

Transforming agricultural education through technology

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For decades, African governments have used varying policy instruments in an attempt to improve farming productivity. But most subsistence and small-scale farmers continue to use traditional tools and processes, resulting in poor yield improvements.

In a modern world, digital technology opens vast untapped potential for farmers, investors, and entrepreneurs to improve efficiency of food production and consumption in Africa. From precision farming to an efficient food supply chain, technology could bring major economic, social, and environmental benefits.

African entrepreneurs are interested in helping farmers to improve their yields and are beginning to deliver solutions to small-sized African farms at cost models that farmers can afford. This is being made possible by the rapid growth in access to farming technology as cloud computing, computing systems, connectivity, open-source software and other digital tools become increasingly affordable and accessible.

In June, the Subtrop Transformation Summit identified three key issues required for successful transformation of the agriculture industry: the need for co-operation between commercial farmers and emerging farmers; access to funding; and proper training.

When it comes to training and agri-education, technology is the perfect catalyst. Just as progress is being made in farming techniques, so is the use of similar advances to drive skills and education.

Never before have so many people had access to smart phones, the internet and the ability these provide to seek and find knowledge while they continue to earn a living. And although Africa as a continent still lags the rest of the world in terms of most information and communication technologies (ICT), access to mobile phones and the internet continues to explode.

A report by GSMA (Global System Mobile Association) recently noted that unique mobile subscribers in sub-Saharan Africa are expected to grow from 420 million at the end of 2016 to 535 million in 2020, with an estimated 40% having mobile Internet penetration.

Similarly, a growing number of submarine cables connecting Africa to the rest of the world is helping to grow the availability of international bandwidth in Africa, reduce the cost of global communication and improve access for more people.

Mats Granryd, director general of GSMA notes that: "Mobile is also offering sustainable solutions that address the lack of access to services such as health, education, electricity, clean water and financial services, which still affect large swathes of the population. As sub-Saharan Africa transitions to higher levels of mobile engagement, underpinned by growing access to mobile data services and smart devices, we are seeing a flourishing mobile ecosystem emerge."

Having recently launched an agricultural e-learning institution, [AGRICOLLEGES international](#) (ACI), our aim is to educate new young learners and up-skill those already involved in the industry. We are bringing this vision to life through the use of technology that will enable substantial improvements to the delivery of more relevant, up to date and accessible agricultural course content. The delivery of the coursework will be via smartphones and other devices with access to the internet, providing an exciting blended and shared-learning opportunity.

We are revolutionising the way that agriculture education is delivered in Africa. Through Desire2Learn's (D2L) Brightspace platform, we are building the technical platform for our Learning Management System (LMS), which will include advanced tools and functionality to enable a full suite of online learning opportunities. Mumbai based innovations and education consultancy, Consilience, will design and build the courses offered on the Brightspace learning platform.

Add to this the use of various apps and online tools, and the complete experience is going to be an industry game changer.

One app, for example, makes use of artificial intelligence to evaluate the speed at which each student is able to study and learn, and adjust the delivery and speed at which the course-work is taught. This leads to improved pass rates through better understanding of the material. Other tools exist to provide web-based career guidance, where various skill sets are matched to suitable career prospects; while yet others will be able to assess what field of the agri-industry a student would be best suited to.

Critical for an online learning system is the ability for students to go to a wi-fi hot spot, download the next set of course-work and then return home where they can continue studying at their own speed.

So, for the first time, it has become a reality that the teaching of the Agriculture Sciences can be scaled to include huge numbers of students. The platform offers them a more affordable, flexible, top-class learning platform, without the high cost of attending a formal, traditional bricks-and-mortar learning institution and without all the associated travel and boarding costs.

Having recently attended the 2017 Education Innovation Summit, where the focus was clearly on transforming education with technology and disrupting Africa, I am confident that we are on the right track. The time is here for technology and transformation to converge and turn the future of food security on the African continent into a structured reality.

Indeed, the farming community is optimistic that extreme hunger can be reduced in Africa, by our generation, by significantly transforming the agricultural sector - the industry that employs an estimated 60% of the continent's citizens.

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