

The Virtuous Cycle

Opportunities to Advance Education in Nigeria



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Executive Summary

Implementing supported online learning could help increase access to education for millions of Nigerian youth, create new employment opportunities for skilled graduates, and lead to upskilling of professionals.

The challenges facing Nigeria's education system are well known, and while online education may yield some benefits, without addressing underlying gaps, it may further exacerbate the divide between privileged and underprivileged students.

In developed countries the rising cost of education has been a leading force for the transition to online education. Investment in edtech has been strong with leading players emerging and extending their offerings into new categories and substantially growing their user bases.

The outbreak of COVID-19 has accelerated the uptake of digital solutions and advanced a global transition towards a digital economy. This pandemic has forced more than 1.6 billion learners out of school globally due to nationwide or selective school closures in all but a few countries and triggered massive experiments in the use of online learning.

There are some encouraging programs that seek to solve the challenges that would frustrate the effectiveness of such solutions in Africa. These could provide a road map for workable solutions for Nigeria.

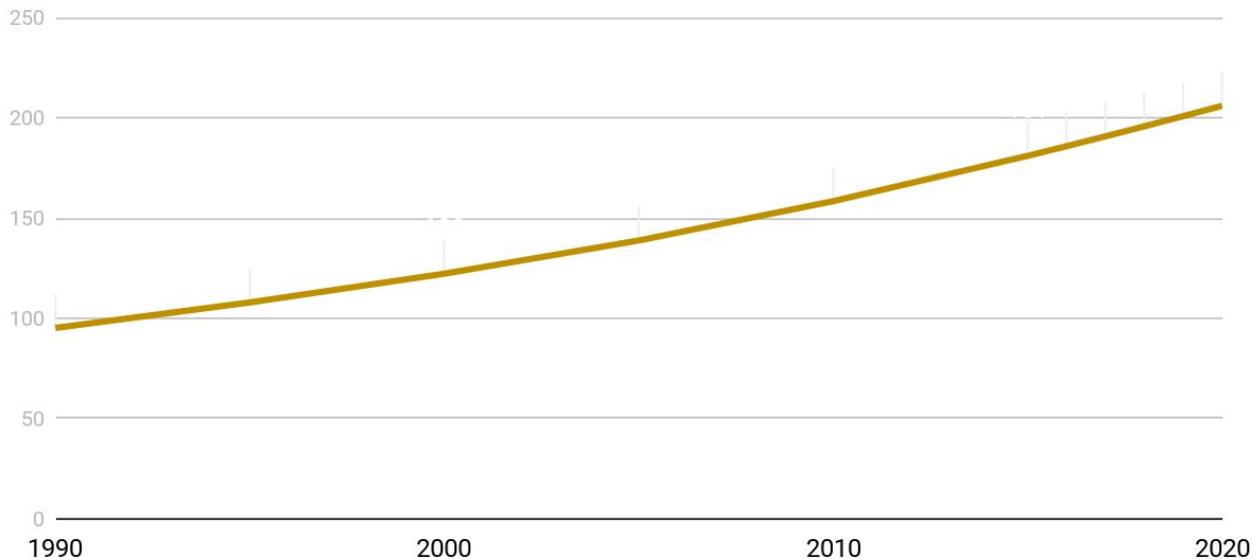
If managed properly, online learning could lead to a virtuous cycle where improved quality and access to education creates apprenticeship and upskilling opportunities and leads to economic empowerment in Nigeria.



Baseline - State of Education in Nigeria

Nigeria has a large, young, and growing population (over 200 million in 2020) which is dependent on the nation's education platform to lead the way to a brighter future.

Nigeria's Population Development (1990-2020)(millions)¹



Nigeria's education system is structured in three tiers: 1. basic, which includes primary and junior secondary education (nine years); 2. Post-basic, which includes senior secondary education (three years); and 3. tertiary education (four to six years, depending on the program of study).

Administrative responsibility is spread across Federal, State, and Local Governments with the Federal Ministry of Education setting overall policy and ensuring quality control, but primarily focused on tertiary education. Basic education is largely the responsibility of local governments with state governments managing post-basic education.

Basic and Post-Basic Education:

The Universal Basic Education Act of 2004 entitles all Nigerian children to nine years of uninterrupted basic education. However, it is estimated that more than 13 million children aged 5-14 years are not in school².

¹ CIA World Factbook

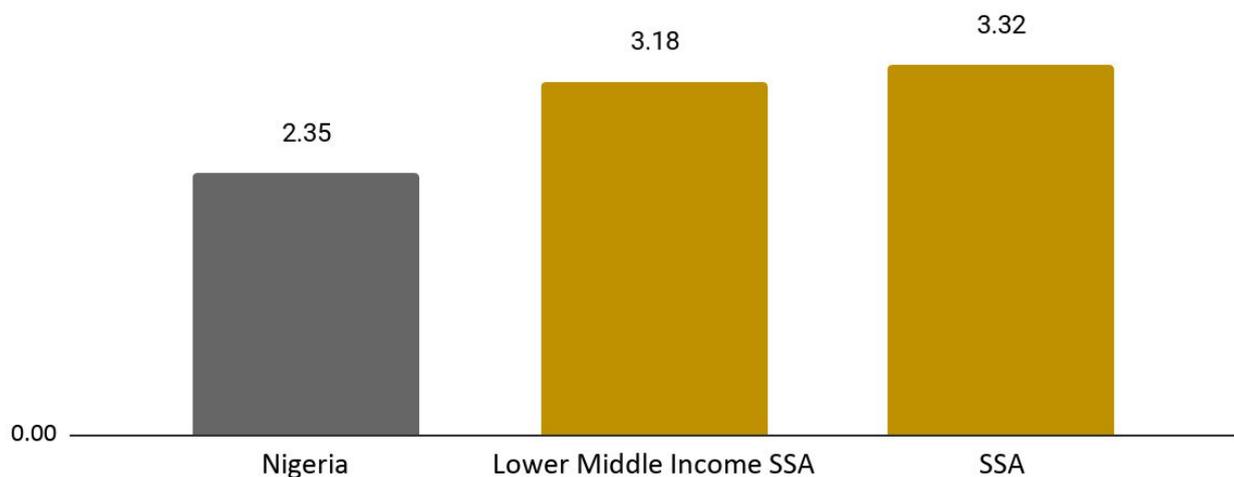
² United Nations Children's Fund (UNICEF) survey



For those who do attend, the quality of instruction offered in Nigerian schools often leaves a lot to be desired. The skill sets possessed by those graduating secondary school, as measured by the World Economic Forum, has remained below the average for sub-Saharan Africa and even other lower middle-income countries in sub-Saharan Africa.

Skillset Of Secondary-Education Graduates

(2019)(Scale of 1-7 with 7 being fully prepared and 1 being not prepared at all)³

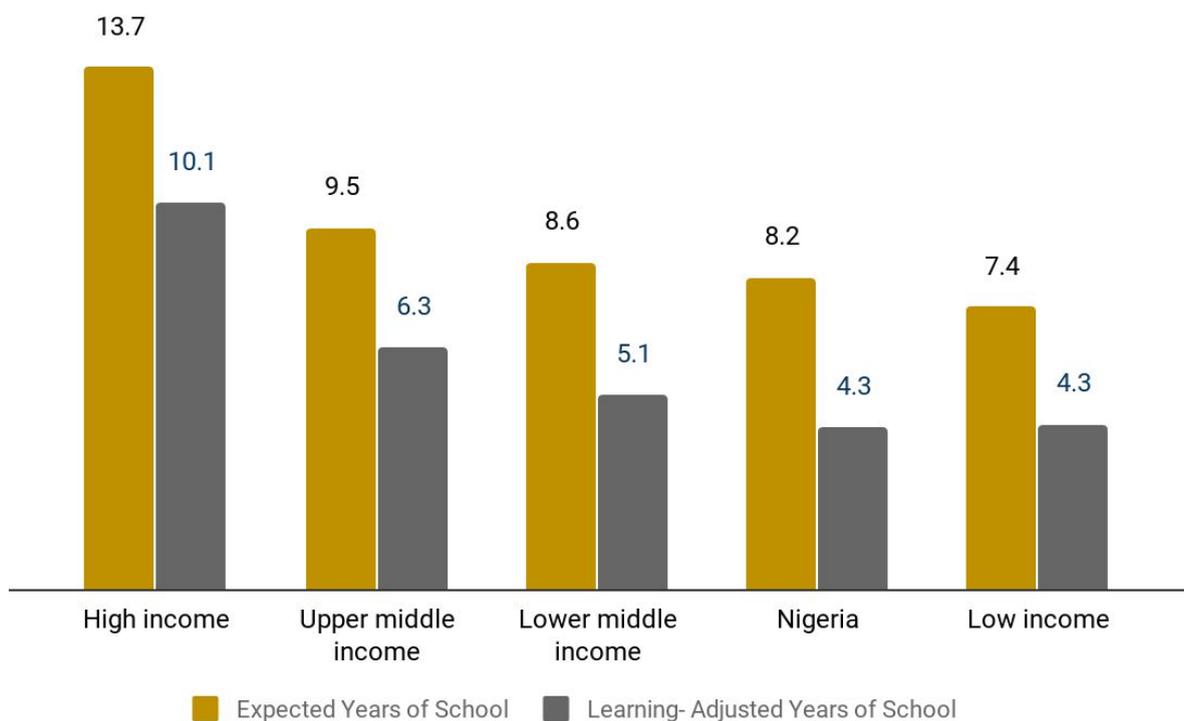


According to the World Bank Human Capital Index (HCI), a child born in Nigeria today will acquire, on average, 8.2 years of school (pre primary, primary, and secondary) by the age

³ World Economic Forum - Global Competitiveness Report - 2019

of 18. Unfortunately, when adjusted by the quality of learning, this 8.2 years is equivalent to just 4.2 years of actual learning. This implies that the average Nigerian child who completes JSS 2 (second grade of Junior Secondary School) would only have learned the material upto the level of a primary 4 student. Nigeria trails behind other lower-middle income countries in sub-Saharan Africa for which students learn almost 20% more (5.2 years of actual learning).

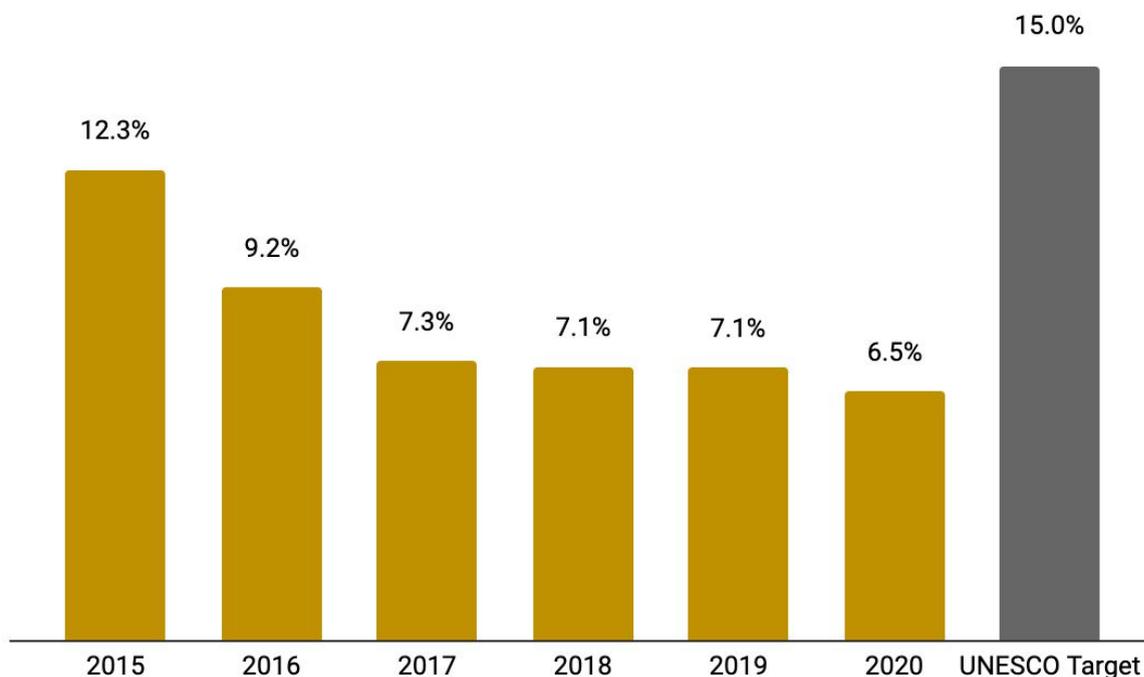
Human Capital Index - West African Expected and Learning-Adjusted Years of Education (2017)(Years of Education)⁴



As with other critical sectors, the Nigerian government has not been able to allocate sufficient resources to meet the needs of the education. The United Nations Education, Scientific and Cultural Organization (UNESCO), recommends that 15-20% of a developing country's spend should go to the education sector to enable them to meet rising demand. However, the amount allocated to education has declined from 12.% of the 2015 budget to just 6.5% of Nigeria's pre-COVID-19 2020 budget, with nearly 90% of that going to fund recurrent expenditures.

⁴ World Bank Human Capital Index, AACCS Analysis

Proportion of Nigerian Budget Allocated to Education Vs UNESCO Target (2015 - 2020)(%)⁵



Federal and State authorities are currently undertaking several projects targeted at improving the condition of education in Nigeria, notable examples include:

- Homegrown School Feeding Programme - Launched by the Buhari administration to tackle poverty and improve the health and education of children and other vulnerable groups. When fully realised the program aims to support States to deliver food to over 24 million school children. If successful this will be the largest school feeding program of its kind in Africa.
- Better Education Service Delivery for All (BESDA) program - A World Bank sponsored program designed to bring out-of-school-children into the classroom.
- EdoBest - Basic Education Sector Transformation Program, which is deploying a multi-pronged strategy to improve Edo State's 1,500 public primary and junior secondary schools, develop 15,000 government teachers, and impact 300,000 pupils.

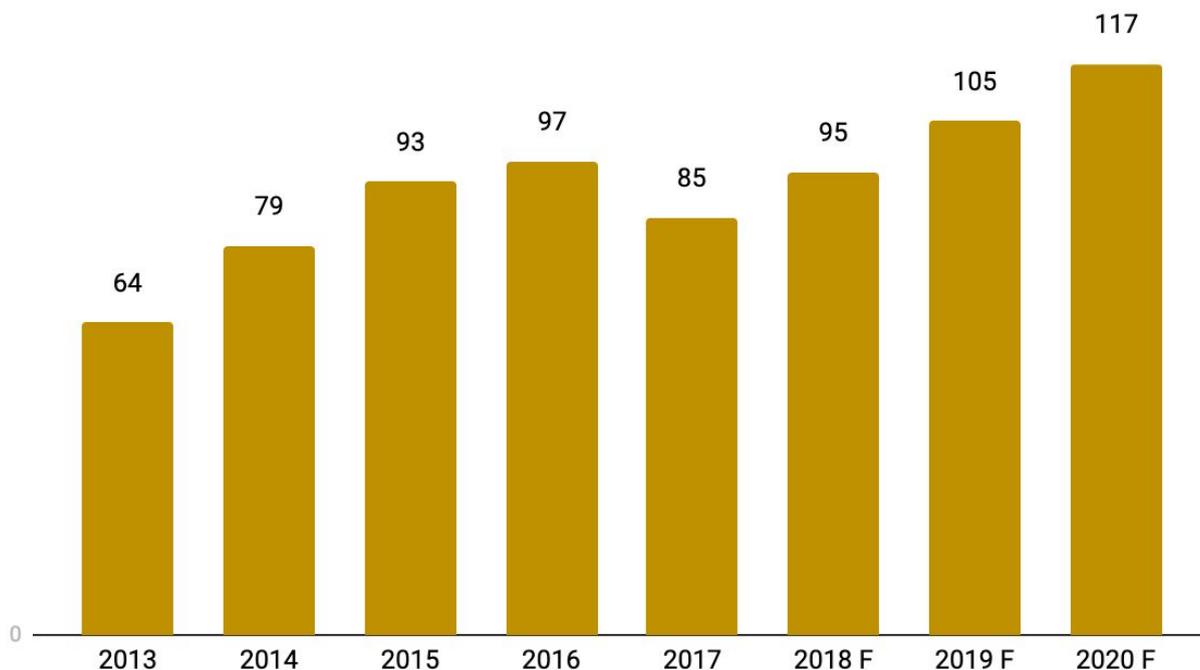
Tertiary Education:

At the tertiary level, there are major issues as well. There are less than 600,000 seats for around 2 million applicants each year.

⁵ BudgiT - 2020 Budget Analysis and Opportunities

Nigeria sends more students to foreign universities than any other country in Africa. The number of outbound students is growing rapidly - an estimated 117,000 students are studying in foreign universities in 2020.

Number of Outbound Nigerian Students
(2013-2019)(,000)⁶



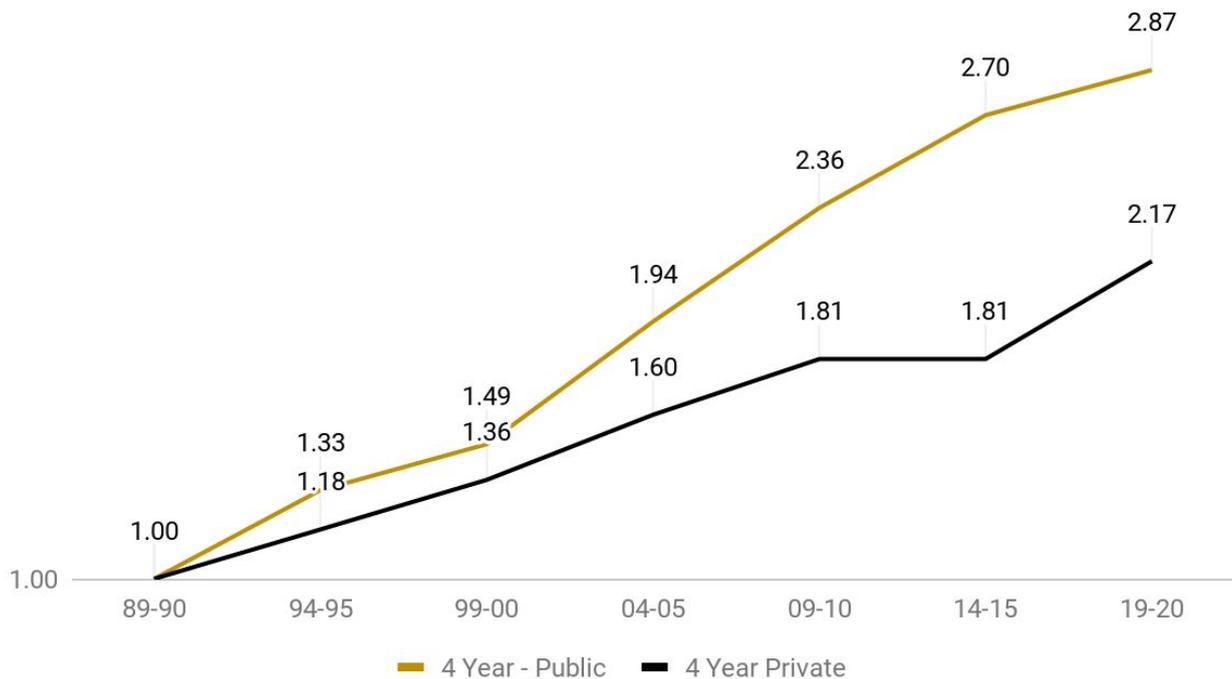
There is also the perception that what students learn at university does not give them the skills needed for available jobs. This mismatch in skills is particularly acute for professional employees and managers where practical experience is more important than theoretical knowledge supplied by existing academic curricula.

Benchmarks - Innovations from Developed Countries

Around the world, the cost of attending university is rising at a faster rate than inflation. In the US for example, the tuition and fees at four-year public universities has increased by 3x on an inflation adjusted basis between 1990 and 2020.

⁶ UNESCO Institute of Statistics (UIS)

US Inflation-Adjusted Published Tuition and Fees Relative to 1989-1990 Values
 (in 2020 \$)(1989-2020)⁷



Students are taking on increasing levels of debt to pay for college. The combination of rising cost and rising debt makes the return on investment in tertiary education less attractive and is dampening domestic enrollment.

For universities, domestic enrollment has been seeing steady declines. At the same time tightened immigration policies have reduced the number of foreign students able to attend American universities - and to pay full fees. Similarly, operating costs have gone up and government funding has been reduced.

There is also an increasing gap between the skills employers demand and those taught by colleges and universities. In computer science for example, there is a significant gap between the theoretical knowledge conveyed at many schools and the practical skills demanded by leading employers.

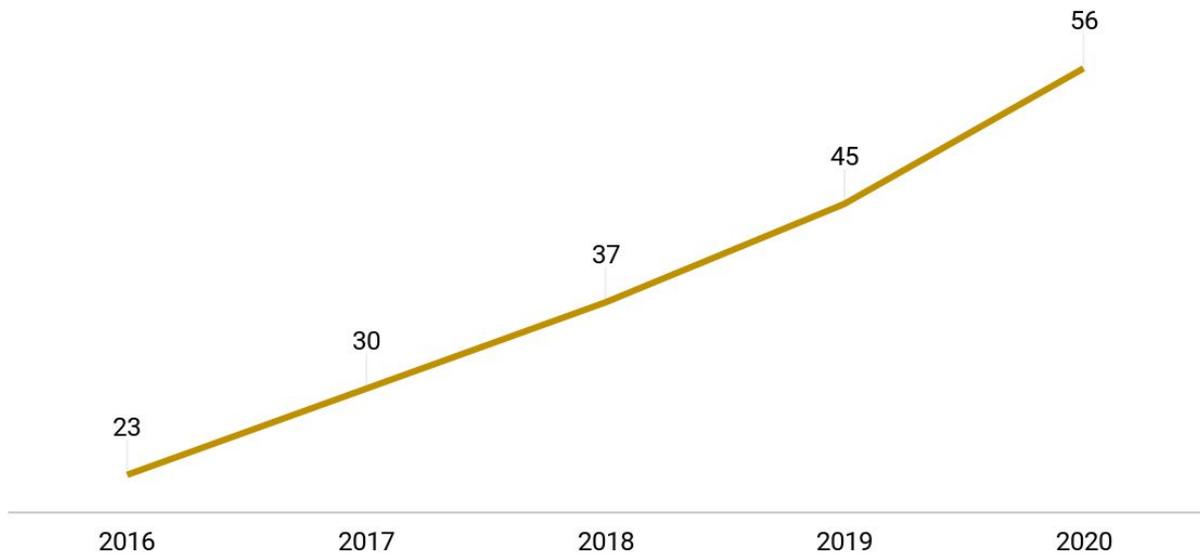
These factors, among others, are driving innovations in the way post-secondary education is delivered, financed, and credentialed.

Delivery - Two notable innovations in the way education is being delivered result in equivalent or even improved outcomes, improved access, and an improved financial proposition for students, learning institutions, and employers.

⁷ The College Board

The first is the spread of online education largely driven by Online Education Program Managers (OEPs) and marketplaces such as 2U and Coursera.

Coursera Enrollment Over Time
(2016-2020)(millions of students)⁸



The second innovation in delivery is the use of practical apprenticeship-based learning opportunities provided in partnership between universities and businesses. These models seek to bridge the gap between the theoretical knowledge covered at many schools and the practical skills required by key employers. Two notable examples are Northeastern Universities Align MS in Computer Science and Google’s Tech Exchange. Students at Northeastern earn credit for spending a portion of their time in curated full time externships. In addition to practical experience, if an employer wants to hire a student immediately, then any remaining coursework can be completed online. Tech Exchange is a program where students from select universities relocate and take courses (often taught by Google employees) in purpose-built facilities on Google’s Mountainview, CA campus.

Payment - One prominent innovation is the adoption of Income Share Agreements (ISAs). ISAs are contracts between students and their schools in which the school agrees to provide tuition funding in exchange for the student agreeing to pay the school a percentage of his/ her salary for a period of time after graduation.

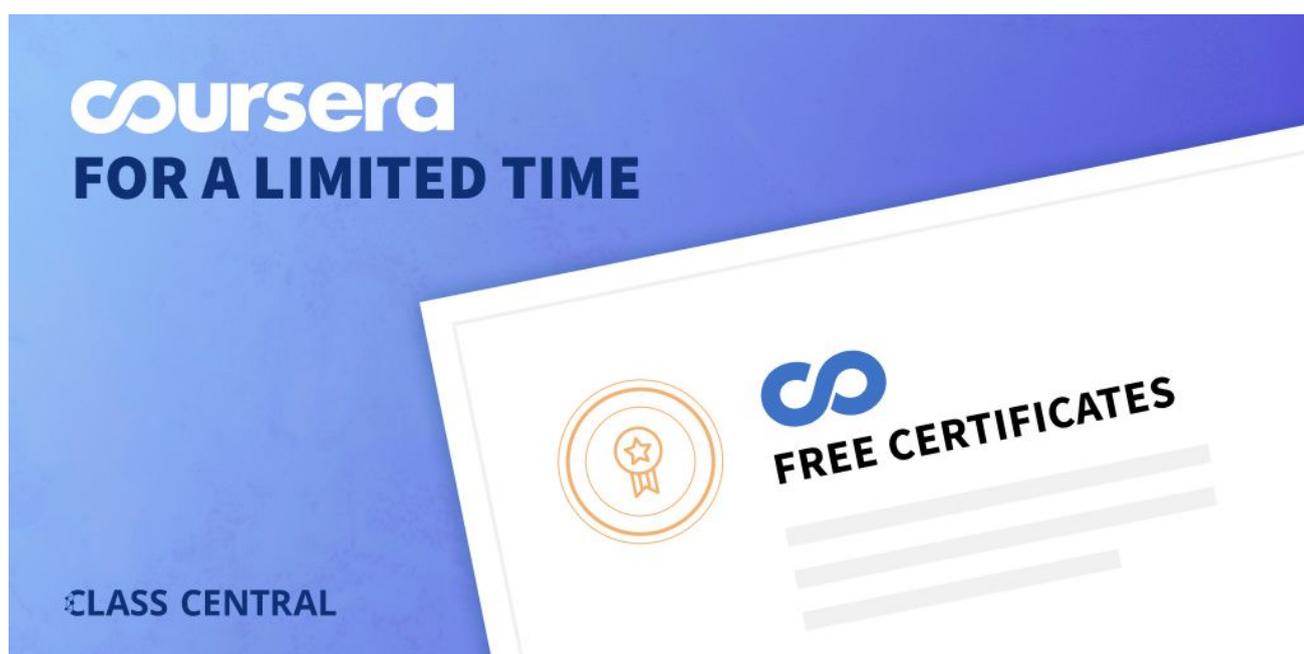
This model is meant to align the incentives of students and learning institutions with developing the necessary skills for employment and securing high paying jobs upon

⁸ Coursera

graduation. ISAs are best suited for fields which are in high demand and that pay well such as computer science.

Make School and Lamda School are two examples of for-profit universities deploying this model to increase the pipeline of qualified talent. Both programs train Computer Science graduates with the aim of supplying engineers to leading technology companies.

Alternative Credentials - Various digital certificates, short courses, and mini-degree programs now complement traditional degree programs. These programs offer students, who are generally working professionals, the opportunity to “upskill” and expand their qualifications in an effort to advance their careers.



Ingenuity - Innovative Solutions From Emerging Markets

With the availability of lower cost computers (and other connected devices), the widespread availability of broadband, and the advent of new digital tools, the way in which young people learn, communicate, and entertain has evolved more in the last 15 years than it has in the previous 570 years - making innovation in education imperative.

Innovation requires taking steps to break away from the status quo and try new approaches. Various such approaches are being pioneered across emerging markets to do just that.

Leverage technology to improve primary education:

Bridge International Academies began by building low-cost private schools. Key elements of their model included deploying lower cost instructors (often uncertified) and using scripted standardized lessons delivered electronically.

Despite widespread support from international backers (including the Bill & Melinda Gates Foundation, Khosla Ventures, and the Omidyar Network, and others), the company's model faced considerable pushback from teachers' unions and regulators; and questions about the quality of education delivered.

Bridge has since experimented with various approaches to working with stakeholders to improve existing schools rather than working to replace them. In Nigeria's Edo State, Governor Godwin Obaseki, has championed the EdoBEST (Edo Basic Education Sector Transformation) program, which strives to improve the state's 1,500 public primary and junior secondary schools, develop 15,000 government teachers, and impact 300,000 pupils. Bridge is the technical partner for the Supporting Teachers to Achieve Results (STAR) component of the program. In this capacity, Bridge is working on enhancing teacher capacity and capability. Their work involves leveraging technology and empowering teachers to improve learning outcomes through intensive training, ongoing support, teacher guides, positive classroom management techniques, and real-time monitoring of lessons.

Increase efficiency of teachers in secondary education through distance learning:

In the Amazonas state of Brazil, access to a secondary school is a major challenge in thousands of remote villages. There is also a significant shortage of qualified teachers. As a result, historically there was a high dropout rate in the state.

The state's Media Center established a hub and spoke model through which existing classrooms and/ or community centers are equipped with basic technologies and tools. Subject specific expert teachers (lecturing teachers) deliver lectures through a two-way video system from a studio in the capital. Each classroom is managed by a tutoring teacher who serves as the bridge between students, technology, curriculum, and the lecturing teacher. Tutoring teachers are generalists, and this allows the system to deploy one teacher per classroom rather than one teacher per subject. With this system, even in the smallest most remote villages, students can access content such as physics when there is not a teacher qualified to teach that subject in their area.

Teacher quality is also addressed as ongoing teacher training is carried out via distance learning, and lecturing teachers are encouraged to earn advanced degrees and their salaries and seniority is linked to such qualifications.

Create links between education and work:

Andela and the CAMFED (Campaign for Female Education) Learner Guide Program are two examples of apprenticeship-based models that establish a direct link between skill attainment and access to employment and/ or start-up capital.

Andela, is a tech talent accelerator. Entry is competitive and applicants are required to pass rigorous tech and leadership assessments. Less than 2% of those who apply are eventually accepted. Those who make it successfully through the application process are trained in the use of key tools for remote work and taken through a six-month technical bootcamp. After completing the bootcamp, engineers are placed with tech companies to work as remote, full-time employees.

Andela provides its team members with a world-class work environment and the support structure to help succeed and manage interactions with clients. Andela also provides a clear career path for engineers with requirements for advancement and the option to be hired by the international tech companies with whom they work.

CAMFED is an NGO that supports girls from marginalized backgrounds as they pursue their secondary school education. CAMFED Learner Guides are secondary school graduates who were supported by CAMFED. They are trained and posted to their local communities. Learner Guides serve as mentors and role models for current students. They also volunteer with schools, communities, and governments to keep vulnerable children in school and on track to overcome the challenges of marginalization. After completing the 18 month Learner Guide Program, the young women are given assistance to find full time jobs or supported in starting their own businesses through interest-free loans.

Global Experiment - Shifting to Online Learning During COVID-19

The COVID-19 crisis has accelerated the adoption of digital solutions, tools, and services and sped up the global transition towards a digital economy. In Education, 186 countries have instituted national or selective school closures forcing nearly 1.6 billion students -- 90% of the world's learners - out of school⁹.

To cope with the shock of unexpected closures, many schools have shifted from in-person learning delivered in physical classrooms to online learning delivered using a variety of technology platforms. These digital education platforms have until now largely remained a back-up for many educators and most were not ready for a complete switch. With teachers scrambling for solutions to distribute and manage assignments, Google Classroom, which is free for most teachers, saw users double between January and March to over 100 million users. The pandemic has boosted Google Classroom to 50 million downloads on Android

⁹ COVID-19 Impact on Education - 24/4/2020

and to the #1 education app on both Android and iOS According to AppBrain. This is even more impressive given that the Classroom app wasn't even in the top 100 education apps in early March.

The rapid shift has highlighted the importance of infrastructure (networks and devices), platforms (stability, interactions and ability to improve), and preparedness of teachers. The task of navigating the new digital classroom also extends beyond educators to parents who now find themselves having to assume roles as teacher aides.

While, where possible, schools and universities have tried their hands at distance learning over the past few months, the presence of stark inequalities in digital readiness within societies have been brought clearly into focus. In the US there is a significant gap between those from privileged and disadvantaged backgrounds. Virtually all 15-year-olds from a privileged background said they had a computer to work on while nearly 25% of those from disadvantaged backgrounds said they did not. Some schools and governments have been providing digital equipment to students in need, but many more have not been able to.

Without this mandatory shift toward online learning particularly in public schools, such lessons would not have been learned so quickly.

The digital literacy skills required for success in the digital economy are the same skills that allow teachers to move online and manage their virtual classes. Children must learn these skills to survive in the economy of the future, and it is critical that educators and policy makers find ways to overcome these challenges.

The Path Forward - Requirements For Change In Nigeria

Innovative approaches to supported online learning could help increase access to education for millions of Nigerian youth, create new employment opportunities for skilled graduates, and lead to upskilling of professionals. According to the late Harvard University professor Clayton Christensen, "innovation and disruption have better chances of success and achieving a high impact if they emerge at the periphery without posing a direct threat to the status quo".¹⁰ To succeed in transforming education in Nigeria, disruptive ideas will have to start small, iterate, and expand strategically. Stakeholders should:

- Look to form partnerships involving government, existing schools, and private employers
- Deploy a mix of tech and non-tech innovations with locally developed adjustments to overcome any difficulties
- Experiment with different options in localized pilots - one size does not fit all - with continuous evaluation and adjustment before scaling
- Look for opportunities to provide direct pathways from education and skills attainment to employment opportunities

¹⁰ Christensen, Johnson, and Horn 2008



About AACCS:

AACCS is an international consulting and principal investments firm defined by its purpose which is to “bring the winning edge by inducing you to think out of the box, and driving the construction of the capabilities to bring those thoughts to life“.

Our creed is a way of life that continually pushes you to walk roads less travelled be it in business, public service ,community development ,medical & scientific research or global and human relations. It is also important to note that one time disruption is not enough. Our creed demands that we stay prepared, consistently reimagine the possible, and constantly strive to improve.

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