

# The role of ICTs in enhancing primary education in Africa



## Introduction

### *The human right to education*

The 1948 Universal Declaration of Human Rights states in its twenty-sixth article: "Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory."<sup>4</sup> Failure to meet such human right is common; Africa is particularly affected by the issue and suffers the consequences of 40% of African men and 50% of African women being illiterate.<sup>5</sup> Schools face numerous issues including low enrolment, gender inequalities, lack of funding and disparity in levels of education among the continent's nations. As world leaders attempt to achieve the United Nations Millennium Development Goals (MDGs) and tackle the challenges of development around the world, Africa is struggling to meet the second MDG, which is to ensure provision of universal primary education for all boys and girls by 2015.<sup>6</sup>

### *Enhancing primary education using Information and Communication Technologies (ICTs)*

In support of the second MDG, and the concept of universal human rights, the first principle of the United Nations Global Compact states that "businesses should support and respect the protection of internationally proclaimed human rights."<sup>7</sup> ICTs may help support the human right to education in Africa in a number of ways, from helping teachers to get trained and connect with other teachers to helping children interact with learning materials designed specifically to fit their educational needs, among others. In spite of considerable challenges such as the continent's low Internet connectivity, innovative ICT companies have a critical role to play in helping the African continent meet the MDGs and support human rights. The following first presents the wide range of benefits better primary education may bring to Africa, and then goes on to describing the role of ICTs in helping to achieve universal primary education on the continent, including the issues ICTs face.

## The case for primary education

Education is not only a human right itself; it is also a major influence on other human rights and on living conditions of Africans, on the work market and agriculture for instance. The World Bank finds a variety of benefits in primary education, ranging from improving health, reducing HIV/AIDS, increasing agricultural productivity, reducing malnutrition, raising productivity and income to promoting overall economic growth.<sup>1</sup>

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### *Enhancing health*

Primary education, especially of girls and women, is a cost-effective way of enhancing health. A major benefit of primary education in Africa lies in HIV prevention, as it may help reduce the number of sexually active youngsters and risk behaviours. Education also contributes to reducing infant mortality: African mothers that have completed five years of primary education are 40 percent less likely than uneducated mothers to have children under age 5 dying.<sup>2</sup>

### *Improving food production*

The Food and Agriculture Organisation (FAO) of the United Nations states that "education is the most effective way to empower the rural poor to get out of poverty and to ensure that the Millennium Development Goals are met in sub-Saharan Africa." Education allows rural areas to develop sustainability; contributes to eradicating hunger through more effective small-scale food production; enhances food security and improve the lives of the rural poor; using education of the rural poor to help teach them how to use improved food production technologies.<sup>3</sup>

*Financial constraints*

Primary education is critical to enhancing African lives, with more than 40% illiteracy rate on the continent.<sup>12</sup> In many countries, money is a major reason for the situation. Parents lack the money necessary to send their children to school, as for instance, sub-Saharan poor families spend almost a quarter of their revenue to pay for school fees. By contrast, the nations that have abolished school fees, like Ghana or Kenya, have experienced substantial surges in school enrolment.<sup>13</sup> In addition, Africa is heavily dependent upon foreign aid and developed countries contribute to funding education there. Notably for that very reason, Africa is expected to reach the MDG of universal primary education in 2130 rather than in 2015.<sup>14</sup>

**The case for the use of ICTs in primary education***The critical role of ICT*

Mahama Usman and Dr. Adrienne Yande Diop of the Economic Community of West African States (ECOWAS) recently jointly stated that "recourse of ICT is unavoidable in the development of West Africa. The 21st century is characterized by the development of ICT which are essential tools to access to knowledge;" ICTs representing a solution to "the diverse challenges confronting education in the ECOWAS region," Dr Diop emphasizes.<sup>15</sup> West Africa is not the only African region that believes in the critical role of ICT in education: a number of organisations have been created to increase the use of ICT in education, including pan-African organisations such as the African Education Knowledge Warehouse<sup>16</sup> or on a local-level, the South African Institute for Distance Education for instance.<sup>17</sup> Examples of initiative in support of the use of ICT in education have included the Commonwealth of Learning and SchoolnetAfrica partnering up to design a toolkit aiming at demonstrating African education policy-makers the possibilities laying behind the use of ICTs to enhance the quality of education locally.<sup>18</sup>

*ICT use*

The Organization for Economic Co-operation and Development (OECD) reckons ICTs can help achieve the second goal of the MDGs first by focusing on the education providers. ICTs may be used to train teachers at a distance and to enhance communication between teachers. In addition, education ministries and bodies may use ICTs to improve their own efficiency and effectiveness by enabling skill development through ICTs and by appropriate technological strategies. Then, the class material itself may be enhanced through access to available online resources. Finally, ICTs may help deliver bespoke educational and literacy programmes to poor girls and also to raise awareness among populations for the need for gender equality.<sup>8</sup>

*ICT and educational planners*

However, infoDev, the grant program ICTs managed by the World Bank, reminds us that in spite of all the potential benefits of using ICTs in primary education, such projects in the poorest countries have been associated with failure and high costs. To avoid such situation, infoDev recommends educational planners to think of the educational applications of ICTs before they think of the ICTs themselves. The focus of educational planners in certain cases should be to better train and support teachers. ICTs may help do that, as well as help educate children, but it should be encompassed within a wider strategy that addresses specific educational challenges rather than focus on ICTs themselves. In the meantime, innovative companies may help technology advances to further support the use of ICTs in education, through laptops or mobile phones for instance.<sup>9</sup>

*Mobile phone education*

Using mobile phones to enhance primary education allows Africa to overcome a lack of computers, electricity and Internet connectivity to touch a wider range of the continent's population, knowing that 28% of Africans have a mobile phone subscription.<sup>10</sup> Mobile learning initiatives or "mLearning" initiatives predominantly use mobile phones in Africa, among other mobile technologies, for a variety of purposes: for instance, SMS is used to support in-service teacher training in Kenya.<sup>11</sup>

*Issues to tackle*

Then, Africa suffers a lack of infrastructure that prevents many from accessing the Internet. Less than 1% of internet users worldwide are in Africa, and Internet access remains mostly constrained to capital and large cities, while rural areas lack connectivity. In the world, on average, 1 person out of 22 uses the Internet: in Africa, 1 person out of 825 does.<sup>19</sup> The International Institute for Communication and Development (IICD) sees the great need to increase access to computers, as it is a major issue in achieving better education through ICTs. It also sees the need for alternative solutions to the Internet, and encourages the development of off-line based applications (e.g. CD roms) to better reach children and teachers in Internet-deprived areas. The search for low-cost and practical solutions is of great importance as well, combining for instance the use of free open access platforms with that of low-cost or free second-hand computers provided by the private sector and not-for-profit initiatives.<sup>20</sup> The benefits of ICTs to primary education may well remain fictional to many Africans until such issues are fully addressed, in addition to deeper issues such as access to electricity and basic infrastructures, hence prompting the need for innovativeness on part of good corporate citizens in the ICT sector. Ericsson for instance, through the Millennium Villages initiative, tackles low connectivity issues by enhancing the state of local infrastructures and developing applications useful to villagers, for census purposes for example, to record the births and deaths of villagers, as well as their medical history.<sup>21</sup> This example illustrates the fact that only when ICTs prove innovative and adapt to Africa's conditions may they fully contribute to enhancing the human right to education.

*The \$100 laptop*

Maybe the most notorious case of ICT development for the sake of education in poor countries is the Massachusetts Institute of Technology's (MIT) One Laptop Per Child (OLPC) programme, also known as the (US)\$100 laptop, which aims "to create educational opportunities for the world's poorest children by providing each child with a rugged, low-cost, low-power, connected laptop with content and software designed for collaborative, joyful, self-empowered learning."<sup>22</sup> The laptop design accounted for many issues including energy use, notably using cheaper, more energy-efficient screens, and uses a wind-up crank on the side of the laptop to produce the energy needed by the machine.<sup>23</sup> In spite of that, OLPC has only sold 300,000 units in three years instead of the millions announced, along with an actual tag price of \$180 rather than \$100.<sup>24</sup>

**Conclusion**

The right to education, in addition to being a human right itself serves to enhance other human rights and work towards the MDGs, notably in terms of alleviating poverty, ill health and hunger. If money and HIV/AIDS remain major issues in improving primary education in Africa, the use of ICT and innovation on part of businesses and organizations in developed countries, along with appropriate funding and planning, may help tackle specific educational issues and bring Africa closer to achieving universal primary education. The issues Africa faces in terms of infrastructures may well represent opportunities for innovation, such as energy-efficient and low-cost in the case of the \$100 laptop. Teachers and children may benefit from such technologies and applications while helping Africa develop and ensuring a better tomorrow for the youth.

<sup>1</sup> [http://www.worldbank.org/ieg/education/facts\\_figures.html](http://www.worldbank.org/ieg/education/facts_figures.html)

<sup>2</sup> <http://www.globalenvision.org/library/8/1753>

<sup>3</sup> <http://www.fao.org/newsroom/en/news/2005/107444/index.html>

<sup>4</sup> <http://www.un.org/en/documents/udhr/>

<sup>5</sup> <http://www.un.org/ecosocdev/geninfo/afrec/subjindx/114spedu.htm>

<sup>6</sup> <http://www.un.org/millenniumgoals/education.shtml>

<sup>7</sup> <http://www.unglobalcompact.org/aboutthegc/thetenprinciples/principle1.html>

<sup>8</sup> [http://www1.oecd.org/dac/ictcd/docs/otherdocs/Forum\\_0303\\_roomdoc6.pdf](http://www1.oecd.org/dac/ictcd/docs/otherdocs/Forum_0303_roomdoc6.pdf)

<sup>9</sup> [www.infodev.org/en/Document\\_334.pdf](http://www.infodev.org/en/Document_334.pdf)

<sup>10</sup> <http://blogs.worldbank.org/edutech/videos/mobiles-0>

<sup>11</sup> <http://www.elearning-africa.com/newsportal/english/news70.php>

<sup>12</sup> <http://www.sil.org/literacy/litfacts.htm>

<sup>13</sup> <http://www.mdgmonitor.org/story.cfm?goal=2>

<sup>14</sup> [http://www.bbc.co.uk/worldservice/specials/1627\\_new\\_africa\\_ws/page3.shtml](http://www.bbc.co.uk/worldservice/specials/1627_new_africa_ws/page3.shtml)

<sup>15</sup> <http://allafrica.com/stories/201003100841.html>

<sup>16</sup> [http://www.schoolnetfrica.org/english/about\\_aekw.html](http://www.schoolnetfrica.org/english/about_aekw.html)

<sup>17</sup> <http://www.saide.org.za/frontend/>

<sup>18</sup> <http://www.col.org/resources/publications/operational/Pages/africanToolkit.aspx>

<sup>19</sup> [http://www.idrc.ca/en/ev-41643-201-1-DO\\_TOPIC.html](http://www.idrc.ca/en/ev-41643-201-1-DO_TOPIC.html)

<sup>20</sup> <http://www.iicd.org/files/icts-for-education.pdf>

<sup>21</sup> [http://www.article13.com/A13\\_ContentList.asp?strAction=GetPublication&PNID=1499](http://www.article13.com/A13_ContentList.asp?strAction=GetPublication&PNID=1499)

<sup>22</sup> <http://laptop.org/en/>

<sup>23</sup> <http://news.bbc.co.uk/1/hi/technology/4445060.stm>

<sup>24</sup> <http://www.fiascoawards.com/continguts/general/fitxa.php?id=11>