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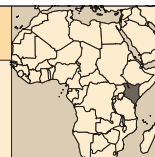
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EDUCATION FOR THE NEXT GENERATION: ASSESSING THE IMPACT OF THE INTERNET IN PRIMARY SCHOOLS

KEYWORDS: **education**

KICTANet

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Introduction

Education has for several decades ranked highly among the priorities of successive Kenyan governments.¹ In fact, as a testament of this commitment, the country's 2010 constitution provides for and guarantees the right to education. As the country's estimated population of 42 million people grows, the government needs to find ways of not only enhancing access to education, but also of ensuring a comprehensive and globally competitive education system. Towards this end, in 2003 the Kenyan government announced the introduction of the Universal Free Primary Education Programme,² which has since been implemented with varying degrees of success. Ten years later, the incumbent Jubilee administration announced the Free Laptop Programme for primary school learners.³ Whereas the laptop programme is yet to be implemented, a Digital Literacy Programme is currently being piloted for roll-out in 2017.

Kenya currently has an estimated 37.7 million internet users, with an internet penetration rate of 85.4%, while mobile subscriptions are at 39.7 million – the country has a mobile penetration rate of 90%.⁴ As the statistics suggest, the internet is no longer a tool for the elite, but is now considered a necessity available for everyone. But just how are

schools and students using it? In a country with young learners who are savvier than their teachers, how is our education system realigning and reorienting itself to harness the power of the internet? How can schools address the challenges resulting from the use of the internet, while tapping on the benefits? There is still a lot that needs to be done by various key stakeholders to ensure that Kenya maximises on its internet connectivity and techno-savvy youth to enhance access and quality of education.

Policy, economic and political background

Kenya is one of the 164 states that have ratified the International Covenant on Economic, Social and Cultural Rights (ICESCR).⁵ Kenya ratified the global instrument on 1 May 1972, but is yet to adopt the Option Protocol to the Convention. Nonetheless, despite ratifying the Covenant more than four decades ago, and demonstrating progress towards the realisation of economic, social and cultural rights (ESCRs), Kenya did not have strong legal protection for and effective strategies towards realising ESCRs until 2010.

The legal protection of ESCRs therefore is a fairly new concept in Kenya's legal framework. These rights were introduced under Kenya's 2010 constitution, which provides the general philosophy and policy and legal framework for rights in its Bill of Rights. Article 43 of the constitution protects the rights to health, housing, freedom from hunger, clean and safe water, social security, and education. Further, Article 53 provides for the right of every child to free and compulsory basic education. The constitution also apportions various responsibilities to implement this right to both the national government⁶ and county governments⁷ in Part 2 of its Sixth Schedule.

The right to education is further reinforced through a number of laws and policies which have

1 BBC. (2008, 11 February). Free secondary school for Kenya. BBC.news.bbc.co.uk/2/hi/africa/7239577.stm; Background information, MOEST www.education.go.ke/index.php/about-us/background-information; Daily Nation. (2012, 31 March). History of education in Kenya. www.nation.co.ke/lifestyle/The-history-of-the-Kenyan-education-system/1190-1377574-d49li7/index.html

2 TUSOME, MOEST. www.education.go.ke/index.php/programmes/tusome; Kenya, P. (2008). *Kenya Free Primary Education: An Assessment on the Impact and Sustainability of Free Primary Education in Migwani Division*. architecture.brookes.ac.uk/research/cendep/dissertations/PaulKenya.pdf

3 Digital Literacy Programme, ICT Authority. www.icta.go.ke/digital-literacy-programme

4 Communications Authority of Kenya. (2016). *Quarterly Sector Statistics Report (April-June 2016)*. ca.go.ke/images/downloads/STATISTICS/SECTOR%20STATISTICS%20REPORT%20Q4%202015-2016.pdf

5 www.ohchr.org/EN/ProfessionalInterest/Pages/CESCR.aspx

6 Responsible for education policy, standards, curricula, examinations and the granting of university charters, universities, tertiary educational institutions and other institutions of research and higher learning and primary schools, special education, secondary schools and special education institutions, and sports education.

7 Responsible for pre-primary education, village polytechnics, homecraft centres and childcare facilities.

since 2010 been revised to secure and ensure the realisation of this right. These include the Basic Education Act,⁸ the Children Act,⁹ the Kenya National Examinations Act,¹⁰ the Kenya Institute of Curriculum Development Act,¹¹ the Teachers Service Commission Act,¹² and the Science, Technology and Innovation Act,¹³ among others.

At a policy level, and as articulated in Kenya's development blueprint called Vision 2030,¹⁴ the country hopes to provide globally competitive quality education and training and research to her citizens to support development and enhanced individual well-being. Under its Medium Term Plan 2013-2017,¹⁵ the government has identified information and communications technologies (ICTs) as a national priority and committed to make education the key platform for equipping the nation with ICT skills in order to create dynamic and sustainable economic growth. This demonstrates a keen commitment by the government to realise the right to education in the country.

The Digital Literacy Programme (formerly the Laptop for Schools Programme) emanated from an election promise by the Jubilee government during its election campaign in 2013. The promise was to provide every child joining standard 1 in primary school with a solar-powered laptop within 100 days. The project has been described as “an ego project since the leaders are basically trying to outdo their opponents by showing that they can meet whatever promises they had made to the electorate.”¹⁶ Nonetheless, the government committed to sustain the programme for each succeeding year until the day when every child in the country would walk with a satchel and a laptop.¹⁷ The project has encountered teething problems, but despite this, the government has remained determined to implement it given its steadfast investment in the programme.

For example, during the 2016/17 fiscal year, the programme was allocated KES 13.4 billion (roughly USD 134 million).¹⁸

Slow implementation

However, implementation of the project has been slow as there were some challenges that needed to be dealt with. Some of these include the fact that there seems to have been a rushed decision on this project, without all the necessary strategic thinking having been done. For example, the majority of the teachers expected to teach computer literacy are computer illiterate and would first need to be trained; there are schools that are struggling with basics such as classrooms equipped with desks; and some children are still being taught in the open as some schools lack enough classroom space. Other issues include a lack of an adequate or sustainable power supply, security of the laptops, and procurement scandals. But, after three years of waiting, the project pilot finally took off in May 2016.

The process started with the government publishing a call for tenders in September 2015.¹⁹ Apart from supplying laptops for schoolchildren that were “able to withstand rugged operating conditions” and were equipped with “a long-life battery with low power consumption,”²⁰ the call specified that those who won the tenders would also supply projectors, routers and servers. Ten companies were shortlisted.²¹ These companies reflected the need for public-private partnerships, as most of the private companies partnered with local universities in their bids. This could be interpreted to be a response to the fact that, in order to build local capacity, the government specified that it wanted only public institutions that had the capacity through their business arms to assemble the devices locally to be a part of the bid,²² with a promise of tax rebates in return.

Consequently, five universities were shortlisted,²³ with two which partnered in the tender process

8 Provides the framework for the implementation of free and compulsory basic education.

9 Provides the framework for the protection of the rights of children.

10 Provides for the conduct of examinations.

11 Provides the framework for the development and review of education curriculum.

12 Provides for the employment and management of teachers.

13 Provides for the promotion, coordination and regulation of the progress of science, technology and innovation.

14 www.vision2030.go.ke/lib.php?f=vision-2030-popular-version

15 www.jkuat.ac.ke/directorates/dipca/wp-content/uploads/2015/07/Education-and-Training-MTP2.pdf

16 Farah, M. (2015, 28 May) Kenya's one laptop per child policy: a critique. *LinkedIn*. <https://www.linkedin.com/pulse/kenyas-one-laptop-per-child-policy-critique-muhamad-farah>

17 Jubilee Manifesto: Uhuru Kenyatta Speech. www.kenya-today.com/politics/uhuru-kenyatta-manifesto; Jubilee Manifesto. www.kenya-today.com/politics/jubilee-manifesto

18 Highlights of the 2016/17 Budget. www.treasury.go.ke/publications/category/105-budget-2016-2017.html?download=459:budget-highlights-of-the-2016-2017

19 Ochieng, L. (2015, 4 September). Govt invites tenders for supply of laptops again. *Daily Nation*. www.nation.co.ke/business/Govt-invites-tenders-for-supply-of-laptops/996-2858678-w649h3z/index.html

20 Ibid.

21 Ongiri, I. (2016, 6 January). Sh17bn laptops tender bid to start on Friday. *Daily Nation*. www.nation.co.ke/news/Sh17bn-laptops-tender-bid-to-start-on-Friday/1056-3022570-gyl5k12/index.html

22 Ochieng, L. (2015, 4 September). Op. cit.

23 Oduor, A. (2015, 30 November). State shortlists 10 firms in laptop project. *Standard Digital*. www.standardmedia.co.ke/article/2000184022/state-shortlists-10-firms-in-laptop-project

– the Jomo Kenyatta University of Agriculture and Technology (JKUAT) and Moi University – winning the tenders. Once the selection process was complete, 150 schools were chosen to participate in a country-wide pilot project, with nine of them being special needs schools which cater for pupils with different challenges. It is expected that at least 11,570 primary school class 1 (elementary school grade 1) pupils will receive free laptops²⁴ in the first phase of implementation as the KES 17.7-billion (USD 168-million) laptop project²⁵ rolls out.

It is anticipated that digital content creators and animators will derive a lot of benefits from this project, as the government will leverage partnerships with the private sector in creating and producing educational content which will be available on these devices.²⁶

Colonising devices

It is important to note that even though there was a delay in implementation of the Digital Literacy Programme, many children had embraced technology way before the government plans to provide technology in schools – the country's youth are not sitting around waiting for laptops to arrive in the classrooms.

Instead they have colonised devices that they have ready access to, such as their parents' phones, tablets and laptops. Take for example Jane, a two-year-old child, who is able to navigate phones or tablets and select her favourite applications to explore cartoons or content of interest to her. Young children, even before they start attending school, are able to use applications such as YouTube or Netflix and search for and watch their favourite videos, movies or television shows. Once on a site, they get to explore more sites that have similar content. This is possible even for young children like Jane who cannot read or write, but who only need a video downloaded for them to be able to navigate further based on their recognition skills of, for example, similar cartoons. This has been seen to contribute to building children's cognitive skills.

Older children such as Peter, who is six years old, can navigate Play Store on Android or Apple Store on iOS devices and download his favourite games and play. Further, he can comfortably search for content through Google search or on YouTube and interact with the content.

Children today including those that are younger than two years old have become tech-savvy and yet they have not been taught how to use the devices. It is amazing that they are able to interact with smartphones and swipe and discover new things based on their curiosity. More so, some have made discoveries that their parents, who own the gadgets, are not aware of.²⁷ In fact they are no longer interested in toy phones.

According to Stella,²⁸ Jane's mother, her daughter discarded her toy phones as soon as she discovered the unique features of her mother's smartphone. As a result, Stella has had to buy herself another smartphone and leave her previous device for her daughter's exclusive use.

Nevertheless, for children who may not have access to these devices at home, the school does provide a place to access them. At Olympic Primary School, located in Kenya's largest slum, the local member of parliament Ken Okoth has launched an ICT programme by setting up computer labs in primary schools as a way of jump-starting the interaction of the pupils with technology in his Kibra constituency.²⁹ The school, with a population of more than 500 children, received several computers, a screen projector and a laser jet printer. Okoth believes that embracing ICT skills at a young age will help the students improve their communication, writing, editing and critical thinking skills, and improve their innovation and creativity skills. Further, he believes that the students will be in touch with global trends, becoming relevant and competitive in the job market.

It is evident that technology needs to, and will, play an important role in shaping the future of Kenya's education sector. It is therefore important that for this to become a reality, the relevant stakeholders must understand and fulfil their roles in the implementation process to deliver the benefits to the children.

24 Ngugi, B. (2015, 21 September). Government opens bids for the supply of school laptops again. *Daily Nation*. www.nation.co.ke/business/Govt-invites-tenders-for-supply-of-school-laptops/996-2879098-quafh/index.html

25 Anami, L., & Oduor, A. (2016, 3 May). 11,500 Kenya Standard One pupils to get laptops today. *Standard Digital*. www.standardmedia.co.ke/article/2000200393/11-500-kenya-standard-one-pupils-to-get-laptops-today

26 Okuttah, M. (2015, 9 September). How businesses will gain from e-learning taking off next year. *Business Daily*. www.businessdailyafrica.com/How-businesses-will-gain-from-e-learning/1248928-2864268-atg7vzb/index.html

27 The authors' experience with their own kids, those of relatives and those of friends.

28 Interview with Stella (not her real name as she preferred anonymity), 28 September 2016.

29 Kibra Constituency. (2016, 18 February). Kibra schools embrace ICT programme. <https://kibraconstituency.wordpress.com/2016/02/18/kibra-schools-embrace-ict-programme>

What should the roles of the different players be?

As the country moves towards rolling out the digital learning programme, it is important that all the key stakeholders, whether government, private sector or civil society, understand the crucial roles that they need to play.

The government should put in place measures to ensure that all children have equal access to acceptable and quality education, including e-learning facilities; make educational resources available, which includes ensuring that learning, financial and human resources are equitably distributed across the country; and ensure that there is no discrimination in the education system. Other measures include ensuring that the environment for learning, including when using technology and the internet, is safe and conducive for the development and growth of children; and that the ICT programmes rolled out in schools are adaptable to the needs of the country, including the needs of children with disabilities or those with special needs.

Other than for learning, the government can harness ICTs to develop the capacity of teachers and to generally improve education management, governance and administration.

The private sector has an important role in ensuring the realisation of the right to education. They should, for instance, support the development of content such as e-books and e-learning materials; and provide equipment and develop infrastructure to enable access to the internet, including country-wide broadband connectivity at an affordable cost. In addition, they need to engage with the government through public-private partnerships to develop solutions for the education and ICT sector, support innovation around ICT and education that caters for the needs and priorities of children, and build more schools. Other roles would be the deployment of corporate social responsibility programmes to support education programmes through infrastructure development, bursaries and scholarships for children, the development of content for schools including in local languages, and assisting in building the capacity of teachers and other ICT professionals.

Civil society can play a number of important roles. These include monitoring and evaluating the levels of access, affordability and quality of education and advocating for transparency and accountability in procurement in educational projects. Other roles involve strengthening their work by building inclusive and capable coalitions and engaging at local, regional and global levels on education,

and ensuring their representation in education policy processes in order to include citizen voices in these processes. Civil society should source funds to support educational initiatives on education, advocate for education funding reforms to increase funding for education programmes through diverse means such as debt relief, and build their research and knowledge development capacities to enable them to contribute to education reform.

Conclusions

Through internet connectivity, both students and teachers can benefit from the information super-highway. Where textbooks are not readily available, or information is outdated or unavailable, the internet provides an avenue to access online educational material. Such reference materials can be useful for research for both students and teachers, as well as for benchmarking knowledge levels by comparing outputs from similar education levels. Further, the benefit of using the internet is that it helps build digital literacy skills in the process through regular interaction and exposure.

However, ICTs are not the silver bullet to fix Kenya's challenges in realising the right to education. Whereas adding new and shiny devices might enhance the classroom experience, the goals of the education system, as well as questions around sustainability and relevance, must not be forgotten. The government, in designing the Digital Literacy Programme, must take into account the ever-increasing tech-savviness of two-year-olds and the likely deficiencies of their would-be teachers once these children get their hands on the devices in school. More work needs to be done to bridge the digital divide, not just across different regions in the country, but also between the teachers and their pupils. What is clear, though, is that the proper implementation of ICTs will go a long way in making education available, acceptable, adaptable and accessible in Kenya.

Action steps

There are several ways in which Kenya's Digital Literacy Programme can be strengthened:

- The current institutional practices and arrangements to manage the education sector should be reviewed to ensure that the diverse agencies supporting the Digital Literacy Programme – from procurement, curriculum development, teacher management, to school financing and examination management – are properly coordinated to enhance efficiency, effectiveness and quality of education. Having a strategic plan that

deals with these issues, and provides a guide for implementation and next steps, should be considered.

- The barriers to ICT use need to be identified and tackled. These include cost of devices, capacity, and infrastructure. Policy, legal, financial, administrative and other measures to tackle these barriers need to be put in place in collaboration with relevant stakeholders.
- The current curriculum and the approach to pedagogy need re-examining. For example, existing publishers and authors should develop language and content for the Digital Literacy Programme in forms that are adaptable to different uses and different platforms. Where possible, the content should be open and free to use, without restrictions over copyright.
- The existing telecommunications infrastructure should be improved to ensure national reach of broadband internet. This should include

ensuring that all schools have access to the electricity grid, and where not available, alternative power sources such as solar should be installed. Ongoing ICT capacity-building programmes should be developed for teachers and education managers in order to allow them to take full advantage of technology and therefore improve student learning.

- The government should explore different ways of financing education to ensure that the Digital Literacy Programme is sustainable. This could include encouraging public-private partnerships, or providing tax rebates for private entities supporting the education sector.
- Civil society should advocate for, among others, increased funding for the Digital Literacy Programme, protection of local content, reduction of internet costs, and expansion of internet infrastructure, including through deployment of the Universal Service Fund.

Economic, social and cultural rights and the internet

The 45 country reports gathered here illustrate the link between the internet and economic, social and cultural rights (ESCRs). Some of the topics will be familiar to information and communications technology for development (ICT4D) activists: the right to health, education and culture; the socioeconomic empowerment of women using the internet; the inclusion of rural and indigenous communities in the information society; and the use of ICT to combat the marginalisation of local languages. Others deal with relatively new areas of exploration, such as using 3D printing technology to preserve cultural heritage, creating participatory community networks to capture an “inventory of things” that enables socioeconomic rights, crowdfunding rights, or the negative impact of algorithms on calculating social benefits. Workers’ rights receive some attention, as does the use of the internet during natural disasters.

Ten thematic reports frame the country reports. These deal both with overarching concerns when it comes to ESCRs and the internet – such as institutional frameworks and policy considerations – as well as more specific issues that impact on our rights: the legal justification for online education resources, the plight of migrant domestic workers, the use of digital databases to protect traditional knowledge from biopiracy, digital archiving, and the impact of multilateral trade deals on the international human rights framework.

The reports highlight the institutional and country-level possibilities and challenges that civil society faces in using the internet to enable ESCRs. They also suggest that in a number of instances, individuals, groups and communities are using the internet to enact their socioeconomic and cultural rights in the face of disinterest, inaction or censure by the state.

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