of ten representatives from diverse linguistic and cultural backgrounds, mainly from Africa.

Definitions

Much of the conversation about the integration of digital technologies in learning has tended to focus too narrowly on the nature of the digital devices that are used for learning, how they are used in classroom settings, the extent to which they are used outside of the classroom and the extent to which they help or hinder learning and learning outcomes. In the design of the survey, the team recognises that the concept of technologies and technological change, their integration in socio-economic and cultural life and their contribution to the advancement of the human condition, is unresolved among philosophers, scholars, researchers and practitioners.

Definitions of digital technologies, learning, eLearning and development are constantly changing and will remain a contested terrain among scholars, policy makers and practitioners. For the purposes of this report, we provide working definitions where possible, to help navigate our analysis of the survey data. For the purposes of the survey and report, digital technologies have been defined in various ways in an attempt to understand how survey respondents view them, use them for learning, the motivation for their use and their effects on learning outcomes. Whilst we focus deliberately on traditional and new devices (from radios to tablets), we also take account of the shifts that give rise to a combination of mobility, openness, social media and connectivity.

Appendix 2: Summary of the eLearning Africa Survey 2013

This is a summarised version of The *eLearning Africa Survey 2013*. It lists the main questions that are of relevance to the development of The *eLearning Africa Report 2013* but does not list each of the options given in answering the questions. All questions were optional. At the end of the survey respondents were asked questions about their previous participation in eLearning Africa and given an opportunity to offer any further information.

Section 1 – Background

- What is your name?
- Are you male or female?
- What is the name of your organisation / employer?
- What is your country of origin / birth?
- In which country within Africa do you currently work in education and skills development?
- Which one of these categories best describes your job function?
- Which type of organisation do you work for?
- What level of education is your work most focused on?
- What is your highest formal educational qualification?
- In which region of the world are you based?
- In which sector(s) do you work?

Section 2 - Current use of learning technologies

- Are you currently using technologies to support learning in your organisational context in Africa? (Yes, No, Don't know)
- [If answered 'Yes' to the first question in the section] which of the following technology devices are you currently using to support learning in your organisational context in Africa? (Respondents were given a

list of 12 devices, including 'other', and asked how often they are using them).

- [If answered 'Yes' to the first question in the section] which of the following social media are you currently using to support learning in your organisational context in Africa? (Respondents were given a list of nine forms of social media, including 'other', and asked how often they are using them).
- How are you currently using the learning technologies in your organisational context in Africa which you selected in the questions above? (Respondents were given a list of 14 options and asked to tick all that applied).
- What is the biggest motivation for using learning technologies in your organisational context in Africa? (Respondents were given a list of six options, including 'other' and asked to select only one answer).
- What effects has the use of technologies had on learning outcomes in your organisational context in Africa? (Respondents were given a list of four options, asked to select only one answer and to explain the reason for their answer).
- Do you have access to locally-produced digital content in your organisational context in Africa? (Yes, No,

Don't know). (Respondents were then asked explain their answer.)

- Are you involved in the creation of locally-produced digital content in your organisational context in Africa? (Yes, No, Don't know). (Respondents were then asked explain their answer.)
- Are you involved in the creation of digital content in indigenous African languages in your organisational context in Africa? (Yes, No, Don't know). (If respondents answered 'Yes' they were asked to specify the African languages in which they create digital education content.)
- Do you use digital content in indigenous African languages in your organisational context in Africa? (Yes, No, Don't know). (Respondents were then asked to specify and explain their answer.)

Section 3 - Challenges, failures and lessons

- In the African country where you currently work, what are the three most significant challenges constraining the use of technologies that can support learning? (Respondents were asked to select three answers and provide reasons for their answers.)



Photo: Hary Yohane Kachipanda, Malawi, "ICT training for pastors"

- Have you experienced any failures when using technologies to support learning in the African country in which you work? (Yes, No, Don't know). If respondents answered 'Yes' they were then asked to specify: the nature of the failures experienced, the reasons for the failures experienced, what could be done differently based on the experience of failures.

Section 4 - Change, drivers, change agents

- Over the last five years, what have been the top three drivers of change in the use of learning technologies

in the African country where you work? (Respondents were given a list of 14 options, including 'other' and asked to select their top three and explain the reasons for their answer.)

- What do you think will be the top three most significant changes in the use of learning technologies in the African country in which you work over the next five years? (Respondents were given a list of 13 changes, including 'other' and asked to select their top three and explain the reasons for their answer.)
- Who is the most important agent for accelerating the integration of learning technologies in the African

country where you work? (Respondents were given a list of 12 options, including 'other' and asked to select one answer.)

Section 5 - The post-2015 development agenda

- What do you think are the three priority human development issues in Africa that the global development community should commit to after 2015?
- What do you think are the three priority issues related to the use of learning technologies in Africa that the global development community should commit to after 2015?

Appendix 3: Biographies of Editorial Board, Editor and Sub-Editors

Ben Akoh

Ben Akoh is an expert on media and technology policy, Internet governance processes, research and capacity building on the development and deployment of ICTs and the Internet, in Africa and globally. Mr Akoh is a facilitator and sessional instructor for the Extended Education faculty of the University of Manitoba, delivering distance education, blended, face to face and fully online learning courses on emerging Internet technologies, Open Education Resources and digital literacy. He is also a graduate student at the University. Alongside this he works for the International Institute for Sustainable Development, a policy think tank based in Canada and has worked with the Open Society Initiative for West Africa, UNECA and in the private sector. Ben Akoh served as sub-editor to *The eLearning Africa Report 2013*.

Boubacar Balde

Boubacar Balde is an expert on technology integration in education, cyber security, education project management, deployment of ICT Solutions and Cloud in Africa. He is the Education Lead for Net Performance. Under his supervision, education programmes are deployed currently in Senegal, Ivory Coast, DRC and Guinea, bringing affordable ICT solutions to schools and universities.

Boubacar graduated from Université Libre de Tunis in Computer Science and holds a Master in Economics from the University Libre de Bruxelles. Boubacar is also a co-founder of a consulting agency specialised in Portfolio Management, advising clients across the globe on equities, forex and commodities. Boubacar served on *The eLearning Africa Report 2013's* Editorial Board.

Maggy Beukes-Amiss

Dr Maggy Beukes-Amiss is a Namibian with over 17 years of experience in teaching ICT related subjects at the University of Namibia, within the Department of Information and Communication Studies. She has a PhD in Computer-integrated Education (CiE) through the University of Pretoria, South Africa. She served as Head of Department (2005-2007), and now again for another four year term (2012-2015).

She is particularly passionate about eLearning capacity-building activities through the use of open source software packages and research focusing on eLearning technologies and activities. She is a member of the eLearning Committee of the University of Namibia and used to serve on the Namibian Open Learning Network Trust (NOLNet) eLearning Committee as Coordinator

of eLearning activities within the entire country for over seven years, until 2011. She has been involved in a number of eLearning capacity-building activities in Namibia and various countries in Africa on behalf of NOLNet, GIZ and GESCI.

She is also a reviewer of conference papers for *eLearning Africa*, on behalf of ICWE GmbH, Germany, 2011-2013. She is a certified ICDL trainer (2007) and an Expert of New Learning Technologies (2005) through TeleAkademia of Furtwangen, Germany.

She has served as an ICT Steering Committee member of the ICT Steering Committee of the Ministry of Education in Namibia since 2005 and, in addition, has been the Deputy Chairperson of the ICT Steering Committee since 2012. She was a contributor of the national ICT Policy and implementation plan, *Tech NA!*. She was a Commissioner and then Chairperson of the Board, of the regulator Namibian Communications Commission (NCC), 2006-2011. She was also appointed as the country's eminent e-Content expert through the World Summit Award (WSA), 2006 -2013. She served as a Technical Quality Assurance Committee (TeQAC) member for the African leaders in ICT (ALICT) blended learning programme of GESCI, as well as the tutor-coordinator (training and coaching) e-tutors of the ALICT programme, 2011-2013. Maggy Beukes-Amis served on the Editorial Board of *The eLearning Africa Report 2013*.

Mawaki Chango

Blending scholarship with practice, Mawaki Chango is a researcher and a consultant in the areas of Internet governance and public policy, ICT4D (Information and Communication Technologies for Development) as well as information technology and the humanities. Recent research includes a socio-historical inquiry into individual identification systems, from medieval

seals to passports to emerging Internet-based digital identity credentials.

Chango has also served within Internet governance bodies, including as policy councillor for Internet domain names policy at ICANN and as a consultant on projects to numerous organisations, including UNESCO, International Development Research Centre, OSIWA (Open Society Initiative for West Africa) and EvalNet. He has authored or co-authored a number of scholarly articles and a book chapter on Internet governance, eGovernment and broadband civic networks. Chango has earned a graduate degree at Pantheon-Sorbonne University in Paris and a PhD degree at Syracuse University in New York State. He speaks French, English and Portuguese. Mawaki Chango served on the Editorial Board of *The eLearning Africa Report 2013*.

Pierre Dandjinou

Pierre Dandjinou currently holds the position of Vice President (VP), Stakeholder Engagement for Africa, of the ICANN. Prior to this, Pierre was policy Advisor for information and communication technology (ICT) for development at the United Nations Development Programme (UNDP). He previously was the director of Infocom Services, a consultancy firm operating from Cotonou, Benin and Dakar, Senegal. He has been involved in many IT-related initiatives on the continent, including AfriNIC, Internet initiative for Africa, AfricaCERT and the Africa Internet Summit (AIS).

Pierre Dandjinou graduated from the University of Paris III, Sorbonne and the CNAM (Conservatoire National des Arts et Métiers), Paris, France. His current fields of interest are eGovernment as a means for fostering public administration reform, cyber security and e-platforms for online education. Pierre Dandjinou serves on the Editorial Board of *The eLearning Africa Report 2013*.

Harold Elletson

Dr Harold Elletson is the Director of The New Security Foundation, which conducts research into the implications of the new security environment for civil society. The New Security Foundation provides an international forum for dialogue between the public and private sectors and offers analytical insight and information about new security conditions. The Foundation hosts regular events and conferences, including an annual 'International Forum on eLearning for Defence and Security.' He is also a founding director of the Africa Forum on Business, Investment and Security, a member of the steering committee of ONLINE EDUCA BERLIN and a member of the Organising Committee of *eLearning Africa*.

Dr Elletson was previously Director of the NATO Forum on Business and Security, which he created with support from the NATO Science Programme. The Forum, which brought academics, businessmen and political leaders together to discuss the implications of the new security environment, was attended by delegates from over 60 different countries.

A former Member of the United Kingdom Parliament (from 1992-1997), he served as Parliamentary Private Secretary to the Secretary of State for Northern Ireland in the early stages of the peace process and was also a member of the Select Committee on Environment. Harold Elletson has a good knowledge of education at a local level both in Britain and overseas. He served as a member of the Lancashire Education Authority (the Education Committee of Lancashire County Council) before being elected to Parliament where he represented the interests of schools and colleges in his constituency in discussions with Ministers and on the floor of the House of Commons.

An international public affairs consultant and a fluent Russian speaker, he has advised many leading companies on aspects of their business in the for-

mer Soviet Union, including BP in Azerbaijan and Alstom in Siberia. He has written widely on political and historical subjects and his first book, *The General Against the Kremlin*, was published by Little Brown. His journalism has been published in a variety of newspapers and magazines. Dr Elletson holds a PhD in Social Sciences from the University of Bradford. Harold Elletson served on the Editorial Board of *The eLearning Africa Report*

He has a longstanding interest in food production, owns a small agricultural estate in the north of England and hosts a monthly farmers' market at his home.

Ahmed M. El-Sobky

Mr. El-Sobky is the Head of the Technical Division at Information Technology Industry Development Agency (ITIDA). He has been working in the fields related to Information Technology since 1985.

He worked as the Director of Strategic Projects at the Ministry of Investment and participated in managing a number of eGovernment projects implemented under the umbrella of the Ministry of State for Administrative Development (MSAD).

On the African level, he participated in the development of eLearning strategy for both Nile Basin and COMESA Countries as an Egyptian expert who participated in implementing the first eLearning Master degree in the Middle East in collaboration with Middlesex University in UK and in establishing the Egyptian node for the Global Distance Learning Network of the World Bank (GDLN).

On the regional level, and as a member of the Arab Workforce Group preparing the WSIS 1st phase, he has participated in formulating the draft document *Towards a Pan Arab Information Society - A Joint Action Plan*. In addition, he participated in the drafting

committee of the High Level Arab Conference to prepare for the first phase of the WSIS, which was held in Cairo in June 2003.

As a national IT expert, he contributed to the implementation of the National Contest of the e-Content under the umbrella of – ITIDA, through his membership of the competition executive committee. He also participated as jury in the second round of the competition in 2007 in the field of eLearning. He was also a jury member in the Motamizon Competition, organised by National Institute of the Department under the umbrella of the Ministry of State for Administrative Development. In addition, he led a national workgroup – under the umbrella of the Ministry of Communications and Information Technology – to issue the *Egypt ICT Golden Book*, which presented the projects undertaken by Egypt in the field of ICT4D as one of Egypt's efforts in the implementation and follow-up of the two WSIS phases, Geneva and Tunis.

Mr. El-Sobky is an author for a number of papers submitted in international, regional, and local conferences in the areas of eLearning, eContent, eGovernment and the Knowledge Society. In addition, he has authored a book called *A Guide for Information Technology and Systems Security*.

He is a member of the Board of Information Technology and Communication – Internet Security Workgroup, Academy of Scientific Research and Technology, Egypt. Ahmed El-Sobky served on the Editorial Board of *The eLearning Africa Report 2013*.

Toby Harper

Toby Harper is an expert in social and organisational development, based in Canada. More information can be found at www.thll.ca. Toby Harper wrote sections of *The eLearning Africa Report 2013*.

David Hollow

David Hollow works for Jigsaw Consult (www.jigsawconsult.com), a social enterprise based in London that works with a wide range of international development organisations. He has been a keen participant in *eLearning Africa* since 2007.

David works with a variety of donors, governments, private sector and civil society organisations on issues of education, technology, partnership and impact assessment. He holds a PhD in evaluating the impact of ICT on education in Africa and also lectures on the MSc course in ICT4D at Royal Holloway, University of London. He is Chair of Trustees for Refugee Support Network (www.refugeesupportnetwork.org), a London-based charity providing educational support to young people affected by displacement and crisis. David Hollow served as sub-editor to *The eLearning Africa Report*.

Shafika Isaacs

Shafika Isaacs is an independent consultant who specialises in the role of digital technologies in improving education access, quality and equity. She has worked with UNESCO, *eLearning Africa*, the Bill and Melinda Gates Foundation, UNICEF, the Commonwealth of Learning (COL), the World Bank, Cisco, Intel and Microsoft.

She was formerly the founding Executive Director of SchoolNet Africa, Education Director at Mindset Network, Partner Development Lead for Microsoft's Unlimited Potential Group in the Middle East and Africa and Senior Programme Officer for the International Development Research Centre (IDRC).

Currently, she serves as the Programme Director of *eLearning Africa* and Editor of *The eLearning Africa Report*. Shafika also serves on the Global Compact for Learning Research Task Team, UNESCO's Mobile Learning Policy Advisory Group, The Lewis Foundation Board of Trustees, NMC Horizon K-12 Report Ad-

visory Board, Intel's Policy Advisory Group, ONLINE EDUCA BERLIN Steering Committee and is the Chair of School-Net South Africa. She has authored a number of research reports and papers related to ICT in Education in Africa.

As a recipient of the Nelson Mandela Scholarship Award, she obtained a Master of Science degree in Science and Technology Policy at the University of Sussex and an Executive MBA cum laude at the Graduate School of Business at the University of Cape Town. Shafika Isaacs served as editor of *The eLearning Africa Report 2013*.

Lee Muzala

Lee Muzala is an ICT Consultant with Trio Consult Limited (www.trio-consult.com), an ICT consultancy firm based in Zambia, which he co-founded in 2004. Trio Consult specialises in design of websites, databases, interactive learning resources and animations for use in education. Lee started his career in IT in 1997, as a software developer working with programming tools like COBOL and dBase 3 and 4. Lee has extensive experience in the ICT sector in Zambia, and his work has seen him rise from a programmer and trainer to being an IT Manager and eventually as Managing Director of an ICT consultancy firm. Over the last few years, Lee has initiated several online ventures like Mpoto (www.mpoto.info) – an online tender advertising platform; Tiyende Zambia (www.tiyende-zambia.com) – a niche event directory of all events happening in Zambia, specifically aimed at aiding travellers (visitors and locals) to know places they can visit and have fun; StudyMate (www.studymate.info) – an educational platform that is aimed at giving Zambian learners an opportunity to use digital and interactive learning resources, as they prepare for exams.

Muzala's passion for technology and creativity has been the driving force

behind the several initiatives he has worked on, including the ones that are still work in progress. Lee Muzala served on the Editorial Board of *The eLearning Africa Report 2013*.

Evelyn Namara

Evelyn Namara is a technologist and social entrepreneur with a passion for working with women and girls in technology and entrepreneurship. Evelyn started her career as the IT technical support engineer for a small firm called Linux Solutions; she later joined HITS TELECOM (now Orange Uganda Limited) as the IT Unix Administrator. She was part of the team that set up most of the core systems at Orange, including the company proxy. She managed most of the IT company's UNIX based systems and maintained them.

After working in the telecoms sector for over four years, Evelyn moved on to work with a grassroots organisation called Solar Sister, Inc., a social enterprise that uses the breakthrough potential of Solar energy to empower women in rural Uganda. She is the Country Manager of Solar Sister in Uganda and has led the organisation from its core start with about 10 entrepreneurs to growing it to about 300 entrepreneurs to date.

Her passion is to see how simple technological tools can be used to bring about social change in society and her goal is to use such technologies to empower women to do their own businesses. She is a Bsc. Computer Science graduate and also holds a Diploma in Information Technology. Evelyn Namara served on the Editorial Board of *The eLearning Africa Report 2013*.

Rebecca Stromeyer

Rebecca Stromeyer founded *eLearning Africa* in 2005. *eLearning Africa* is the

leading international conference on ICT for Development, Education and Training, held in a different African country each year. She is also the Executive Director and founder of ICWE GmbH, an international conference and media company based in Berlin and Chairman of the Board of the award-winning web portal Internet Course Finders, which offers information on all types of educational institutions worldwide.

Rebecca is a co-founder and shareholder of ICEF GmbH, the recognised global leader in international student recruitment and a founding director of E-Cubed Communications, an agency for international communications, marketing and public affairs. She is an advisor to the European Learning Industry Group (ELIG) and a board member of the Global Development Learning Network (GDLN), a global board overseeing the 120 GDLN affiliates in 80 countries.

Rebecca serves as the Chairperson of the East Trust, a not-for-profit organisation that aims to make a lasting positive impact on education in Africa. She is also a member of board of the Drucker Society, a practitioner led, multi-stakeholder group that builds on Peter Drucker's fundamental ideas and ideals with the aim of contributing to the evolution of management as a vital piece of a functioning modern society, and a member of the board of directors of the Global Business School Network.

Rebecca grew up in an international and multilingual environment. She was born in Kuwait and spent most of her formative years in different countries in the Middle East. She studied Slavonic Studies, Comparative Literature & Media Studies in Berlin and Moscow and Business Administration in the UK. She speaks English, German, French and Russian. Rebecca Stromeyer provides strategic direction to the *eLearning Africa Report* and serves on its Editorial Board.



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