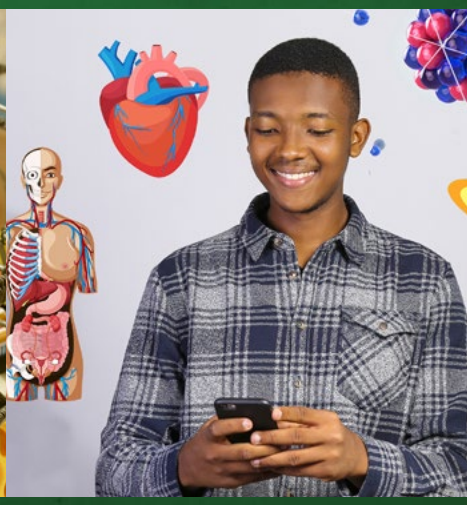
African Union

AFRICA EDUCATION INNOVATIONS HANDBOOK 2020

Building Innovative Education and Training Ecosystems to Create Impact at Scale





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AFRICA EDUCATION INNOVATIONS HANDBOOK 2020

Building Innovative Education and Training Ecosystems to Create Impact at Scale

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Contents

INNOVATIONS FROM CENTRAL AFRICA

University Administration System

School management and university administration software

Country of Implementation: Democratic Republic of the Congo
Organisation: Université Evangélique en Afrique (Evangelical University in Africa)

Problem which the Innovation addresses

The administration and management of grades at universities in the Democratic Republic of the Congo lack efficiency and transparency. One reason is the minimal use of information and communication technology (ICT).

Until now, universities in the Congo lack a technical tool for online management, which leads staff and students to spend more time performing administrative tasks. Electronic support and/or automation of grade computation reduce the time necessary for performing administrative tasks and allow teachers to focus on the learning process. Furthermore, for the students these tools make their academic status more transparent (which helps in the fight against corruption).

How the Innovation Functions

The University Administration Tool (UAT) is a web application developed with Java and open-source tools for managing student data (registration, fee payment, grades, and printing official documents), as well as for giving online courses and facilitating library access. Each user (administrative staff, lecturer, student) can log on to his/her personal account to perform a specific task, such as online registration, assigning grades, checking grades, organizing class council meetings ("délibération"), fee payments, give and participate in online courses. The UAT is accessible via intranet or internet with a computer or smart phone and can be installed in the cloud or locally ("on-premises"). The UAT is the only software that is adapted to the different needs of university stakeholders while respecting all the rules of the Congolese government (as determined by the "Vade mecum").

Impact or Success

The UAT is already installed in six universities that have expressed their satisfaction with the simplification of the student affairs management. Additionally, during this period of COVID-19, the UAT facilitates online courses for them.

The UAT automates grade computation and is an app that combines a digital library (PMB services), an online learning platform (Moodle) and a video conferencing system (Jitsi).

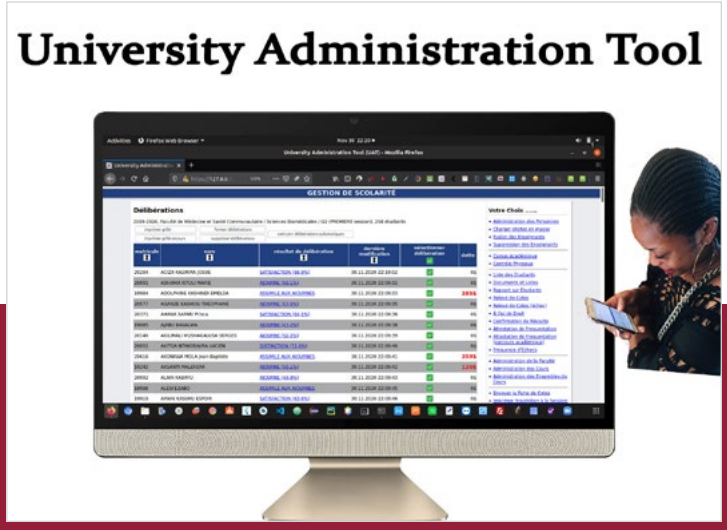
This system makes administration, for example using statistics or printing official documents, more efficient.

Sustainability

This tool can be installed on the university's existing infrastructure or in the cloud if the infrastructure is inadequate. If necessary, we provide technical support to facilitate installation.

We train technical staff and users (administrative staff, teachers and students) and also offer emergency assistance (technical or functional).

The software can be adapted to the country's education system, for example, switching to the Bachelor-Master-Doctorate system.



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Project link:
https://uat.uea.ac.cd/UATStudent/homeStart.jsf

Orientis

Technology at the service of school and vocational guidance

Country of Implementation: Chad
Organisation: Boulama International Consulting

Problem which the Innovation addresses

Girls and boys select their courses in different ways. Girls opt for literary courses and boys for science courses. Consequently, they do not have access to the same knowledge or professional opportunities, which leads girls to less profitable professions in the labour market. To face this situation, it seems appropriate to set up a guidance tool that provides support without distinguishing gender and with complete impartiality. The results obtained are based on academic performance (subject grades) and area of interest.

How the Innovation Functions

The technology that we provided to guidance counsellors is an app that can be used offline to help pupils and students make judicious and coherent academic and professional choices, considering their aptitudes, areas of interest, as well as their attitudes and the realities of the world of work. The app, which comprises 5 modules, guides the user in 3 steps: a set of aptitude tests which help generate a psychological profile, a psycho-technical test which identifies areas of interest of the pupils and students, as well as a module that defines the sectors and professions that are open to them.

This app is unique because it helps the guidance counsellors perform their duty without gender discrimination, as there is no consideration of the difference between boys and girls. The results obtained are based on academic performance (core subjects' grades) and areas of interest to ensure a balance in the school environment.

Impact or Success

The use of this application has significantly reduced the percentages of failure, dropouts and school maladjustments, while improving the academic success rate. New data generated by the app show that the Primary Completion Rate (PCR) for girls has increased from 30% in 2017 to 45.5% in 2020, while the Repetition Rate has declined by 16.4% and the Dropout Rate by 19.7%. The gross Parity Index (PI) is 0.65. We currently have no less than 10,000 students in our database with whom we work regularly.

Sustainability

The application will evolve into a web-based application but will retain the traditional offline model. Teachers will be trained online on its use. And given its trilingual nature (Arabic, English, French), the project can be expanded on a large scale and easily integrated into the education systems of other African States as it is being improved and adapted to the contexts and socio-economic realities of target countries.

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TchadEducationPlus

Secondary school courses in the form of ebooks, applications and MP3 files for distribution via mini memory cards and the internet

Country of Implementation: Chad
Organisation: Label 109

Problem which the Innovation addresses

Students in public schools in Chad, whose parents are generally poor, face a serious shortage of textbooks resulting in an extremely high ratio of students per textbook, according to the United Nations Educational, Scientific and Cultural Organization (UNESCO). This ratio could even reach zero book per student. Furthermore, there are no libraries.

How the Innovation Functions

The TchadEducationPlus project collects and digitizes the best courses in the national private secondary schools' curricula for conversion into autonomous Android applications and eBooks (PDF format) that are downloadable free of charge from the platform *http://www.tchadeducationplus.org*. These can be distributed widely. The project also produces incredibly low-cost booklets (USD 2.60) which are used to set up libraries in public secondary and high schools in Chad. Since internet availability is unreliable and expensive in Chad, the project relies on mini memory cards (SD - secure digital type) which transform any mobile device into an access or distribution terminal via Xender or Bluetooth, without requiring internet connectivity. Students without Android devices may borrow booklets from the library. To achieve a wide distribution and high accessibility, which will be fully digital and mobile considering that a majority of students possess non-Android phones and cheap MP3 players, the project is converting all lessons into podcasts which students can listen to individually or in groups anywhere. These podcasts can be readily accessed and distributed free of charge via a mini memory card and can be transferred from phone to phone via Xender and Bluetooth. These are the elements that make this project unique.

Impact or Success

In 2017, the project was in the pilot phase with the classe de Troisième (Form Four), which had a direct target population of 1,000 students in 2 colleges and registered 25,000 downloads. In 2019, it grew to involve 4 high schools with over 10,000 students in all classes from Sixième (Form One) to Terminale (Upper Sixth Form), with over one million students and teachers involved, the establishment of 4 libraries and 2,000,000 downloads. During this COVID-19 pandemic, students have continued to revise their lessons on our website, which is unique in that it has all courses of the programme on different media. Two sources of funds from UNICEF and the Swiss Cooperation guarantee success for the project. The podcast lessons will double the project's success rate. A survey conducted in conjunction with the Analysis and Forecasts Department of the Ministry of National Education has revealed that one student shared digital lessons with at least 5 others via Bluetooth or Xender. In terms of students' appreciation of the project, 57.84% were very satisfied, 29.17% were satisfied and only 9.80% were not very satisfied. Concerning access to courses of the project, 43.14% accessed via memory card, 24.26% via the internet and 32.60% via the booklets.

Sustainability

To bring innovation to scale sustainably, it is necessary to link a database of eBooks, Android applications and podcast courses for use on all types of telephones, especially the cheapest ones (costing less than USD 10) which a large majority of students own and MP3 players (costing less than USD 5). The idea is to focus on mini memory cards that transform a telephone into an access or transfer terminal, which is less costly in situations where internet connectivity is unreliable and expensive for students. Financial support and involvement of mobile phone companies are also required.

Contact:
Label 109
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Project link:
http://tchadeducationplus.org

If-Tech

IF-Tech is a dematerialised educational support and professional training platform, accessible online via a box and Wi-fi antennas without internet connection.

Country of Implementation: Cameroon
Organisation: BYBEGOO

Problem which the Innovation addresses

The problem we are addressing is that of enabling students in examination classes to pass their exams in this time of COVID-19 and young people seeking professional expertise to obtain a qualification in the digital sector.

How the Innovation Functions

In order to promote social distancing and to limit meetings in this time of COVID-19, we have set up a solution in partnership with local teachers collectives, which will allow young people to receive professional training and dematerialised academic support courses from their homes. This innovation called If-tech is a remote training and academic support platform accessible via Wi-Fi antennas without internet connection in the homes. Through monthly subscriptions that give them access to all subjects in the school program, these young people connect to the platform via their smartphone, tablet or computer. We are currently settled in a neighbourhood for the pilot phase where we are reaching 3500 young people registered as freemium on the platform. In the next three years we hope to reach 10,000 young people. Our particularity is that we work with local teachers' collectives that offer local content that is compatible with the current school program; moreover, our solution responds to the digital divide.

Impact or Success

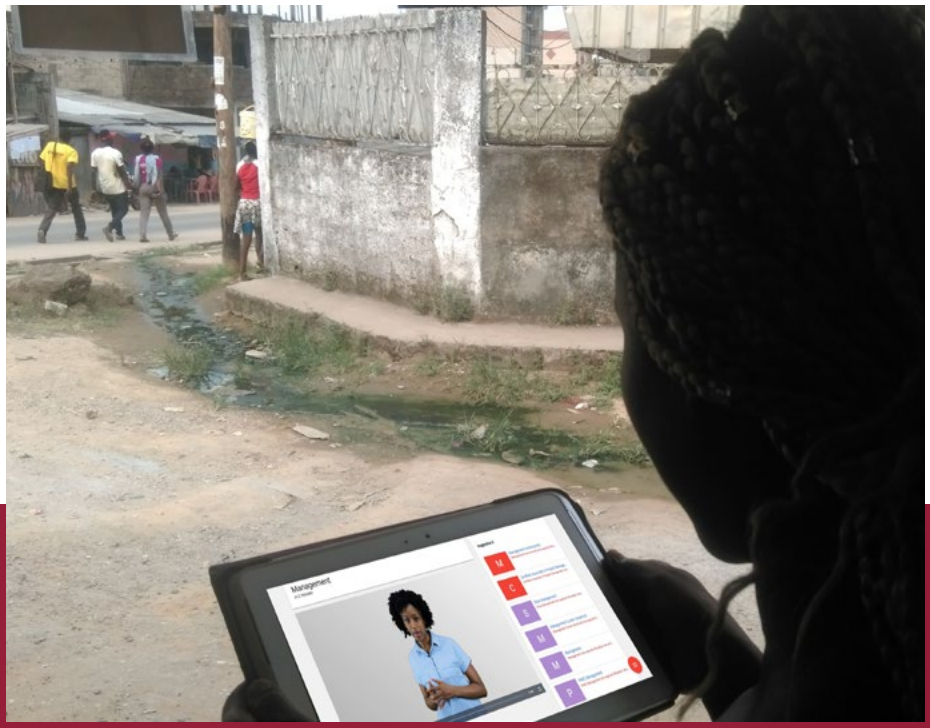
After 4 months of implementation of the project in one neighborhood here in Cameroon, here are the statistics collected:

- Number of users: 3150
- Number of videos present on the platform: 332 (all the videos are updated every 1st Sunday of the month)
- Total sum of videos views: 9149 views (all videos combined)

We noted that 42% of users use their PCs to connect, compared to 50% who connect with Android smartphones. The other 8% are shared between terminals on Linux and Apple.

Sustainability

Our innovation can be scaled up in a sustainable way through partnerships with public decision-makers.



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INNOVATIONS FROM EASTERN AFRICA

M-Lugha app

Offline and interactive mother tongue based learning app that translates the early childhood syllabus to local languages

Country of Implementation: Kenya
Organisation: Northfront Technologies Limited

Problem which the Innovation addresses

A new paper by UNESCO's Global Education Monitoring Report (GEM Report) reports that 40% of the global population does not access education in a language they understand. The policy paper 'If you don't understand, how can you learn?' released for International Mother Language Day (21 February) argues that being taught in a language other than their own can negatively impact children's learning, especially for those living in poverty.

M-Lugha solves the following problems:

- Remedy for lack of enough teachers due to insecurity in the northern part of Kenya because terrorists target non-local teachers in the region.
- Solve language barrier because the language of instruction is mostly not the first language of the learner. Equip out-of-school youth with basic literacy and numeracy.
- Reduce school dropout due to constant movement from one place to another, especially for girls, in search for pasture for the livestock.

How the Innovation Functions

Most rural communities in Africa and Asia comfortably speak and understand their first language (L1) before they go to school. M-Lugha app is an offline mother tongue based, multilingual, multicultural and interactive mobile app that translates the Early Childhood Education syllabus (all subjects) to indigenous languages. With solar powered kids tablet and M-Lugha apps, rural kids and out-of-school youth can access basic literacy and numeracy digital content anywhere and anytime while learning in their mother tongue!

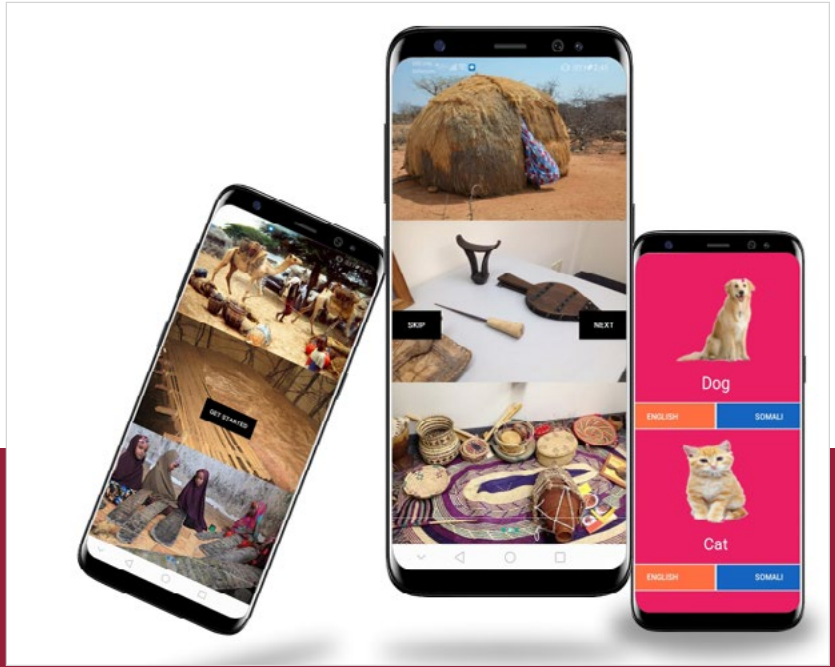
Impact or Success

The first free version of the app has more than 10,000 downloads and customers' feedback is encouraging.

The award-winning app was voted among the best 100 startups at StartupIstanbul, best 11 startups at the Africa Tech Summit and also 1st runners up at Africa Telecommunication Union Innovation Challenge.

Sustainability

Currently, the M-Lugha app covers only 20 local languages in Kenya and the total number of local languages is more than 60. M-Lugha intends to cover all the remaining languages and venture to Rwanda, Somalia, Ethiopia, Uganda, Tanzania and South Africa. We target 1 million users by the end of 2021.



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Project link:
https://m-lugha.com

Yaaka Digital Network (YDN)

YDN is an award-winning platform that offers academic content following the Ugandan syllabus accessed on all devices.

Country of Implementation: Uganda
Organisation: Ultimate Multimedia consult Uganda Ltd

Problem which the Innovation addresses

Many learners, teachers and schools in Uganda are struggling to learn or teach during the COVID-19 outbreak. Even before COVID-19, a 2016 UNESCO study indicated that only one out of 10 learners in Uganda accesses basic quality education. While many learners would love to continue studying in this period, few have the necessary equipment and devices to be able to do this.

How the Innovation Functions

The Yaaka Digital Network (YDN) is a digital media platform (social network) for students and trainers in university, tertiary institutions, secondary, pre- and primary schools to learn/train, mentor and share in academic, social and extracurricular activities of their interest, and to especially share and access digital academic materials in multimedia formats, whether text, audio or audio-visual/video, as well as hold or attend classes.

Both online and offline, Yaaka is like Coursera, Khan Academy, Udemy, EDX.org and similar learning platforms. In addition to offering locally relevant academic content and interactions, we built Yaaka as a 4-in-1 product for digitalising learning and teaching.

Impact or Success

Our innovation has helped build the FAWE Online platform that provides online learning of STEM subjects for students in FAWE-supported schools in Uganda. We were able to train over 500 teachers in digital pedagogy to ensure that they can easily facilitate learning for their students using the digital learning platform. Over 1,560 parents and students have also been able to access and buy our multimedia learning content, while over 40 schools are using our content and platform to facilitate learning.

We have been able to train over 40 teachers in digital pedagogy and digital learning facilitation and have recruited 20 of them to support our online learning facilitation service.

Sustainability

We need investment to boost teacher recruitment, content optimisation, marketing and promotions as well as to integrate supporting technologies to offer the best learning adapted to the 21st century. We shall maintain a highly trained and motivated team of technology and content specialists to support as many teachers and schools to utilise our platform for functional digital learning. The trained and engaged teachers will provide leadership and inspiration for thousands of other teachers in managed digital learning facilitation.

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Project link:
https://www.yaaka.cc

Dentiroam: Affordable Off-campus Access to Education and Research Resources

Wireless roaming services for students, faculty, and researchers to enable them access campus digital resources.

Country of Implementation: Tanzania
Organisation: Tanzania Education and Research Network (TERNET)

Problem which the Innovation addresses

The outbreak of COVID-19 has caused disruptions which included sending students home. To ensure that students/teachers continue to learn/teach, we need to find new ways to support students' access to campus resources from their different locations and support schools at all levels to provide quality remote services. Inherently, mobile internet is not affordable and reliable enough for teaching and learning activities. Our innovation extends the network to students/teachers by deploying wireless hotspot (namely Dentiroam) in residential areas. To ensure end-to-end reliability, we also provide campus network infrastructure restructuring.

Impact or Success

We started piloting in Dar es Salaam, where we deployed two hotspots in Chang'ombe and Kinondoni. We also secured permission to deploy the hotspots in all around-the-country 25 study centers of the Open University of Tanzania (OUT). In monitoring the two hotspots, we observed that the Chang'ombe hotspot got more users (average of 1234 users per day in May-August 2020) compared to the Kinondoni hotspot (average of 73 users per day in the same period). The hotspots allow only students/staff with valid university/school credential to connect. Therefore, during the time when universities/schools were closed, these students were able to access campus information resources by using the hotspots. This innovation is also benefiting OUT students a lot since their only mode of learning is online and their need for reliable and affordable internet is intensive.

We have succeeded to negotiate for affordable bandwidth, reduced the price for last mile links to the hotspots, and secured donation of 10 access points. This milestone has enabled us to successful deploy the pilot hotspots and is giving us an edge in upscaling the innovation.

Sustainability

The groundwork to secure bandwidth and infrastructure is completed. To upscale the innovation we need three key things: complete national survey to identify viable hotspots areas, get approximately 250 outdoor access points to scale the hotspots, and raise awareness about existence of the Dentiroam service.

Sustainability of this innovation is key. We have dedicated three staff to monitor the performance and resources allocation for the hotspots. We have partnered with major ISPs to maintain links to, and devices in, the hotspots. Since users will be contributing some funds to subscribe, we believe this will sustain the hotspots financially.

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Project link:
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BrainShare

BrainShare is an e-learning platform that connects learners to quality low cost learning content both online and offline.

Country of Implementation: Uganda, Tanzania, Rwanda, Kenya
Organisation: BrainShare Limited

Problem which the Innovation addresses

COVID-19 related school closures have affected 90% of the world's student population. Many students are stuck in their homes with limited access to learning resources such as notes, books etc. The use of EdTech platforms such as BrainShare has been identified as a potential way to reach out to and support children in the continuation of their education. The BrainShare innovation seeks to solve the challenge of limited access to learning resources by providing students all the required learning resources such as notes, eBooks, pastpapers as well as remote access to teachers both online and offline. BrainShare leverages mobile technologies such as Offline Windows and Android app, Interactive Voice Response (IVR), SMS and USSD (example of BrainShare USSD in action: *https://www.youtube.com/watch?v=8EnIKUQdh8I*) to deliver learning content to remote learners both online and offline. (View details of the BrainShare platform here in this brief CNN story. The story captures elements of the online and offline features: *https://youtu.be/2_KBE0MAIgY*).

How the Innovation Functions

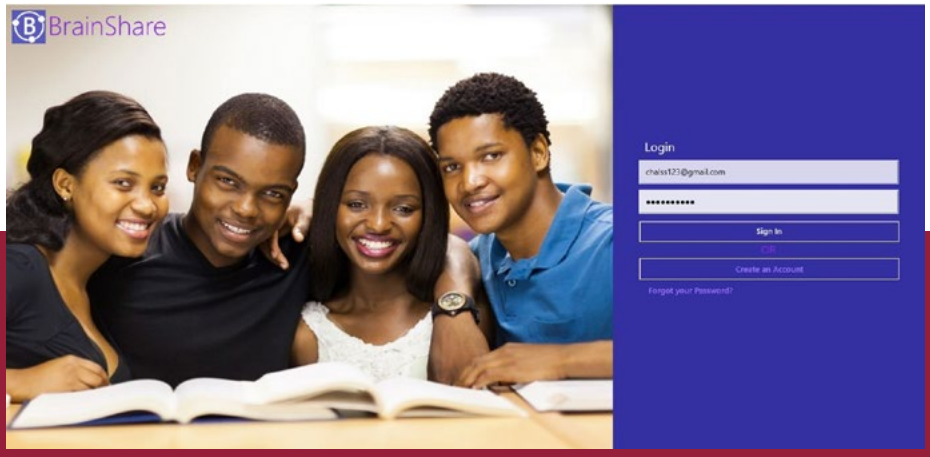
BrainShare is an e-learning platform that is filled with educational content such as class notes, pastpapers, eBooks, Quizzes etc on different subjects and topics for different classes (Primary, O-level and A-level). BrainShare also consists of an integrated set of interactive services that provide teachers the tools and resources to support and enhance remote teaching. Teachers can schedule live classes and allow registered students to subscribe and learn remotely. Such classes can be free of charge or paid for, depending on the teacher's preference. Payments for subscription fees are done seamlessly using mobile money or VISA directly on the BrainShare platform. Teachers in the long run use BrainShare as an extra source of income. BrainShare also supports discussion forums where students can post academic questions and get help from fellow students as well as teachers. This is aimed at fostering collaboration amongst students from different schools and countries.

Impact or Success

We are currently operating in over 150 schools in the region and are creating extra income for teachers, and so improving their livelihoods. We are also giving a chance to financially disadvantaged learners to get access to free learning content (i.e notes, pastpapers, eBooks, test questions etc.) through our open content initiative. BrainShare is also supporting local book authors by allowing them to sell their eBooks on the BrainShare platform.

Sustainability

The innovation can easily be scaled by onboarding more content creators such as teachers and authors from other regions to contribute their content or better still sell their services and content on our platform. This way, they will be able to access a wider student market and earn more revenue. Students too will get a wider range of learning resources from which they can subscribe and learn. Students are rewarded badges as recognition of excellence and academic accomplishments.



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BrainShare Limited
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Smart Elimu

Smart Elimu is a digital visual) learning platform that allows candidate to learn through simplified multimedia content

Country of Implementation: Tanzania
Organisation: TYD Innovation Incubator

Problem which the Innovation addresses

While developed societies use ICT to ensure that their societies are self-reliant and have enough capacity to contribute to their socio-economy development, Tanzania is yet to exploit accessibility to multimedia facilities such as online library, kindles, podcasts, online tutorials, teaching videos etc. for education. Conversely, there are few individuals especially in urban areas who perceive ICT as the means to improve their learning process.

Therefore, Smart Elimu Solution transforms learning contents into multimedia and utilises different channels to ensure that every child in Tanzania has access to relevant and quality education.

How the Innovation Functions

A. Smart Elimu is a Multimedia Based Digital Learning Solution

Among other things, Smart Elimu compiles all educative materials in an electronic form, transforms educative materials into multimedia form, and allows access and subscription of those materials through as many platforms/ devices as possible, such as computers, tablets, smart mobile phones, USSD mobile phones, memory cards, TV sets, and Kiosk/PoS. Therefore, for those places with no electricity, solar powered devices can be used. The solution is considering the blind/ visually impaired, deaf & dumb and scientific simulations for future improvement.

B. Unique Value Proposition for Smart Elimu

It is a public centric solution, which considers all people at large and focuses more on 70% of the underprivileged. It is a unique solution in Tanzania as it is not an eLibrary, but a virtual learning solution. It is very affordable whereby maximum subscription is TZS 20,000 (= at most USD 9) per curriculum per year. We position ourselves to be the highest among the providers of e-learning solutions.

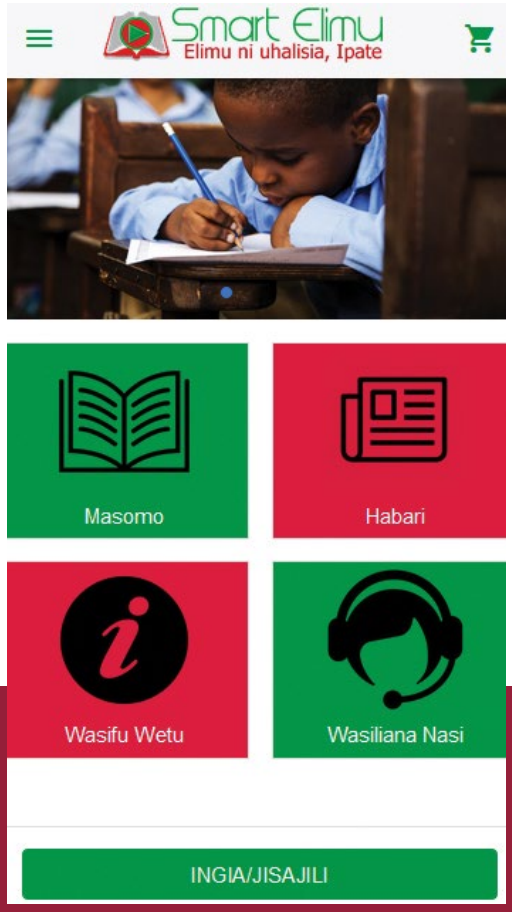
C. Impact or Success

Economically Smart Elimu: is increasing chances of formal employment, creativity and self-employment capability; is encouraging academic content developing; and plays as an additional self-income for teachers.

Smart Elimu is playing a vital role of improving level of Literacy in Tanzania by ensuring that there is availability of education for everyone, by encouraging on the self-study behaviour and by fostering competition in academic content development.

D. Sustainability

Learning materials will be updated and installed in encrypted flash disks, which no one can copy and transfer. The flash disks can be updated by use of kiosks. There will be affordable tablets sold at utmost USD 25 each, customised and secured for education purposes and not allowing users to compromise and install unethical stuff. For rural schools there will a supply of solar powered TV screens.



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Project link:
https://elimusmart.co.ke

TextSchool

Textschool helps learners with limited internet and hardware accessibility to access content via USSD and SMS.

Country of Implementation: Kenya
Organisation: Oasis Mathare

Problem which the Innovation addresses

COVID-19 has greatly impacted on the education of children in Kenya as schools closed for 6 months, so kids are not going to schools and teachers have lost livelihood. Efforts have been made to have access learning through digital means.

According to the survey of non-profit organisation USAWA Agenda in 2020:

- 22% of kids are accessing available online content
- 7% of children in public ECD schools compared to 26% of their counterparts in private ECD schools are able to access digital learning
- Teachers are not aware nor equipped to be technology ready
- Households are challenged due to poverty and internet connectivity

How the Innovation Functions

The TextSchool project is an innovative e-learning platform supporting primary school pupils from grades 4 to 8 with a system that uses Unstructured Supplementary Service Data (USSD)/SMS targeting learners with limited internet and hardware accessibility.

What sets TextSchool apart from other models is that it is SMS based and can be accessed via any phone (smart or feature phones) as long as the phone can send and receive text messages, by dialing *250*11# using Safaricom sim card. It can also be accessed by any learner residing in remote areas in Kenya since it rides on Safaricom – which has a good network coverage in Kenya.

Impact or Success

So far, we have managed to reach out a total of 10,271 with an average of 350 active users accessing our services on a daily basis.

Sustainability

Our innovations ride on the existing technological infrastructure, Safaricom, which makes it easier to be accessed across the entire country (Kenya). This makes it easier to reach out to learners in the remotest parts in Kenya since Safaricom have a good network coverage in the region.

We have partnered with local teachers in content development and ensure that students access quality content.

According to the report released in 2017 by the Communication Authority of Kenya, we have mobile subscriptions of 38.5 million with a population of 51 millions, meaning that there is a deep penetration of mobiles phone in Kenya with an average of one mobile phone per household.

TextSchool runs on any phone (smart or feature phones), which makes it easier to be accessed.

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Project link:
http://www.oasismathare.org/textschool/

Smart Darasa Interactive Learning Platform

We use interactive technologies and environment-based experiments/activities to make science subjects easy and fun.

Country of Implementation: Tanzania
Organisation: Tanzdev Smart Technologies Co.Ltd

Problem which the Innovation addresses

Innovation targets sustainable technological development for local people by local people. Smart Darasa makes a student practically understand scientific concepts taught in class. Our vision towards community is to create a generation that will be able to utilize effectively available resources in their environments and use the knowledge that is obtained in the class not just for passing but to understand in first place and use it for meeting daily society needs.

How the Innovation Functions

The Smart Darasa Interactive learning platform is equipped to make a teacher/student to explain/understand complex science concept in an easy and interactive way. We use digital simulations and environment-based activities to achieve that.

In digital simulation, we have developed 3D web-interactive, Augmented Reality (AR) powered mobile application and use 3D based projector (Smart Darasa 3D Banner) in the classroom to achieve a realistic presentation (*https://youtu.be/IhlNgZDCA20*).

In environment-based activities, we set up experiments for explanation of science concepts using tools/equipment that are available at home or can be accessed easily. This links students' way of thinking with new science concepts introduced at school.

At Smart Darasa we say "science is easy, just know how to explain it in a right way!!".

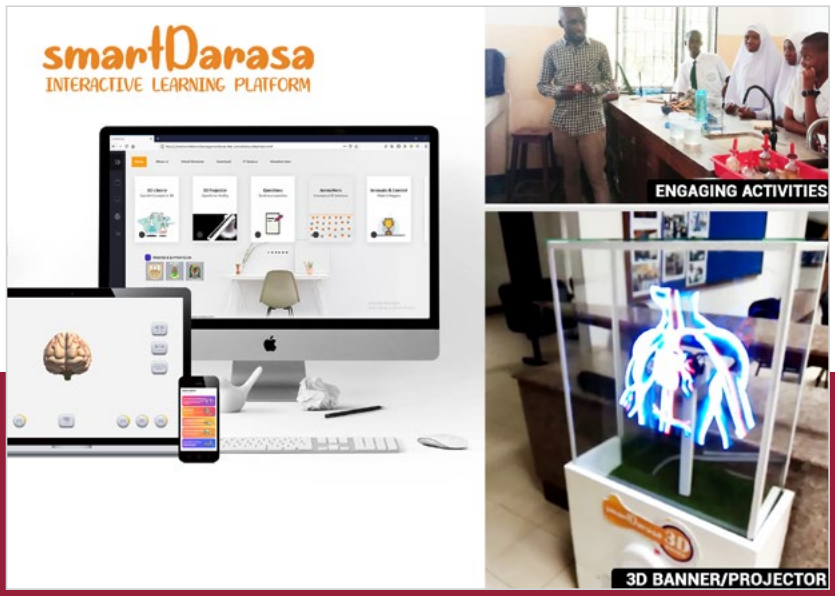
Impact or Success

Within 6 months after completing our first development phase we have been able to acquire 300+ users who paid and use only three types of smart augmented books and stickers, 50+ 3D Projector science concepts demonstrations, which we made available with our self-funded limited budget. As a result, at the end of 2019 we have been able to secure USD 10,000 seed fund investment from Commission for Science and Technology Tanzania (COSTECH) and to work in close collaboration with the leading university in our country (the University of Dar Es Salaam - UDSM) and ICT Commission Tanzania. With this support we have been able to progressive develop 3D-based educational contents and reach out to our end users (teachers and students). With the feedback from them, we have been able to redevelop our platform according to their feedback and started making our interactive contents available online (*https://smartdarasa.com/*). We are projecting to impact more than 300,000 students, create passive income for science teachers and 3D designers who will be posting their contents in our platform and install 100+ 3D projector stations in classrooms at the end of 2021. Our solutions had paved the future of learning science subjects in our country.

Sustainability

Smart Darasa educational contents can be easily adopted by any curriculum and language. This gives us a sustainable pathway of scaling in different regions globally.

Our business model benefits both our organization as well as contents contributors such as teachers and 3D models designers. This creates employment opportunities as well as creates a strong community which benefits from the revenue generated by the platform itself.



Contact:
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Project link:
https://smartdarasa.com

Zeraki Learning APP

Zeraki Learning is a free learning app that promotes learning to all Kenyan learners.

Country of Implementation: Kenya
Organisation: Mzynga Technology Limited

Problem which the Innovation addresses

Our innovation is a learning app created in order to assist learners in Kenya to continue engaging in learning no matter the time, place or distance they are from their schools. This helps learners to keep learning even during the coronavirus pandemic era and even in the post-pandemic era since Zeraki has made learning free and fun for all. Our main focus is on how the learners can best keep improving in their education even in the absence of a physical class and a physical teacher. We have therefore created a class-like environment in the APP where the learner is able to log in, create their own account and keep track of their learning path as they continue with their class activities, assignments and obtain progress reports therein.

How the Innovation Functions

Zeraki is an online learning platform with the unique characteristic of offline learning, with support for local/native languages integration as well as the involvement of local teachers in teaching the students. This allows for a well close-knit intimate teacher/student class interaction. For our innovation to be a success we first look for and identify very qualified and experienced teachers for the specific subjects that we are required to teach in the Kenyan Syllabus. So far, we have managed to develop lessons in mathematics, biology, physics, chemistry and geography. Note that more emphasis on our content has been placed on STEM. After identifying the teacher whom we would like to work with, we bring them in and allow them to conduct the lesson in front of our cameras. We then document the lesson, review it to all content creators' satisfaction, then upload it to the APP. Lastly, it is worth noting that our model's uniqueness is in the fact that schools can generate timetables for their virtual learning requirements. We witnessed that during the COVID-era where school heads would see to it that when a teacher is absent our innovative learning APP came in handy and helped students keep learning even in the absence of a teacher in the class as planned.

Impact or Success

Since the introduction of Zeraki, we have seen a steady rise in monthly downloads of approximately 20,000 every month and subscriptions of nearly 1000 school-based accounts so far. This means that more than 100,000 learners are engaging in learning on the app and schools are getting to know about Zeraki. The fact that approximately 23.81% of schools have opted to open a subscription account with us is a huge milestone in our journey to allowing even more teachers and students to come together and defy space and time.

Sustainability

To allow our innovation to be useful to many people, probably even in other African countries, we are aiming to add different languages as mediums of learning. In this way, we will introduce other languages to broaden the access to resources to other users in the continent. Moreover, in order to reach all learners in Kenya, we are developing the primary school curriculum. With this in place, we will be able to fundamentally change the way learners educate themselves in both the lower and upper primary schools in Kenya and even in Africa at large.

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Project link:
https://learning.zeraki.co.ke

Kisomo

A data-driven platform which makes quality and relevant secondary school education accessible to all youth in sub-Saharan Africa.

Country of Implementation: Tanzania
Organisation: Smartcore Enterprise Limited

Problem which the Innovation addresses

There are 65 million secondary school-aged children who are out-of-school in sub-Saharan Africa. Even for those who got a chance to get into school, the education system does not prepare them for the job market. This is very urgent and important since according to UNESCO data out of 89% of students enrolled in primary education only 9% actually make it to tertiary education and only 6% graduate.

How the Innovation Functions

Kisomo is a data-driven platform which makes relevant secondary school education accessible to all youth in sub-Saharan Africa. Kisomo allows students to have fun & engaging learning experience using relevant and interactive content; teachers to streamline and monitor individual learning journeys of their students while earning extra income teaching online; education stakeholders like the government to make an informed decision on all matters related to educational technology using real-time and relevant data. We leverage modern technologies such as AI, VR, big data analytics & machine learning to provide the best learning experience and real-time education data to education stakeholders. We offer off the shelf, tested and individually customized solutions while lowering the cost and time spent in setting up e-learning infrastructure.

Impact or Success

The immediate and current impacts are that our innovation provides an opportunity for the 12 million secondary school learners across East Africa to stay safe from COVID-19 by accessing all their learning need online. This includes the overall improved learning experience for our users, which in turn increases the academic performance of individual learners, as students now generate interests in subjects such as Science, Technology, Engineering and Mathematics (STEM) since they can easily connect what they learn in the classroom with their own daily life. Teachers who are using our product can now easily streamline their online teaching, monitor individual students and understand where to improve their teaching. Our biggest goal for impact is to become a one-stop portal for education stakeholders such as governments and multinational organizations to have real-time and relevant data on education status in Africa collected over time by observing individual students' behavior and personalized learning journeys online.

Sustainability

Our sustainability model is divided into three segments:

1. Subscription, where we charge individuals users yearly fees for getting full access to Kisomo platform and resources
2. We also do direct product selling for offline accessible devices such as USB and tablets, as these devices allow users with limited to no access to the internet to also benefit from the education technology products
3. We generate revenue from teachers generated content through a percentage revenue share model. All these allow Kisomo innovation to be easily scalable and adaptable to any African market and beyond.

Contact:
Smartcore Enterprise Limited
md@smartcore.co.tz

Project link:
https://smartcore.co.tz

SHULE ERP – A complete digital solution for schools/universities

A complete digital solution for schools made by Africans for Africa

Country of Implementation: Rwanda, Guinea, Burundi
Organization: Loxotech

Problem which the Innovation addresses

Gone are the days when students had to be in class to know what has been taught or having to ask for colleagues to get access to learned material, coursework or having to queue to get any service he/she needs from school. Gone are the days when parents were required to travel to school to be involved in his/her child daily activities at school. Gone are the days when students had to lie to theirs parents about school attendance, their grades or conduct. Gone are the days when teachers and administration staff had to compile data and make reports, when accessing data and reports were time consuming. Gone are the days when schools' founders or shareholders had to be at school to access reports or to know the staff and student performance.

How the Innovation Functions

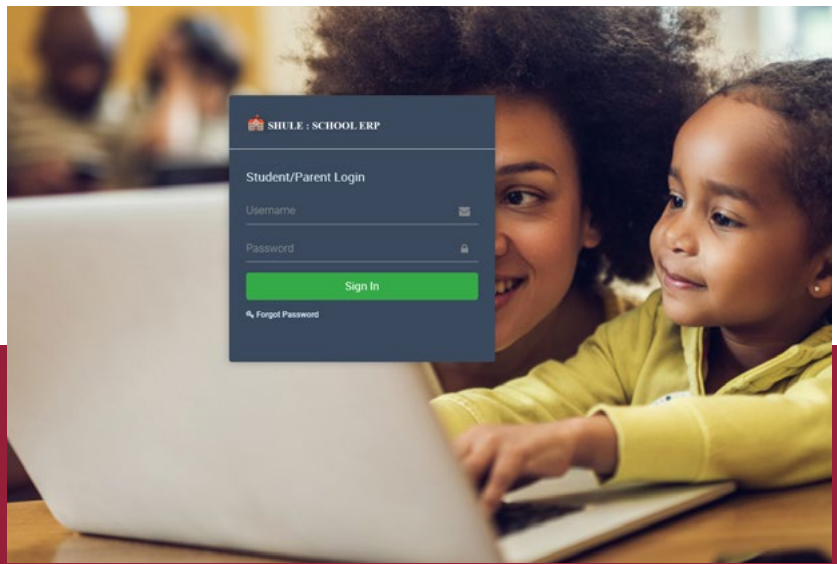
SHULE ERP is a complete cloud-based solution for schools/universities that covers all the areas of the institution management, from the gatekeeper, teachers, and administrative staff to the founders, students and parents. SHULE ERP provides information to the right person in real time saving time and cost. SHULE ERP turns a traditional paper-based school into a completely paperless digital institution in one week, providing live interaction and remote learning to students. In addition to the above challenges that are solved by SHULE ERP, every joining school gets (i) a free modern, interactive and responsive website as an entry point to the ERP functionalities, (ii) a secured and available 24/7 cloud infrastructure allowing them cost saving related to acquiring, maintaining, and upgrading servers at school. Students get SHULE ONE Gadgets to access the ERP Solution at lower price and payable in 4 installments within a period of 12 months. This alleviates student dependence on school computer labs.

Impact or Success

SHULE ERP is completely digital, it eliminates the use of papers, thus saving the environment. By standardizing lesson planning, the system improves teacher performance and administration monitoring. It improves students and teachers' performance while increasing exposure to technology. SHULE ERP allows leadership to make data-driven decisions with the most impact. The level of understanding of lessons increases due to the ability of students to review recorded lessons afterwards. On the success story of SHULE ERP during the short period of its existence, it is serving more than 20 schools and one university in Rwanda, Guinea, Burundi and very soon will be expanding to other countries namely Ethiopia, Angola, Congo, and Senegal.

Sustainability

The solution provides the cheapest postpaid plan and the lowest user per license. Our solution SHULE ERP is highly customizable and accessible by each user in their language of choice (including local languages), without affecting other users' choice. We expect constant growth and anticipate serving schools in more than 10 countries with a minimum of 1,000,000 students by 2022 as well as providing support to other initiatives like GIGACONNECT and SHULE ONE GADGET PER CHILD.



Contact:
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Project link:
http://shule.rw

ShuleSoft

We are a software development company specializing in designing customized systems for clients. Our flagship product is the schools' management system that we have already deployed to several hundreds of schools in Tanzania. We're based in Dar es Salaam.

Country of Implementation: Tanzania
Organisation: INETS Company Limited T/A ShuleSoft

Problem which the Innovation addresses

Schools' managements and boards as well as owners have myriads of information to deal with, which makes paper-based information management systems ineffective in making timely and informed decisions. Financial frauds and assets disappearance are some of the common problems in schools. Parents are disengaged and owners sometimes don't get to know what managers are doing in their schools.

Impact or Success

Schools in Tanzania were using a paper-based system to run their school operations from student's admission, academic record, financial report to graduation. As computerization is taking hold, the paper-based management systems are on the phase-out in most schools in Tanzania that have access to electricity.

We have designed cloud-based software systems that helps to reconcile the needs of all school stakeholders and make it easy for managements to make timely decisions and thus deploy resources effectively. The system enables managers understand who hasn't paid fees, which classes are under- tutored, which subjects are in dire need for teachers, what parents need and a lot more information that makes running a school a lot better, faster and more efficient than ever.

How the Innovation Functions

ShuleSoft is an extensible, scalable and easy to use school management system that simplifies school operations, interconnects parents, teachers, students and other school stakeholders. We sell directly to schools where we deploy our sales team to visit schools' managements and boards or owners and pitch about our solution. Leveraging on our partnership with largest banks in Tanzania, namely NMB Bank and CRDB Bank Plc, we are using their sales team to sell our product to schools across Tanzania, which reduces our sales, marketing and distribution expenses significantly.

In 2020 we have been selected as 2nd winner by the anza investment acceleration program, which is based in Tanzania. We are currently have been enrolled in SeedStars World competition after doing an online assessment. We have also been shortlisted by JICA Ninja innovation Challenge through the Embassy of Japan.

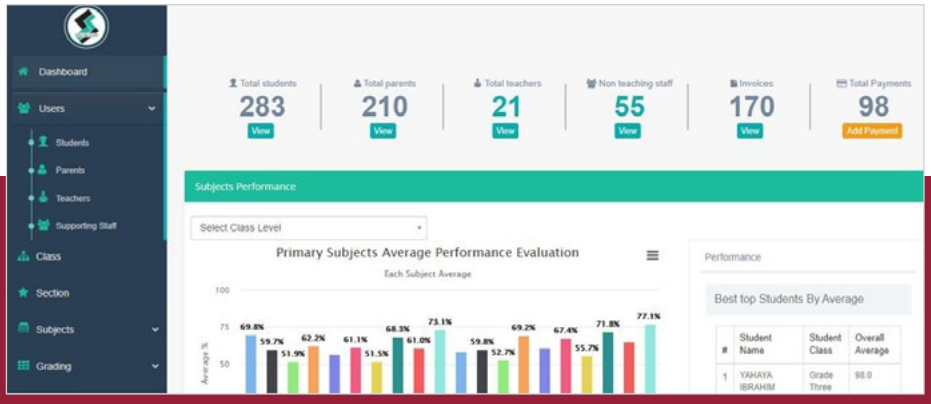
With an estimated pre-money valuation of USD 0.89 million and trailing annual revenue of USD 208,911, ShuleSoft is seeking USD 420,000 as a form of investment to help us scale our operations in Tanzania and East Africa.

Sustainability

There are thousands of schools in Tanzania (more than 3000 private schools and about 20,000 public schools), which is our core customer base. ShuleSoft now has 130,000+ end-users in our database. We are measuring our impact on the number of end-users, who are students, teachers and parents. Based on our estimations, the revenue will be the following if we scale-up both in private and public schools. The figures are based on USD 4.20 per student subscription fee that we collect per year.

Private School Students (810,000 x USD 4.20) = USD 3,564,000

Public School Students (16,000,000 x USD 4.20) = USD 67,200,000



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INETS Company Limited
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Project link:
https://www.shulesoft.com

Learning Management System

A multi-college learning management system targeting the TVET sector and supporting offline access to resources

Country of Implementation: Kenya
Organisation: Hudutech Ventures Limited

Problem which the Innovation addresses

Due to COVID-19, learning and training of more than 400,000 students in Kenya's TVET sector was halted. What is more, the country experiences an uneven distribution and quality of telecommunication services, which, together with the related costs, have made it unfeasible for most students to access education through typical e-learning services, especially Vocational Training Centres (VTCs), which are under county governments. The few such solutions that are available vary, but undo the power of connectivity, including generation of useful data.

How the Innovation Functions

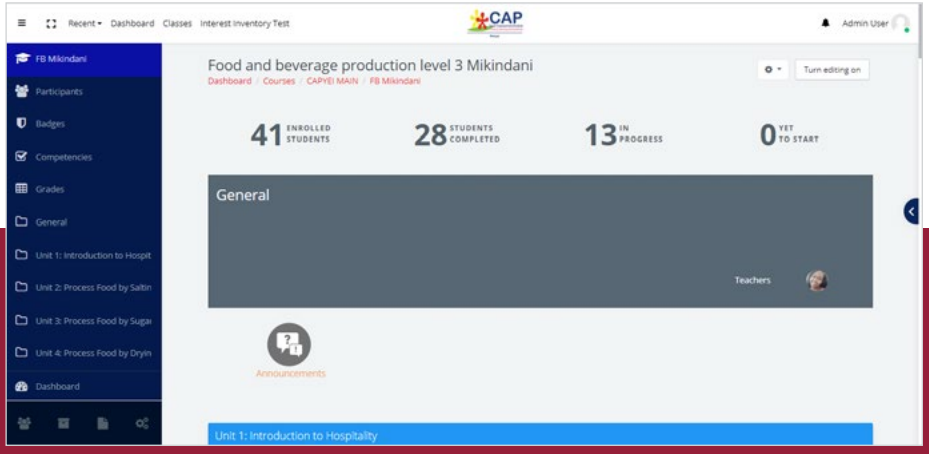
The innovation is a Learning Management System (LMS) that goes beyond COVID-19 challenges to also connect schools and automate learning/teaching/assessment in TVET institutions while considering constraints such as cost, quality, and availability of telecommunication services (e.g. internet). Unlike the standard e-learning solutions that target individual institutions, this LMS uses a multi-tenant architecture, where unlimited institutions can be registered on the platform and be allowed to create unlimited courses and enroll their users while maintaining their individualities. The result is a network of connected schools, allowing the generation of useful and rich data and analytics. Additionally, through a mobile application, the innovation allows students to download course contents while on the internet and synchronize/upload their offline activities when they are back online, thereby enabling uninterrupted learning, even without internet connectivity. Moreover, to address the practical nature of TVET courses, innovative learning activities, resources, and features have been developed to support visual demonstrations, presentations, and explanations.

Impact or Success

An NGO called CAP Youth Empowerment Institute (YEI) Kenya is currently implementing the innovation (*http://bestlms.org/*) involves. Through CAP YEI, its 32 educational centres and at least 130 government VTCs across more than 26 counties in Kenya have resumed learning through either a hybrid system or a full e-learning paradigm, all supported by this innovation. Currently, about 4,966 users (students, instructors, etc.) have been registered on the platform and mapped to respective courses and training centres. The mobile application (*https://play.google.com/store/apps/details?id=com.apps.capyeilms*) has been downloaded over 500 times on Google's Play Store and rated 4.8/5.0.

Sustainability

The innovation can be scaled sustainably through various steps. Firstly, using the same multitenancy architecture, the LMS can be advanced to enhance system abstraction and ensure that institutional platforms/portals are customized and seemingly 'independent' while still remaining connected. Secondly, by paying subscription fees, institutions will be granted access to the platform. Donors, including the government, can pay for the subscriptions to allow free access to the platform by certain or all TVET institutions. Thirdly, collaborations with the public and private sector should be sought to promote this innovation as an enabler of hybrid and e-learning paradigms in Kenya.



Contact:
Hudutech Ventures Limited
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Project link:
https://hudutech.com

Ubongo School

Ubongo School is a learning management platform that allows students to access reading materials virtually.

Country of Implementation: Kenya
Organisation: Ubongo Africa

Problem which the Innovation addresses

COVID-19 pandemic led to the closure of all schools in Kenya, thus paralyzing learning in the country. Students don't have a platform where they can continue learning remotely at home. This has created the need for a seamless smart solution that will enable students to continue with school programs from wherever they are. On the other hand, teachers and instructors need a platform that enables them to teach and evaluate students progressively as they proceed with school work.

How the Innovation Functions

Ubongo School is a learning management platform that allows students to access reading materials, attend online classes, submit assignments and receive their results. Teachers and instructors teach and evaluate students progressively as they proceed with schoolwork, give assignments, mark exams and submit results to the students. The school administration can monitor and evaluate teachers' progress and performance through our intuitive performance trackers, which are tailor-made for a real learning setup. The parents can also login and follow through their children's learning progress. Ubongo School is accessible via the web, mobile app & USSD, which does not limit users depending on the devices they use.

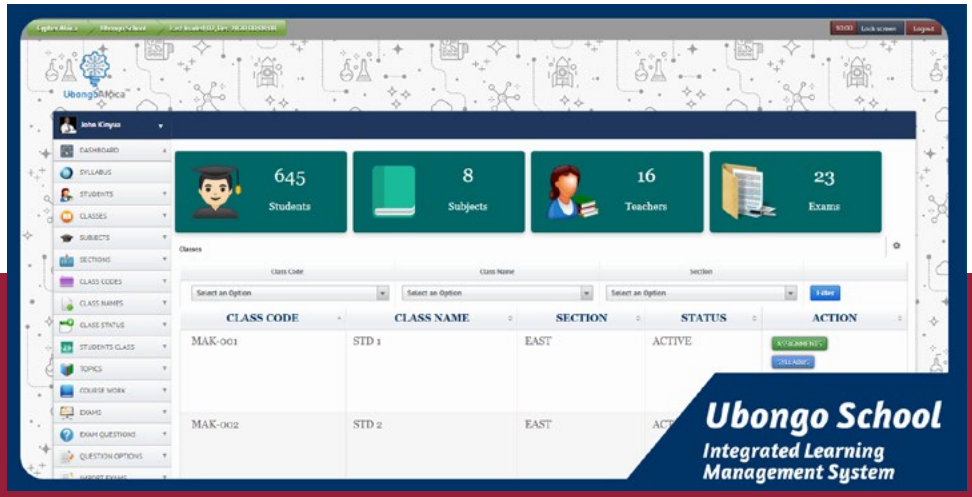
Impact or Success

Case Study

We have deployed the platform to 2 schools currently, which was part of our pilot program. The pilot phase has onboarded 23 teachers from both schools and enrolled 1300 students. All students are required to access the platform through a secure domain name / IP through a web browser or through a smartphone application. Of the scope covered by the solution, 98% of the students had easy access to either a web browser or installed our mobile app on Android phones.

Sustainability

It is easy to customize the solution to provide education services on demand as the need arises. For example, if the Ministry of Education introduces a new syllabus, it is easy to achieve a new paradigm without much adjustments to the existing structure. The solution is also developed so that students from all locations in the country can access the same content. Increased enrollments are a great plus to the efficacy of a sustainable e-learning platform. Since the fees charged to use the system are relatively low, the system is expected to grow exponentially, covering the majority of students in the country and beyond.



Contact:
Ubongo Africa
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Project link:
https://ubongoafrica.com

SmartClass

SmartClass is a convenient, interactive, and engaging digital tutoring marketplace that connects

Country of Implementation: Tanzania, Kenya
Organization: SmartClass Company Limited

Problem which the Innovation addresses

SmartClass helps learners to find and book the best private tutors/experts for ranges of subjects so that they can attain their educational goals. SmartClass focuses on providing an easier and engaging way to connect learners to experts. SmartClass aims to support as many learners as possible to achieve their own learning goals.

How the Innovation Functions

SmartClass is the leading leader in online education in Tanzania which has partnered with Vodacom Tanzania to render personalized learning experiences to lots of students in countless subjects.

It also allows low- and middle-income tutors to grow their incomes and achieve satisfactory living standards by teaching what they love through SmartClass.

SmartClass does this by capitalizing on big data analytics to effectively match students to tutors.

SmartClass enables students to learn anything they want, wherever they are. SmartClass ensures students get trustworthy tutors. Private tutors can teach learners at the learner's home, tutor's home, online, or at an agreed place.

Tutors and students in both Kenya and Tanzania can register at *www.smartclasstz.com* and *www.smartclass.co.ke* respectively in less than 2 minutes to create their profiles.

Impact or Success

SmartClass has partnered with Vodacom Tanzania to deliver the best education to students in Tanzania and Kenya. SmartClass started in February 2019 and has attracted more than 150,000 active students to date. SmartClass has also attracted more than 20,000 registered tutors who teach students online via the SmartClass platform.

SmartClass helped more than 50,000 students to continue learning during the pandemic. SmartClass provides very personalized classes to students based on their learning needs. SmartClass matches students to the learning contents depending on their knowledge background. SmartClass also provides detailed analytical feedback to parents about the progress of their children. Students can continue learning via the interactive whiteboard in the SmartClass platform, which allows students and tutors to interact seamlessly.

SmartClass managed to forge a partnership with Vodacom Tanzania to support SmartClass in offering students the best education services. SmartClass also won the Commonwealth Youth Award for 2020 with a cash prize of GBP 1000. Lastly, SmartClass managed to win a USD 5000 grant from the Tony Elumelu Foundation.

Sustainability

SmartClass is a platform service that has been built with a scalability mindset. SmartClass has recently expanded to Kenya with the same infrastructures. We also automate a lot of the process in SmartClass and this reduces the human interaction to the minimum.

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Project link:
https://www.smartclasstz.com

BAG – Building A Generation

BAG is a gamified platform that offers real-time access to experience-based learning for university students

Country of Implementation: Rwanda
Organisation: BAG Innovation

Problem which the Innovation addresses

Universities' curriculums are outdated and do not match the employer's skills need, leading to most graduates in Rwanda lacking the skills required to pursue employment. This lack of exposure to employers, job preparation, and balance between theory and practice within the university degree results in local employers struggling to identify the right talent and incur expensive entry-level training costs.

How the Innovation Functions

BAG is a gamified digital platform that collaborates with universities and employers in East Africa to offer real-time access to experience-based learning for university students. Through our platform, we are delivering interactive assessments from employers that build up a trustworthy skills profile for students.

The BAG solution pro-actively analyzes the employer's skills needs and translates them into short assessments, each representing requirements from the employer, on both the technical and soft skill side, that in return tests the user's ability to work with that specific company. Traditionally employers can only take on 2-3 interns per year but with the BAG solution, employers can now with no extra effort transfer work-life experience from their company to thousands of students at the same time.

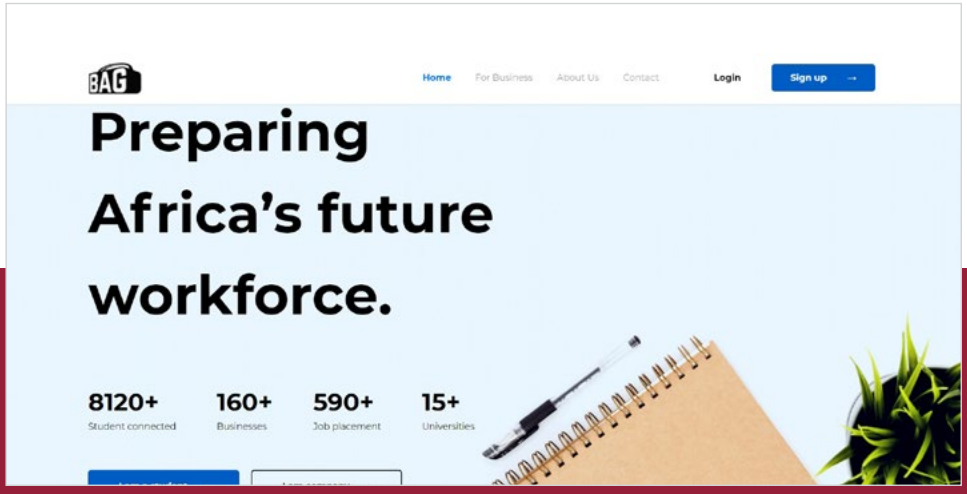
The gamification technology recreates critical elements of employment during a university student's learning cycle. Students spending a few minutes a week on the platform will attain the same or greater value as when performing an in-person internship and be ever closer to ready for employment.

Impact or Success

Amidst our key accomplishments, over 8% of students in Rwanda have used or are currently actively engaged on the platform, 200 plus companies have collaborated, and over 600 graduates have been placed in employment within the past two years. The COVID-19 crisis has demonstrated that the BAG solution is more important than ever to keep students engaged digitally. Within the past six months, BAG has been able to secure further university contracts and thereby increase revenue. BAG has also been selected as the best EdTech in East Africa 2019 by EdTechXGlobal and participated as a Seedstars Global finalist in 2020.

Sustainability

Gamification is growing in popularity amid higher education institutions globally based on evidence-based science of increased student performance, retention, and student engagement. Gamification within an educational context is yet to ultimately establish itself in Africa. Therefore, there is an opportunity to capitalize on gamification – and on the reward system. The students earn experience points, upgrades in levels, and have an enjoyable experience working on their skills development. Through the platform we can offer universities, students and SMEs a strong value proposition through our subscription and freemium services.



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Project link:
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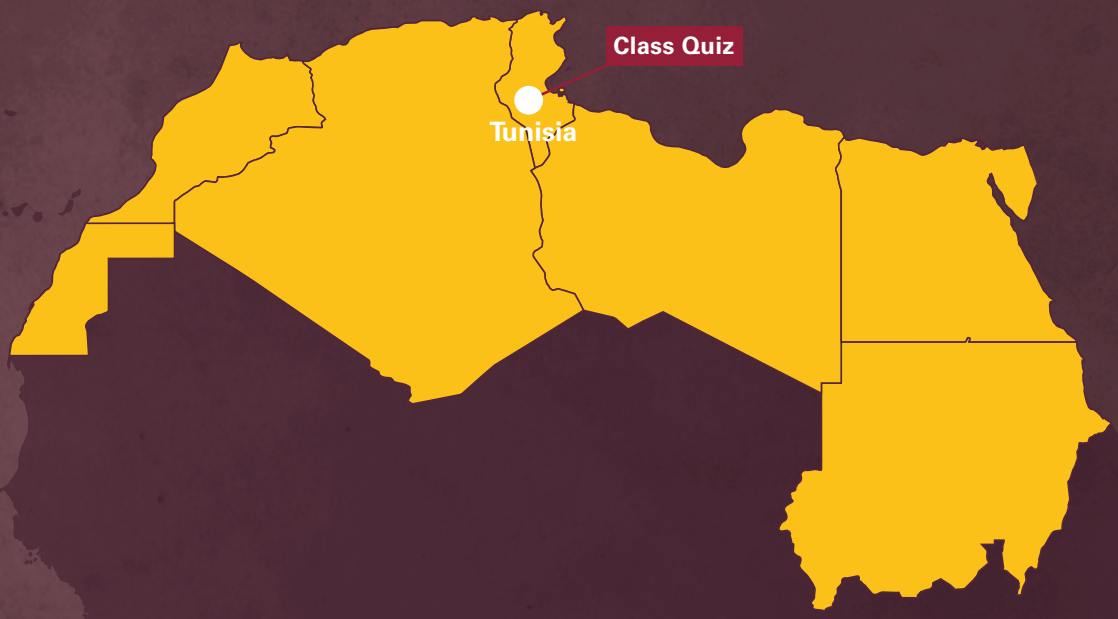
INNOVATIONS FROM NORTHERN AFRICA



Class Quiz

A gamified educational mobile app digitizing the traditional schooling by blending the curriculum with technology

Country of Implementation: Tunisia
Organisation: Envast

Problem which the Innovation addresses

By 2030, an additional 170 million children will need to be in school, raising the need of 1.3 million additional teachers. With educational systems already under pressure, the increased need for qualified teachers and more innovative educational approaches to maintain kids' attention in digitally fueled times along with schools lacking resources and equipment, investing in good quality education using technology, becomes essential. That's why "Class Quiz" is the best alternative for teachers to lead their classes by using technology and empowering students to learn passionately while revising the curriculum independently.

How the Innovation Functions

Learning while having fun: that's our way of changing traditional schooling to a gamified journey of knowledge and practice.

Class Quiz is an interactive educational platform for kids aged between 6 and 12 years old, providing them along with their teachers with a quality curriculum based content prepared by experts of pedagogy and child psychologists. Technically, the parents create an account on Class Quiz and buy their quarterly or annual subscriptions in order to access a specific academic level for their child(ren). The same process applies to schools getting access for their teachers.

As a pioneer app, our uniqueness is defined not only through the smart tracking system for parents and teachers to monitor the students' results but also through the gamified aspects with quality visuals engaging students and supporting them to overcome their learning difficulties. Each student has an avatar "Quizo" to grow by answering correctly or learning new things. Remarkable scores allow them to win gifts enabling them to change Quizo's appearance as they like.

Impact or Success

With 17,000 downloads on play store and 2500 online practice exercises, 10,700 kids benefited from our services. Also, Class Quiz was chosen among 481 social enterprises across the Arab World as the best educational mobile app for 2019 in the MADA ALECSO Apps award.

With no ready infrastructure for online education for primary students during lockdown, we assisted 1k students with free COVID-19 edition of our educational content to revise their school curriculum.

We are currently working with the Orange Foundation on creating an offline edition of Class Quiz along with digital labs in rural schools in Tunisia and other 17 African countries, giving students the needed equipment to access quality education through our innovative solution.

Sustainability

Class Quiz, the multilingual (Arabic, French & English) app, is ready for regional potential scalability. It relies on a flexible online library of assets and content builder that makes it easy to adapt to any educational system. We are also developing online simulations as an alternative to schools in Africa lacking equipment for scientific experiences. And to guarantee equal access to quality education across our continent, we are developing an offline edition for rural schools without internet.

Contact:
ENVAST
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Project link:
https://www.classquiz.tn

INNOVATIONS FROM SOUTHERN AFRICA

Sisanda: Virtual Science Lab

Sisanda is a virtual science lab that allows learners to perform hands-on experiments by just using the smartphone.

Country of Implementation: South Africa
Organisation: Sisanda Tech

Problem which the Innovation addresses

80% of public schools in South Africa don't have a science laboratory.

How the Innovation Functions

We developed a virtual science lab app called Sisanda, where learners can perform hands-on experiments anywhere and anytime by just using their smartphone or tablet. Sisanda uses the camera of the smartphone or tablet to project 3D digital science apparatus in front of learners so they can manipulate, dissect and explore their curiosity.

Why Sisanda is unique?

Sisanda provides a range of immersive learning experience through the use of augmented reality technology, gamification and simulations. We have content, from the building of bridges to connecting virtual electric circuits to space exploration.

Our story:

https://www.redbull.com/za-en/videos/Mbangiso-Mabaso-creates-virtual-science-labs

Demo links:

Demo 1: *https://www.youtube.com/watch?v=BCS9wIF0g-dw&t=70*

Our Lessons using the cube:

Lesson 1: *https://www.youtube.com/watch?v=9YyL3c-qXhAE*

Our Social Media Links:

www.sisanda.com
Instagram:@sisandatech
Twitter:@sisandatech
Youtube: Sisanda Tech FB/Sisandatech

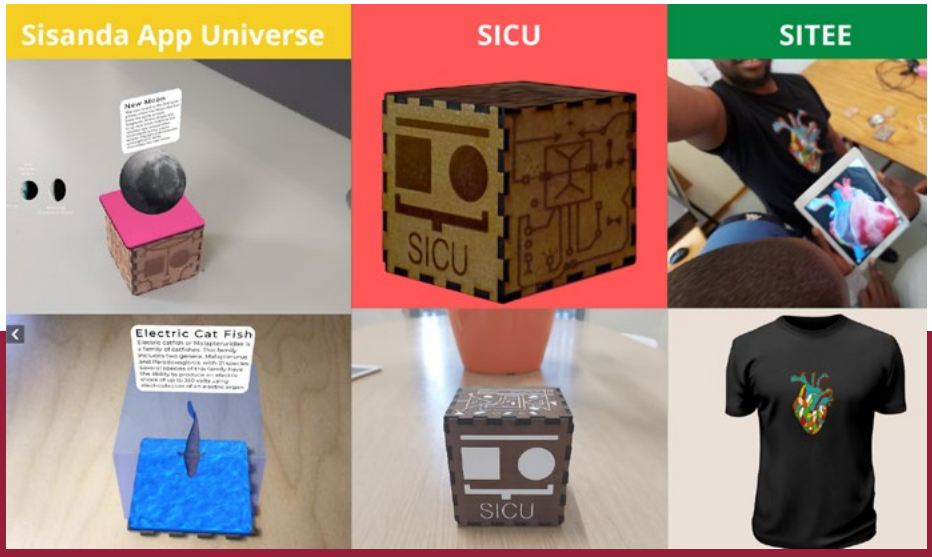
Impact or Success

Sisanda has 324 downloads across app stores and play stores. Sisanda won the MTN Business App of the year Awards Most Innovative Solution in 2019. We have also got the shortlisted top 10 innovations by the Development Bank of South Africa.

Here is a review from Arone Khumalo in Google PlayStore: "It's a great experience for young and old". We made a total revenue of USD 6945,36 last financial year.

Sustainability

Our app is available to be downloaded in 157 countries, we are providing the design of SICU to be free so that teachers could be able to print it out an teach with it. With regards to our SITEE, we have partnered with Printful, which can deliver our T-shirts worldwide. In order for our innovation to be scaled, we will have to do language localisation in most spoken languages in Africa. We have partnered with AWS to be able to deliver our content in the most cost-effective way. We will continue to charge for subscriptions as we get to more users. By 2025 we looking to reach 1 million learners.



Contact:
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Project link:
https://sisanda.com

IDEA Virtual School

Universal access to low-cost, outcome driven, core curriculum digital content and platform solutions for student and teachers.

Country of Implementation: South Africa, Kenya, Rwanda, Botswana
Organisation: IDEA Digital Education

Problem which the Innovation addresses

The need for universal access to quality curriculum-aligned digital education independently from device and connectivity at a low cost is the key challenge for all African countries: how to provide platform, content and assessments for primary and secondary schools, governments, corporates to help them transform technology into learning outcomes.

How the Innovation Functions

The IDEA Virtual School is a digital learning environment which includes an adaptive learner management system (LMS), content management system, primary and secondary school interactive content, digital assessments and data analytics. The virtual interactive lessons are aligned to each national curriculum and the media-rich animated, HTML5 interactive and data-driven simulation content provides feedback to the students and essential progress and proficiency tracking for educators. IDEA has implemented core-curriculum and personalised content with over 40,800 animations, videos, virtual laboratories and audio files. We have 41,400 pages of content with 9000 assessments and 17,000 interactive activities. The unique value propositions of IDEA are: independence from technology and hardware; multiple connectivity usage scenarios; outcome-based; interactivity; localised and customisable; data-driven.

Impact or Success

In June 2020 IDEA won the top UN award presented by the United Nations Economic Commission for "Best Innovation for Government in Response to COVID-19." Student structural improvements, on average, increased from 24% to 28% on EGRA and EGMA testing in 2019 to 35% for foundational literacy and numeracy students. Secondary school science results have improved by more than 35%. 95% of these students come from English second language backgrounds and 100% of IDEA's users are legally defined as coming from previously disadvantaged communities. IDEA is a global Microsoft Authorised Education Partner and won the Global Education Startup Award for South Africa in 2019. We operate through the democratised access to educational content that is economically inclusive, gender sensitive and focused on creating a global citizen to achieve four UN Sustainable Development Goals.

Sustainability

IDEA has integrated its content and LMS with private and public e-learning platforms for provincial and national governments, school groups, organisations and corporates. We offer a universal territorial license model with unlimited use, so IDEA works perfectly for large-scale deployments. We partner locally by collaborating with curriculum, facilitation and implementation teams.

Contact:
IDEA Digital Education
jackie@myideafrica.com

Project link:
https://www.ideaonline.com

Book-IT LMS

Supplementary EdTech tools empowering teachers and institutions delivery quality education while saving time and money

Country of Implementation: Zambia
Organisation: Book-IT Zambia

Problem which the Innovation addresses

The challenge that educators in Zambia experience mainly stem from the inefficiency of traditional teaching techniques, which in turn breed low learner outcomes. The situation has been aggravated by the imbalance between the population of learners and the number of institutions and their physical infrastructures. Access to quality resources in the education sector is another challenge that has created inequalities in the learning environment as teachers at public schools are unable to access quality resources in various subjects.

How the Innovation Functions

The innovation is a cloud web-based system backed by Amazon web services. It promotes blended learning by automating daily classroom tasks. Educators have accounts that allow them to perform various tasks.

Lecturers can dispatch assignments, conduct timed tests, quizzes & examinations.The grades are recorded and stored in the cloud for easier access and performance tracking by lecturers. An e-library has a repository section for subject materials and resources shared between students and lecturers, making shared materials easily accessible. It also allows lecturers to upload subject materials strictly to the official resources section, ensuring the authenticity of the materials uploaded in that section.There is an instant notification system for making announcements to all users no matter their location.

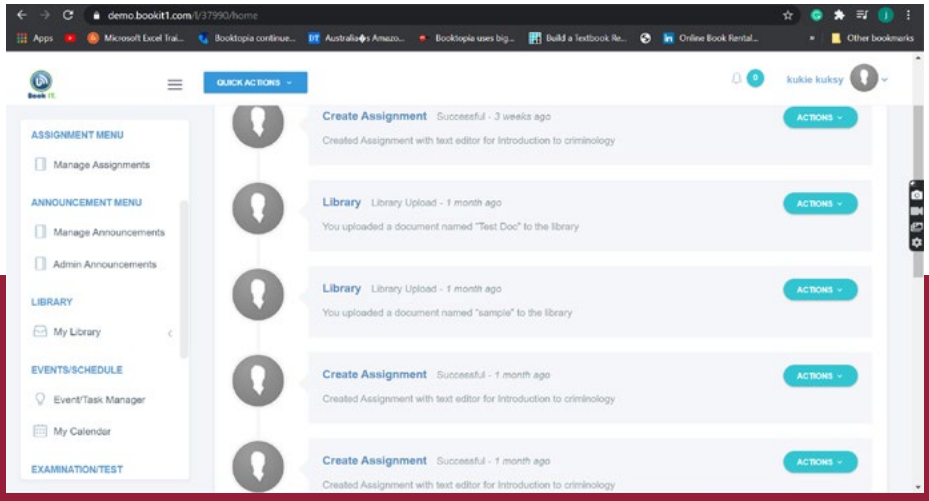
Our system is unique in that it combines student, learning & content management in one system, saving users time and money. Being a cloud-based system, setup is quick and doesn't require expensive hardware, which makes it a cheaper & a more efficient alternative. The system still ensures that the lecturer initiates learning by promoting the student-lecturer relationship.

Impact or Success

From the time Book-It LMS was initiated, it has been successfully implemented at one local private university with over 300 students using the platform to access information from their lecturers, tests, assignments, and exam. The type of students ranges from those stuck at home to others with busy schedules and small business.The LMS has proved its worth to the university because it has enabled the lectures to provide learning material and continuous assessment virtually also during the COVID-19 pandemic.

Sustainability

Firstly, we will look for as many angel investors and grant focused incubators as possible as to fundraise maximum capital for product development to stay in touch with technological advancements and stay relevant and scale. We will partner with educators and stakeholders to connect us to users and aid in new market entry. We want to simplify the solution for easier adoption in new niches, to initiate cooperations with professionals such as driver license issuers who conduct assessments and with continuous professional development training in organizations such as banks. We also want to grow and invest in the team to provide them the skills to remain innovative and capable of providing solutions to scale.



Contact:
Book-IT Zambia
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Project link:

Lync Academy

Lync Academy is an e-learning platform for everyone that helps experts to earn a living by creating courses on it.

Country of Implementation: Malawi
Organisation: Lync Systems

Problem which the Innovation addresses

Lync Systems is a tech startup that is centralized on digital technologies, youth empowerment and easing lives of people through modern technologies. Lync Academy is an e-Learning platform with a fast track and effective learning model. The platform is tailored for Malawi and Africa at large. The education sector in Africa is facing huge challenges like: a few people have access to tertiary or skills development institutions or platform, high rate of unemployment and lack of well-constructed e- learning platforms that have effective assessment models.

How the Innovation Functions

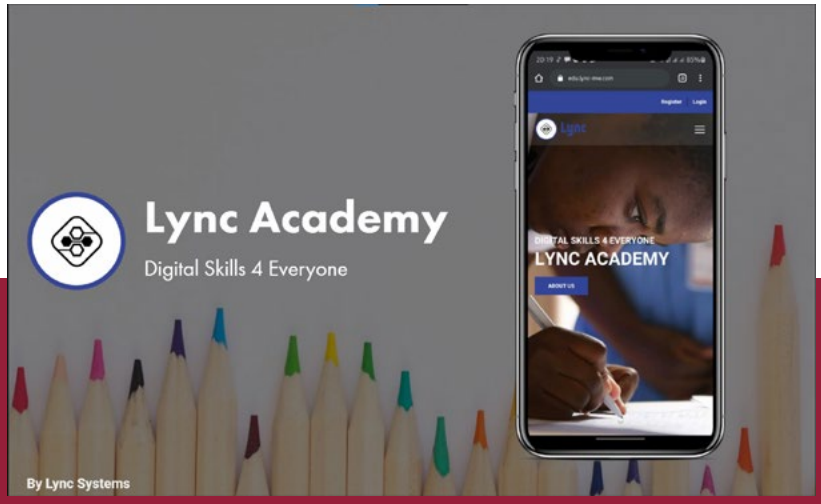
Lync Academy is an e-learning platform that can be accessed easily on the internet from any part of the world at any time. It can be accessed through web browsers from both desktops and mobile phones. The most unique selling point of the platform is its decentralized business model. Experts from different fields can register as instructors and create courses on their own and sell them. The instructors who can market their courses well within their networks can generate more revenue based on commission, if they can have a lot of students enrolling into their courses. The system supports a modern course modelling where course content can be downloaded for offline studying and assignments can be done offline as well and be submitted before their deadlines. The courses can have lessons, online time-based quizzes and live classes if needed through Zoom integration. The platform also has an online shop where people can buy things on the platform. The platform has very flexible payment integrations such as Visa, Paypal, mobile money, bank transfer and can be easily integrated with other payment gateways.

Impact or Success

Lync Academy is a project under our Lync Edu-Sys, which started in early 2019. Our goal is to promote STEM education through modern approaches. We developed Lync Academy to solve mobility, enrolment, unemployment and cost related problems. The impact of the project is mainly on improving mass literacy and skills development in Africa and promotion of self-employment to people with skills. Anyone can enroll into courses that are on the platform. The advantage of this approach is that instructors will be providing up to date courses with the current trends in the world education sector. Course pricing is dynamic, so courses will have different prices. The socio-economic impacts include self-employment of instructors, who will be generating revenue from the platform based on commission on the number of students enrolled into their courses.

Sustainability

Lync Academy is highly scalable. Being an online learning platform makes it accessible throughout the globe. Everyone from any part of the world can apply as an instructor and start making courses after being approved. The system offers wide range of payment options, both online and offline payments such as such as Visa, Paypal, mobile money, bank transfers and cash on delivery. To expand to other African countries efficiently, a main step will be finding instructors from different countries and payment integration with local payment systems.



Contact:
Lync Systems
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Project link:
https://lyncsystems.tech

Padziwe Ecosystem for Digital Education

Digital applications and content to help students and teachers have access to high quality learning resources and tools

Country of Implementation: Malawi
Organisation: Padziwe Systems

Problems which the Innovation addresses

High cost of learning resources, insufficient learning resources, poor quality of learning resources, and lack of continuous professional development (CPD) training for in-service teachers.

How the Innovation Functions

Padziwe Ecosystem is a collection of software applications and hardware aimed at helping learners, teachers, and schools in the teaching and learning process. It provides curriculum-based content (primary and secondary) enriched with interactive animations, videos, diagrams, and audio. It also has tools such tools as Exam Bank, School Management System & Teachers Desk which, apart from offering free CPD training and other tools for teachers, also empowers teachers with tools to manage students' information, examinations, and results.

The ecosystem also comes with low-cost hardware such as tablets and solar-powered laptops, which come pre-installed with instructional content for learners and teachers. The PDL goes further to make sure that each lesson is presented in the simplest and most interactive format possible to help students understand and attain learning outcomes.

Impact or Success

Apart from having the recommendations from relevant stakeholders such as for example the Ministry of Education in Malawi, Padziwe's applications are widely used by students and teachers. To date, a total of over 3, 000 students study using these applications with astounding results. Schools that have purchased the tablets or applications keep coming back every year to get more.

The usefulness of Padziwe's applications and content have also been validated through the following successes:

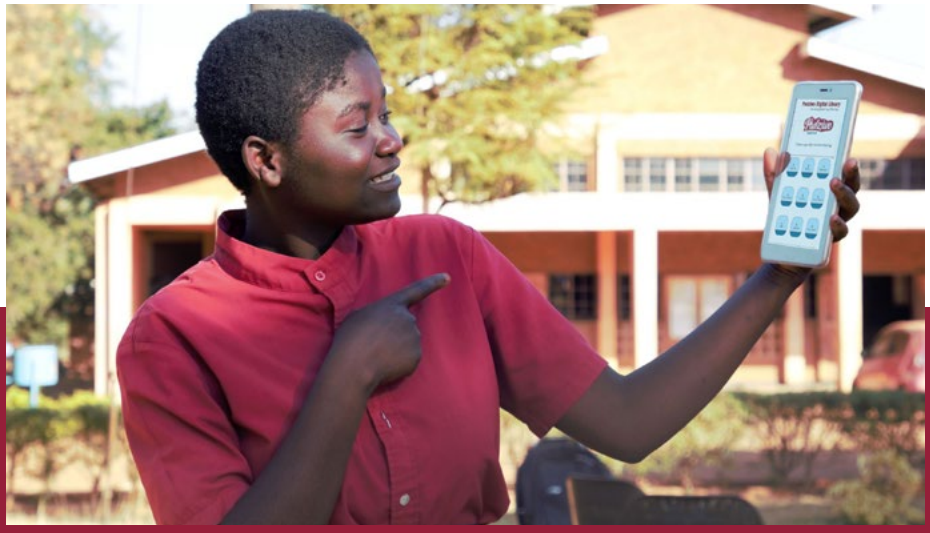
- Lessons were assessed and approved by independent teachers and are being beamed on a reputable TV station
- Applications have so far won a total of four awards for impact and innovation

This article, published by Malawi's leading print and online news media, The Nation, perfectly illustrates the impact which Padziwe is having in Malawi:
https://www.mwnation.com/a-library-at-fingertips/

Sustainability

Padziwe's applications can be used in any setting. Solar-powered laptops and tablets make it possible for the content to reach off-grid areas. Any school or student studying the Malawi curriculum at the primary or secondary level can use the applications.

Padziwe's apps can also be easily scaled to other countries. Core subjects such as sciences usually have almost the same learning outcomes, regardless of country. For the subjects that may differ in scope and breadth of coverage, Padziwe can make changes to match any country-specific curriculums with minimum effort and resources.



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Project link:
http://padziwe.org

Fundanii Digital Learning Project

We created an app/workbook combo to introduce learners from underprivileged schools to coding & computer basics

Country of Implementation: South Africa
Organisation: Fundanii

Problem which the Innovation addresses

A research conducted by the Department of Basic Education in 2018 revealed that over 90% of schools did not have computers for students to learn computer literacy from. This is a disturbing number considering that the world has shifted towards digital media in adjusting to the 4th industrial revolution. Data show that there are a lot of people in our country do not have any official computer training however they are using the internet.

How the Innovation Functions

We have created a mobile lab system and developed a desktop/app that has been loaded with lessons and exercises. The app works hand in hand with a Fundanii workbook that the pupils purchase to complete the exercises. Our workshops introduce them to basic hardware and software computer skills. The app is loaded with information and quizzes, answers to the questions listed in the workbook are found on the app, the pupils then have to navigate around the app in order to complete the exercises. To be enrolled in the program, pupils must pay a small monthly fee.

During the workshops, we cover switching the PC on/off, logging on/off, the start button, identifying hardware components (keyboard, mouse, monitor etc.), identifying different software, introduction to basic coding skills and introduction to 2D illustration through our digital storytelling program.

Our program is designed for first time users of the computer, children who would otherwise not have access to these kinds of facilities.

Impact or Success

Our program has had great success in our community. Since we started working in 2016 we have worked in over 10 schools and have impacted the lives of over 10,000 pupils by introducing them the computer basics and coding for the first time in their lives.

Sustainability

The demand for digital learning in rural communities is beyond comprehension. There is a high demand for companies like Fundanii in every township and rural community in Africa. With more equipment and infrastructure, we would be able to target more schools in the area, increasing our potential revenue streams and continue developing the application, thus creating more employment and opportunity for young people living in our community.

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Sciency Learning

High school science lab experience in a smartphone

Country of Implementation: Zimbabwe, South Africa, Botswana, Western Sahara
Organisation: Sciency Learning PBC

Problem which the Innovation addresses

Thousands of schools in low income communities cannot afford the physical models that are required for applied science learning. As a result, over 70% of rural students fail science or choose not to study sciences at all. Important STEM subjects like physics, chemistry and biology that require practicals so that students retain information are then shunned by parents and students alike and perceived as difficult.

How the Innovation Functions

The Sciency app utilises augmented reality technology so as to provide an in-depth laboratory experience for learners. Students download the app and can potentially then access all the science models they would normally find in a school lab (1000+). To put its uniqueness into perspective, imagine a rural hut which contains all the science models found in a state of the art laboratory and more without the hassle of storage as all these physical models would fill up a soccer stadium. Any smartphone is capable of viewing these science learning models. Complicated science diagrams have always been presented to students in 2 dimensions, which has made it very difficult to comprehend, however with the Sciency app, this is a thing of the past. The science models and apparatus can be downloaded so that they are offline, becoming then available anytime for the student to project with and study from. A lab with all these learning models would cost millions and with the Sciency app, every student can have access to this on their smartphone for just USD 30.

Impact or Success

Improved learning can be seen from our app through the grade measurement system which we implemented. When students first revise each topic, they are assigned a grade. Students who have gone on to revise the topics 2-4 times more have seen their grades improved on the topics by up to 70%. We have partnered with the Ministry of Education, which is set to impact over 2000 secondary schools and an estimated half a million learners by virtue of being the first AR lab adopted by the government in Africa.

Sustainability

Our platform is cloud-based and this has already allowed us to easily have students across 10 African countries. With a good marketing budget, we could easily scale across Africa as the problem affects over 20 million students studying sciences. Scalability for us is about quickly gaining market share before our competitors dominate it. We are scalable as we can expand into new subjects such as astronomy, quantum physics, the list is endless. We can expand into different grades like primary education or tertiary education. We are scalable as we can partner with NGOs and CSR departments which seek to make an impact and with which we can cobrand.

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Sciency Learning PBC
nhlanhla@sciency.app

CRSP ROBO / Low-Cost Educational Robotics Toy (LCERT)

Democratising access to quality future-focused STEAM education by offering affordable educational robotics kits and digital learning platforms.

Country of Implementation: South Africa
Organisation: CRSP dsgn (Pty) Ltd.

Problem which the Innovation addresses

CRSP ROBO/LCERT addresses the need for access to coding and robotics education resources that are used to facilitate quality 21st century learning to prepare learners for the 4th industrial revolution. It was previously estimated that more than 87% of South African schools lack access to these STEAM resources and the situation may be far worse in many parts of Africa. The high price-points of existing solutions makes future-focused STEAM education inaccessible for many, which is concerning considering the need for STEAM professionals on the continent.

How the Innovation Functions

The CRSP ROBO Educational Robotics Kit (previously known as the LCERT Kit) is a set of ergonomic electronic building blocks and open-source software that allows learners to design, code and build robotics to solve contextually relevant social issues around them. It includes curriculum-aligned activities, which teachers can use without requiring extensive training, as well as a drag-and-drop programming interface which allows learners to code without requiring consistent supervision.

During 2020, CRSP dsgn developed the CRSP ROBO digital learning platform, to serve as a solution to continue providing essential access to project-based STEAM education during the COVID-19 pandemic. This platform is currently utilised to host and facilitate various online robotics and coding lessons, and virtual clubs and camps. CRSP dsgn has future plans to leverage the platform as a STEAM-focused content repository and social network to engage teachers, parents and learners.

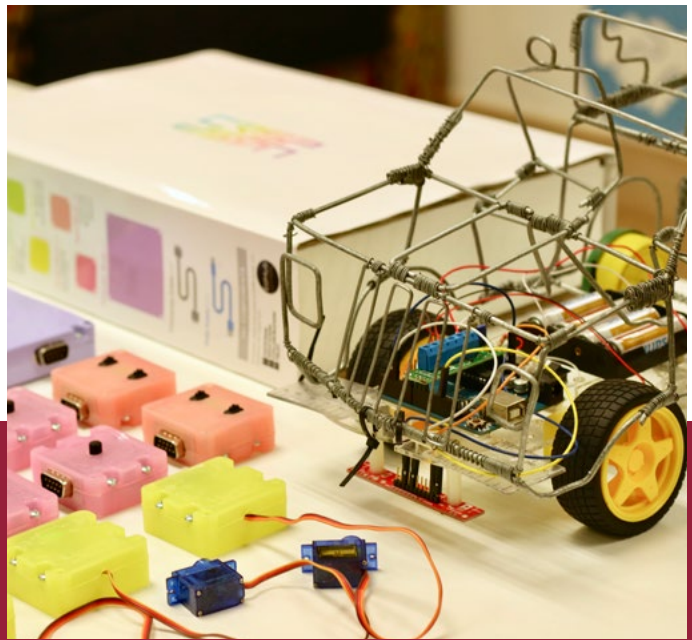
Impact or Success

In its infancy, CRSP dsgn won the 1st prize at the prestigious 2016 SAB Foundation Social Innovation Awards for the LCERT/CRSP ROBO invention. In 2019, CRSP dsgn was identified by UNESCO as one of the leading educational robotics startups in Africa and was invited to present CRSP ROBO to the Director-General and select African Ambassadors during the UNESCO Africa Week in Paris. In that same year, CRSP dsgn was awarded Bronze at the 2019 EdTechX Global Startup Super League in London, which further validated its potential for success within the global education technology market.

Over the years, CRSP ROBO's educational impact was validated through pioneering user-focused pilots with thousands of learners and educators. Breakthrough results were recorded as the Kit was demonstrated to develop key 21st century competencies in learners. In 2020, CRSP dsgn's non-profit Foundation leveraged its insights to contribute towards the South African Department of Education's development of a new Coding & Robotics curriculum. This means that CRSP ROBO's introduction will go on to impact millions of South African learners regardless of their access to the Kit.

Sustainability

As the trend towards introducing robotics into schools and demand for similar products grows, CRSP ROBO will benefit from economies of scale, which will ensure sustainable growth and profitability. Furthermore, CRSP ROBO's digital learning platform will enable it to leapfrog hardware sales growth and maintain user engagement to drive recurring revenue. Lastly, CRSP dsgn has also identified potentially sustainable opportunities to expand into the consumer and homeschooling markets.



Contact:
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Project link:
https://www.crspdsgn.com

AI/VR Solar lab cases

Leveraging technology to make education inclusive to underserved rural schools and communities

Country of Implementation: South Africa, Kenya
Organisation: Priyo Tech

Problem which the Innovation addresses

According to the Digital Marketing Institute there is a mismatch in the current education system. Teachers are expected to prepare students for the jobs-of-tomorrow. Unfortunately most teachers working within the public sector are not well equipped with 4IR concepts and do not have adequate ICT infrastructure. COVID-19 has further increased the need for digital literacy: this became evident when schools shut down and teachers had to teach virtually. Schools without ICT infrastructure sadly missed this opportunity and most of the students from public schools are still expected to obtain a passing grade and must compete for university entry and job opportunities.

How the Innovation Functions

Our solar toolkit app allows educators and leaners to connect during COVID-19 utilising virtual online and offline open source multi-media, artificial intelligence, data science, and animated simulations. It contributes to make education inclusive by connecting students with educators utilizing new methods of teaching and learning through modern technology. These methods assist learners to access the best educational content, lectures, assessments and memorandums, enabling them to access quality education at a reduced cost, supplements course material, allowing them to improve their grades, pass their exams and gain university entrance.

Our hardware called the AI/VR Portable-mini-Solar-lab assists teachers and students to integrate ICT within their classrooms and transform them into an immersive artificial digital experience for schools without digital laboratories. This allows students to have access during class and even after school removing barriers to digital literacy and provides them with 4IR resources that they need to be part of the digital age such as VR/AI goggles, learning apps, digital libraries, cell phones/tablets/laptops, and a solar charging station. It is about assisting teachers who work within the public sector and with vulnerable groups such as in school and out-of-school youth, girl child and children living with disabilities predominantly living in rural, township/slum areas and refugee camps to be part of the digital age and connect during and after school.

Impact or Success

To date we have trained approximately 10,580 teachers and students and impacted a total of 1883 students, 160 of the students have received learnership opportunities to further their careers, 15 are currently employed and 9 have established their own businesses.

Sustainability

We use collaboration to scale up as this has proven successful in the past. Our niche market customers include private schools, government agencies, and corporate companies. We market to them through business to business marketing, offering them a 'buy two and one is donated' strategy which normally aligns with their corporate social investment strategy. Our mass market customers include teachers, youth, parents and youth start up entrepreneurs. We offer our products business to customer at a discounted rate for massive/group training and purchasing. And we also offer them an opportunity to rent our products or subscribe and pay in monthly installments.

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Project link:
http://www.priyotech.co.za/solar-lab-in-a-bag-2/

Learnable

Augmented learning & teaching assistant that allows teachers to compose and distribute lessons via a dedicated mobile app, a computer/tablet and WhatsApp.

Country of Implementation: South Africa, Zimbabwe, Botswana, Nigeria
Organisation: Simba Solutions

Problem which the Innovation addresses

Educators have been inundated with the burden of adapting to ICT and transforming their teaching styles into digital delivery formats. A large gap needs to be bridged in the digital divide in terms of access, inclusion and digital readiness for African teachers excluded from rigid Western LMS platforms.

Learnable helps the teacher instead of replacing them. It empowers teachers with tech tools that are not complicated nor rigid, but enable them to embed their teaching pedagogy and customise it for their learners' needs, with easy access to knowledge bases that aggregate global content sources.

How the Innovation Functions

We used AI and design thinking to lessen the ed-tech learning curve that teachers have to endure in the 4IR and also open up distribution channels for teachers to send learning content to students.

Unlike most platforms, we started with the teacher in mind. Teachers create content via the AI bot or manually. They can also do this by engaging our AI bot via WhatsApp. This allows them to organise tailor-made lessons by following a few prompts and steps. The platform can optionally compile learning material based on the teacher's input. The content can be in the form of literature, audio, quizzes, assessments or even 3D/Augmented Reality (AR) and mark it with a built-in rubric.

Students login via the app to experience the content in its fullest form or alternatively opt to receive the same learning material via WhatsApp. The AI converts literature into PDFs, AR/3D into a video and more, for distribution via WhatsApp for those who have limited data.

By utilising the paramount reach that WhatsApp has amassed over traditional computers or tablets in Africa, we bridge the inclusion gap even more. An Africa where children have the option to use their academic time for learning, instead of the lengthy rural commute to school.

Impact or Success

Based on the success of our previous project, ICT Essentials for teachers in Zimbabwe, which was done on behalf of UNESCO, the impact was as follows. It provided ICT Essential education to over 5,000 teachers via a simple to use mobile application.

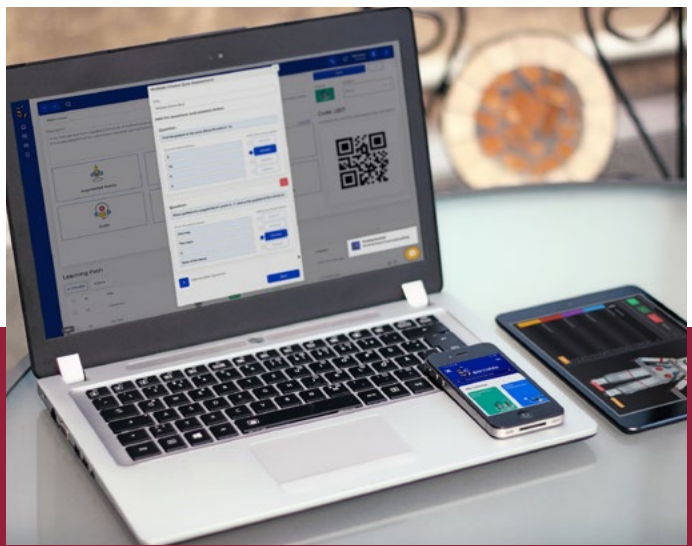
These teachers were able to impact, collectively, approx. 1,000,000 learners who were able to benefit from the essential skills their educator had learnt from our platform. We are on track to reach 50,000 teachers and tutors; over 5 years across the African continent and beyond, due to Learnable's ease of use, affordable access channels and broad knowledge aggregation base. If each teacher reaches 50-60 learners, this could lead to impact and enrich the learning journey of over 5,000,000 learners.

Sustainability

By securing quality content from independent providers, as well as the government curriculum aligned content. This will unlock the value for scale as teachers will find the platform as an aid to their annual teaching plan requirements.

Also, the content is agile, marked via a digital rubric to allow for moderation and can be adapted to suit material for the different markets, learning styles and languages across the continent.

Lastly, the back-end data collection will provide insights on education in Africa.



Contact:
Simba Solutions
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Project link:
https://www.simbasol.com

Zimbarsity

An online database of research material of scholars by scholars.

Country of Implementation: Zimbabwe
Organisation: Kelteve Distinction Technologies

Problem which the Innovation addresses

Africa has been lagging in the adoption of latest technologies, industrial designs and revolutions. Our education system is crafted to match that of developed countries. Often times, our institutions use papers from the developed countries for dissertations and journals for Africa.

This has caused a big problem in that: we have excellent research journals and dissertations coming from African graduates but they are disconnected from the African context. The solutions presented in those dissertations are rather inapplicable in the African context, which gives us good education on paper but is far from practical applications. The case in point is Zimbabwe.

How the Innovation Functions

Zimbarsity is an online database of learning resources for scholars by scholars, this means that it depends on scholars who have completed any tertiary education studies with either a research paper, dissertation, publication or journal. The innovation works like this:

1. A scholar who has completed their tertiary education submit their work on Zimbarsity.

2. A scholar who is still doing their studies can log into Zimbarsity and search what they are looking for and Zimbarsity will index their search to show relevant results as possible.

3. When a scholar finds work they would like to use, they send in a request via us and we will connect them with the originator of the work they make an offer to the owner via the chat platform provided.

4. Once the transaction is completed between the scholar and originator through us, the necessary documents are shared between the two parties.

5. If the work is wanted for investment, it follows a different route that we are part of to ensure the originator is paid what the work is really worth based on intended application.

Impact or Success

Since its launch last year, Zimbarsity has been on the collection phase of research materials. We managed to speak to the scholars who had completed their studies and explained to them what Zimbarsity meant for the future of the African continent. The response was overwhelming and a lot of scholars voluntarily came through with their work that they had used towards the completion of their studies. To date we have collected over 200 research work from the capital city only.

Sustainability

The platform is able to support itself financially and resource-wise once the scholars adopt it at large as a reliable tool for research as well as when the Ministry of Education endorses it as a verified and authentic source of scholarly research material.

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stevetadzoka@gmail.com

Project link:
https://keltevetech.com

Teacher Professional Development Training

Teacher professional development program for government teachers.

Country of Implementation: Zimbabwe
Organisation: Emergination Africa

Problem which the Innovation addresses

For decades, government high schools in Africa have lacked global career guidance services and teachers that can identify, nurture and channel talent into their national economies and ever-changing global economy. As a result, many talented learners are not exposed to opportunities outside their daily existence and so are prone to forgoing the completion of secondary education, post-secondary education (vocational and tertiary), government skill-building initiatives and formal sector employment. This ultimately leads to a missed opportunity in ensuring that African learners develop the skills needed to harness and create opportunities.

How the Innovation Functions

The Teacher Professional Development Program is a 4-6 month program that trains teachers on critical teaching skills and global 21st century skills through experiential virtual and in person modules. The program is unique in several aspects. Firstly, teachers are taught about entrepreneurship and business modelling by industry leaders so that they can in turn coach learners on how to convert everyday problems into business opportunities, a critical skill that all learners must be taught in light of Africa's high unemployment rate. Secondly, the newly minted Teacher Coaches become a part of our Emergination Teacher Coach network which through our learning management system and Whatsapp chat bot groups provides teachers with:

1. Access to localized learning materials that are aligned to the Zimbabwean Competency Based Curriculum, local industry needs and global best practices.
2. Access to a virtual network of peers that earn points and rewards by sharing educational content, technologies and experience to the wider community.
3. Access to an education jobs board enabling teachers to see vacant positions in all government schools and universities.
4. Access to exclusive teacher awards and prizes sponsored by our corporate partners and government.

Impact or Success

Currently, we have managed to train 85 economics, accounting and enterprise studies teachers and 10 school heads (principals) that have impacted 11,607 learners within their classrooms in the space of two months. Additionally, based on the project-based learning module of the training, 120 business ventures have been designed by the learners and have been presented to business leaders across Zimbabwe.

Sustainability

From a systems change perspective we have signed a partnership agreement with the government of Zimbabwe through the Ministry of Primary and Secondary Education (MoPSE) to scale the program to 6000 business studies teachers in 2021 and then follow on with training heads/principals with the MoPSE utilizing a blend of government and donor funding.

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Project link:
https://www.emerginationafrica.org

African Coding Network

The African Coding Network supports African coding schools with scalable solutions in order to address Africa's digital skills shortage.

Countries of Implementation: Nigeria, South Africa, Kenya, Ghana
Organisation: African Coding Network (www.africancoding.network)

The problem which the Innovation addresses

Despite rapid innovations in education technology and huge investments into tech education in Africa, traditional and emerging education systems are not producing enough work-ready tech professionals to meet Africa's existing skills shortage, hampering the growth of Africa's digital economy.

Online learning offers scale but lacks support that is critical for overcoming local infrastructure challenges like internet and computer access in low-resource contexts. African coding schools offer local support but are limited in their ability to scale.

How the Innovation Functions

The African Coding Network (ACN) is an open source project that reduces the costs of training professional developers, increases the quality of training, and greatly expands access to tech careers for African youth. The ACN supports African coding schools and bootcamps with scalable solutions to overcome their many common challenges. This enables them to focus their limited time and resources on being excellent at solving their local challenges.

The ACN's open-source EdTech software facilitates remote, collaborative and asynchronous learning. This enables learners to work from anywhere, at their own pace, working collaboratively on real projects. Coding schools are able to offer training to many more people without the need for additional office space, equipment, or staff. Additionally, the ACN aggregates partnerships and networks to help schools and bootcamps find and select high-quality candidates and accelerate candidates into local and global economic opportunities.

Impact or Success

In 2019, our pilot programme supported 200 young South Africans, 80% of whom got full-time jobs as IT professionals at leading employers after the programme. In 2020, COVID-19 increased the need for remote, collaborative, asynchronous learning. Through partnerships, the number of learners supported by the ACN has more than doubled and the programme has expanded to multiple African countries. We are running additional pilots across Africa with international partners including UNICEF, GIZ and Google.

Lastly, the ACN has received global recognition, winning the Ashoka HSBC futures skill challenge, named 'most scalable solution' and has been shortlisted by QS reimage education, for '*best distributed online programme nurturing 21st-century skills.*'

Sustainability

The open source project creates multiple value streams which contribute to the broader tech ecosystem: additional revenue for coding schools, recruitment fees from employers, an attractive funding channel for international development organisations, and volunteer opportunities for international volunteers.

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Project link:
https://www.africancoding.network

INNOVATIONS FROM WESTERN AFRICA

KARTOON AFRIKA

The "KARTOON AFRIKA" innovation promotes the creation of animated educational content for knowledge transmission

Country of Implementation: Senegal
Organisation: KANARIMAGIK

Problem which the Innovation addresses

Did you know that over 90% of the educational and cultural digital content our children watch on tablets, smartphones and computers are not produced in Senegal? Much of this content is not relevant to the Senegalese or African educational and cultural context. Our solution seeks to promote locally produced digital educational resources for knowledge transmission. Our need is to find partners to meet this challenge.

How the Innovation Functions

Our solution seeks to promote locally produced digital educational resources for knowledge transmission. It is a solution based on two props. The first is establishing a digital creation laboratory which aims to introduce children, young people and teachers to animated cartoons creation as a means of transmitting knowledge on various subjects. The second is establishing a dissemination platform to give children and families in Senegal, Africa and the world access to these educational cartoons produced during our creative workshops. Our solution is unique, as it combines the creative genius of children and youths with the magic of cartoons and the power of the internet to enable our youth to generate animated content for knowledge transmission.

Impact or Success

- In 2015, through a partnership with the CRE (Centre for Research and Testing) and the Ministry of Higher Education and Research, we trained over 60 students in Cre de Ouakam on 2D cartoons creation based on the theme of malaria control;

  You can watch "Ngagne et le Moustique (Ngagne and the Mosquito)" on YouTube at: *https://www.youtube.com/watch?v=lfgmjs-DLAk*.

- In 2018, Kartoon Afrika won the first prize at the Senegal Youth Forum, initiated by the French Embassy in Senegal (*https://www.forumjeunessesenegal.com/presentation/laureats/*).

- In 2020, Kartoon Afrika won the second prize for educational innovation with the GIZ and Atingi Challenge (*https://www.atingi.org/fr/*).

Sustainability

Indeed, our innovation can be sustainably scaled up since the resources we design are adaptable to the several contexts within the Senegalese and African education and culture. Unlike our competitors, our job is to produce multimedia content, which are intelligent, responsive, sustainable and aesthetical to assist youth to learn as they play through manipulation and experimentation. We are also envisaging the establishment of "Kartoon Afrika" in other countries in the sub-region.

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Project link:
https://www.kanarimagik.com

EmBED (Education made Beautiful, Engaging and Delightful)

EmBED is a gamified online learning platform that brings engaging, world-class education to kids in Africa.

Country of Implementation: Nigeria, Ghana, Benin, Mali, Guinea, Côte d'Ivoire, Kenya, Liberia
Organisation: LearnFactory Nigeria

Problem which the Innovation addresses

The project will address 3 core problems directly:

- Out-of-school: 13.2 millions kids of primary age are out-of-school in Nigeria, with a larger number under-schooled. These can be easily swayed into juvenile delinquency and extremism, thus becoming is a danger to any society.
- Unequal opportunity: high cost of quality education are not affordable for most low income families, depriving their kids of equal access to great education.
- Deficient infrastructure: Ramshackle equipment, poor curriculum and demotivated staff, especially in public and rural schools, affect educational outcomes of children in these settings.

How the Innovation Functions

EmBED harnesses the rich African culture of folktales and adventure to create an animated learning platform (experience) using games and cartoons.

- Every learning is an adventure journey (or IJE) through a topic.
- As you travel through the topics, your roadmap (the Scroll) clearly outlines your objectives.
- Encounters are in-topic assessments designed to test your understanding of what you learn.
- An amazing array of animated guides and virtual tutors help the children along to their journeys and provide feedback on learning.

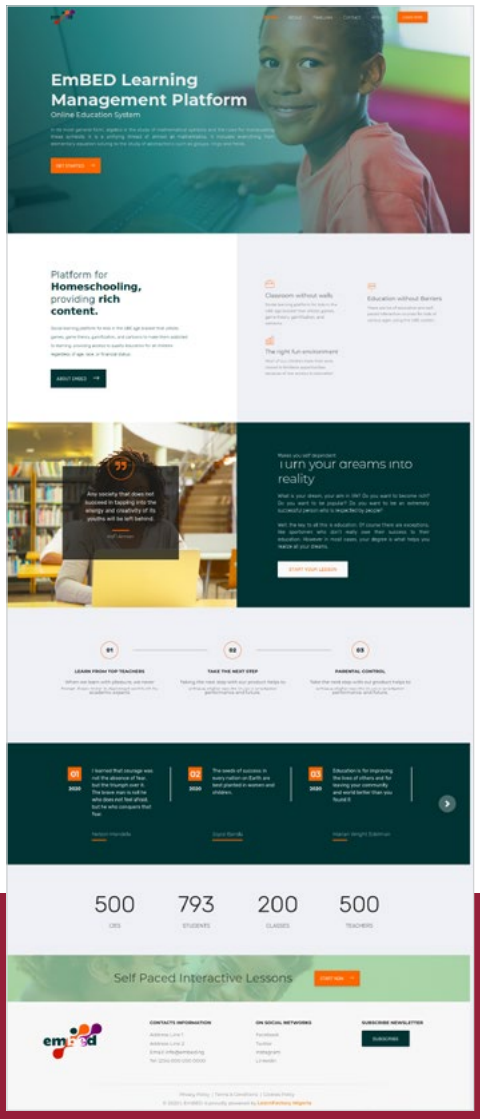
Impact or Success

During an 18-month pilot phase, EmBED trained 1375 children and 75 teachers from 35 schools in coding. For this, in October 2018, EmBED was selected as a finalist in the inaugural Google Impact Challenge in Nigeria, receiving USD 125,000 grant funding with which we set up computer labs in 15 rural schools, trained over 8000 kids in coding, launched coding clubs in primary and secondary schools and commenced the development of the EmBED platform. Also, in October 2019, EmBED was selected as an inaugural partner of the Google Online Safety Roadshow, in which we trained over 5800 kids on how to stay safe while online.

With the advent of the COVID-19 enforced lockdowns and the restrictions on physical interaction and training programs, we had to pivot EmBED into an online platform. This we have been working on and hope to increase the scope of impact once done.

Sustainability

In early 2020, EmBED expanded its scope to cover STEM and digitize the 9-year Universal Basic Education curriculum, delivered via online, mobile and digital devices (tablets and SD-cards), with the goal to increase the learning outcomes for children in Africa and make education accessible, affordable and engaging. This aligns with the UN SDG #4 "Quality Education for all".



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LearnFactory Nigeria
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Project link:
https://learnfactoryfoundation.org.ng

Slatecube ECS

Slatecube ECS are cloud-based services designed to intelligently up-skill, assess and integrate top entry-level talent.

Country of Implementation: Nigeria, South Africa, Swaziland
Organisation: Slatecube Talent Accelerator Ltd.

Problem which the Innovation addresses

As many as 75% of African graduates remain unemployed 12 months post-graduation, indicating the mismatch in skills taught at universities and those sought by employers. Up to 2 million entry-level jobs go unfilled each year or are outsourced out of the continent. We lack tailored digital platforms that seamlessly upskill and integrate talents based on trends in market demand.

How the Innovation Functions

Slatecube ECS (which includes Workforce™ and Accelerate™) employs smart technologies to bridge Africa's skills gap by:

- Providing self-paced project-based employability and digital skills courses that are built to reflect the skills employers want,
- Leveraging predictive analytics to continuously develop the employability index (hard and soft skills) of entry-level talent, and
- Enabling businesses to leverage a skill and personality-based methodology to streamline their recruitment processes and gain access to a robust pool of bespoke entry-level African talent.

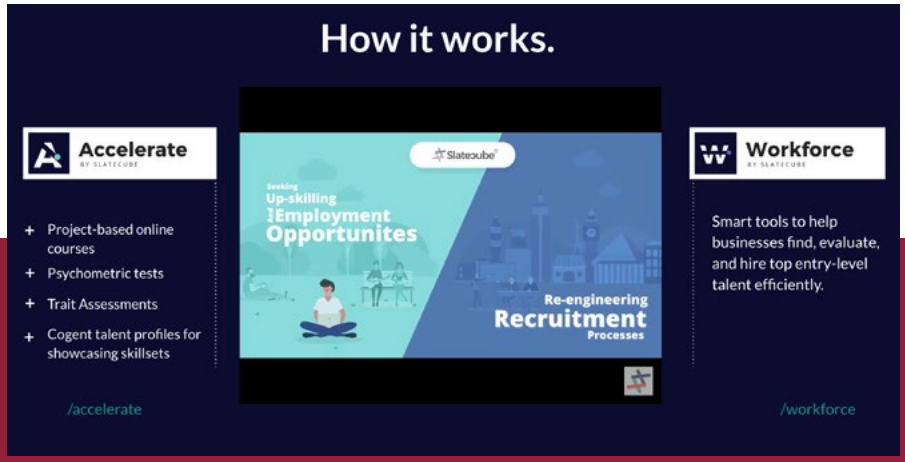
Our innovation's USP lies in its effective Skill-to-Course Matching and Intelligent Talent Integration algorithm.

Impact or Success

1. 80% job placement rate.
2. 250 talents in our outsourcing team each quarter work on client projects to build requisite industry experience while also getting paid.
3. Effective digital training and intelligent recruitment programmes developed for more than 100 companies to date.
4. Nearly 13,000 people have used our digital platform to build in-demand skills since 2018.
5. We are physically present in Nigeria, South Africa and Swaziland (Eswatini), with a growing market adoption rate across several African countries.

Sustainability

1. Leveraging strategic partnerships with government agencies, schools, and companies (tax rebates on each talent hired, loan-based digital skills programmes like what we have with the Lagos State Employment Trust Fund).
2. Adequate funding to develop and support more digital skill programmes, particularly for youths in disenfranchised communities. We have implemented something similar in South Africa through local partnerships with NPOs, CSR projects, and government incentivized talent projects.



Contact:
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Project link:
https://www.slatecube.com

C-STEMP LMS

An LMS with Multimedia training resources translated into local languages for accelerated construction skills training

Country of Implementation: Nigeria
Organisation: C-STEMP EDUTECH

Problem which the Innovation addresses

There is a fundamental supply problem connected to very low skills among operators in the industry, resulting in importation of skilled artisans from overseas and neighboring countries. Recently, the National Skills Qualification Framework (NSQF) was established to drive standardized training and assessment but it's yet to fully take off. This innovation will address specific needs such as:

- Unaffordability of and inadequate access to acquiring construction skills
- Barriers of language and literacy levels in training delivery
- Cumbersome assessment method
- Scaling and social distancing requirements due to the pandemic

How the Innovation Functions

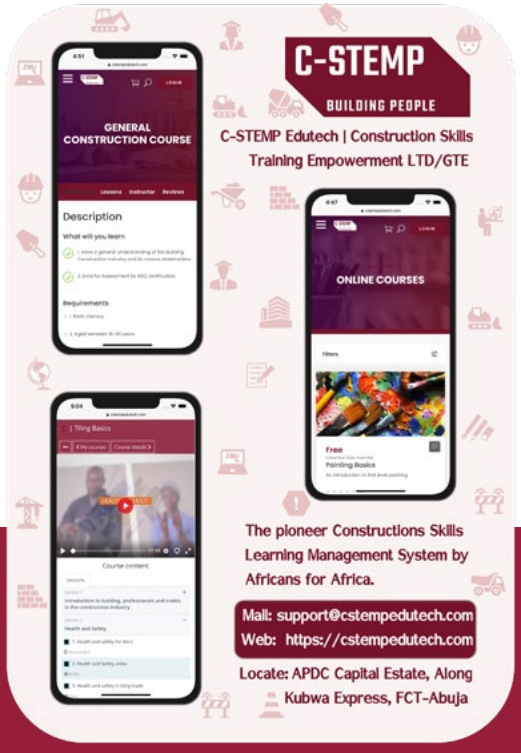
The innovation is a Learning Management System (LMS) tailored to the needs of construction skills and the vast population of Nigerians who make up the construction labor. The LMS is the first to be designed specifically for vocational skills in a sector for which the major mode of learning in Nigeria is traditional apprenticeship through physical contact. Our innovation is also the very first learning platform in Nigeria with multimedia training resources translated into major local languages (Pidgin English, Hausa, Igbo, Yoruba, subtitled in the widely used Arabic type Ajami script) for delivering accelerated construction skills training and assessment in line with the National Occupational Standards. The LMS provides online courses, known as MOOCs (Massive Open Online Courses), which will also be available offline. The courses will be affordably priced and revenue will be derived from course subscription and certification. This vocational platform enables us to reach as many people as possible at low costs.

Impact or Success

- Supported in gathering evidences of learners in portfolios for access to assessors and verifiers, leading to their certification and licensing by the awarding body and sector skills council.
- Assisted to conduct Training of Trainers in soft skills for 60 participants across the country.
- Supported increased interaction with the trainees with reduced contact time (necessitated by the COVID-19 pandemic), as trainers are able to engage their students outside classroom walls.
- Encouraged lifelong learning as users (who are mostly adults with family responsibilities) are now more inclined to take courses and improve themselves, while on the job.
- Elicited the interest of critical stakeholders, including the Federal Ministry of Education.

Sustainability

- Developed content made available via the internet to a global audience through the LMS or other subscription channels and to training centers through various storage devices for offline use.
- Expanded capacity and reach of the platform beyond training in construction sector or what can be offered in traditional classrooms/workshop settings.
- Construction companies can utilize the resources to train new hires onsite wherever they are starting new projects, making it possible to deploy local labor.



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Project link:
https://cstemp.org

E-LEARNING.NG

E-LEARNING.NG is an educative platform that provides access to teaching and learning materials at minimal cost.

Country of Implementation: Gambia
Organization: Fusion Mobile

Problem Which the Innovation Addresses

Fusion Mobile is an Information Technology firm that provides technology services aimed at improving the quality of education in Nigeria and The Gambia and seeks to bridge the gap between the traditional way of learning and the use of mobile technologies in Africa. Our e-learning model addresses the challenges faced by urban and rural dwellers that have little or no internet facilities to access e-learning as our model is an online/offline solution.

- Online is for collaborations
- Offline Learning Contents

See *http://www.e-learning.ng*

How the Innovation Functions

Our solution comes packaged in 16GB/32GB ultra-slim, class 10 memory cards that are compatible with any Android device or computer. E-learning.ng is structured to provide three main functions that have numerous features within:

1. Online teaching and learning
2. Offline teaching and learning
3. Collaborative and management interface for students, teachers and schools

Impact or Success

We describe the impact of our solution without addressing the details since inception. In the emergence of COVID-19 pandemic the Ministry of Basic and Secondary Education MoBSE relied on radio programs and television broadcasts to help students study while the lockdown is still on, which incurred a lot of costs for both the Ministry and developmental partners without quantifiable results.

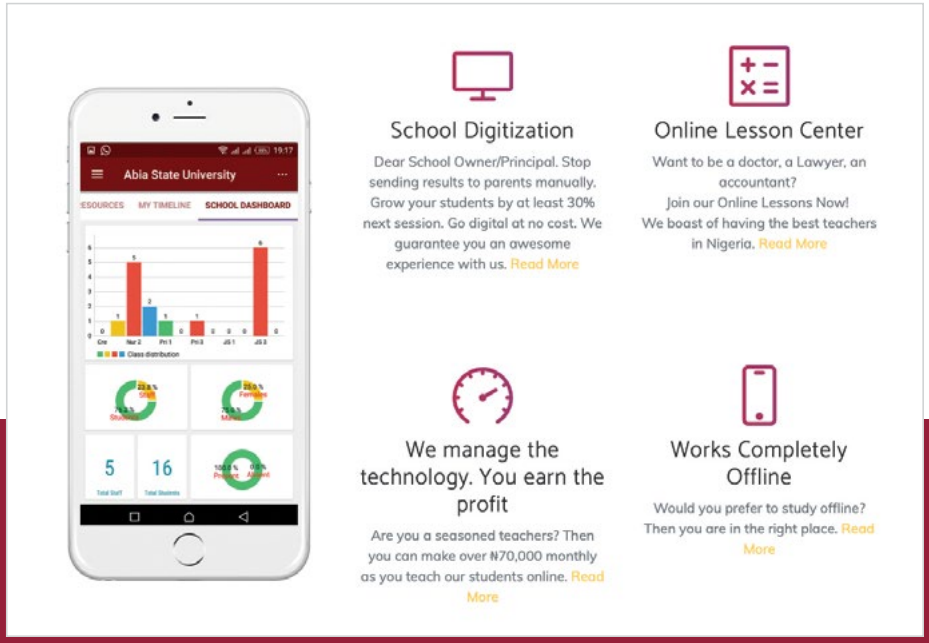
- Students are not glued to the television or their radios
- Studying morale is not on the increase
- Course materials are not available to students
- Teachers are helpless in sustaining the teaching and learning process

The impact of our solution turned these factors around in a matter of weeks as one SD card holds a full year video lectures and study content for both junior and senior secondary schools.

Sustainability

This innovation can be up scaled in four steps.

- An e-learning recording studio for schools or ministries of education
- Adoption of Fusion Mobile learning management system
- Provision of quality SD cards for offline database
- Capacity building/trainings for schools and ministries



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Fusion Mobile
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Project link:
http://www.e-learning.ng

Keep Ghana Learning

A remote teaching and learning toolkit aimed to help teachers and parents during the COVID-19 crisis

Country of Implementation: Ghana
Organisation: Chalkboard Education

Problem which the Innovation addresses

We at Chalkboard Education understand that schools are keen on ensuring continued access to uninterrupted teaching for pupils in low and middle income communities by rolling out a distance learning programme during this COVID-19 crisis.

How the Innovation Functions

Our application is unique in that we responded to the national need to support teachers in 3 ways during the COVID-19 school closures:

1. We provided them training to reskill themselves via distance learning. We developed content relevant to our reality in terms of connectivity, devices and factored in cultural and social norms.
2. After the training, teachers rolled out distance learning programmes via our application. They were able to create, distribute, track and adapt their classes.
3. Pupils received and continued their learning directly on their devices. Our low data consumption model ensures that students did not drop out due to the financial cost of e-learning.

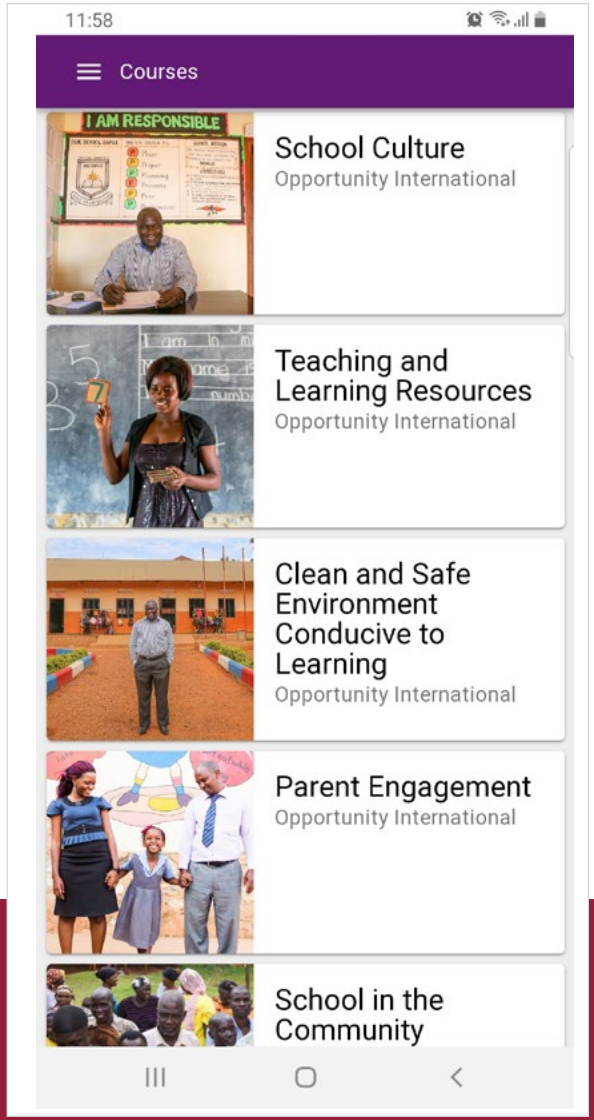
Impact or Success

Client: Jackson Educational Complex Country: Ghana
Date: 2018-2020
Project description: Chalkboard Education created and distributed training material from Jackson Educational Complex to over 10,000 of their students in all 16 regions of Ghana.

Client: Opportunity International
Country: Ghana, Uganda Date: May 2019-March 2020
Project description: A customised learning management system (LMS) to support schools in the EduQuality program impacting over 500 teachers and school leaders in Ghana and Uganda.

Sustainability

After the first phase of the pilot, we will roll out a business to client approach and the teachers would pay a subscription fee to continue their professional development. We would onboard 1,000 new teachers each quarter and target USD 10,000 per quarter.



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Project link:
https://www.chalkboard.education

Afrilearn

Afrilearn integrates genius teachers, animators and developers to deliver affordable world-class education for Africans.

Country of Implementation: Nigeria
Organisation: Afrilearn International Limited

Problem which the Innovation addresses

Nigeria currently has an over 200 million population base. Of this number, 80 million (40%) can't read or write. 120 million (60%) can't engage beyond religion and metaphysics. 170 million (85%) can't create anything meaningful. Education systems across Africa are in critical crisis; it's an emergency!

How the Innovation Functions

Afrilearn integrates genius tutors, animators and developers to deliver curriculum-specific and skill- based video lessons for secondary school students (aged 12 to 22) in Nigeria and across Anglophone West African countries (WAEC) including Ghana, Sierra Leone, Liberia and The Gambia.

Every day, the Afrilearn studio hosts seasoned tutors who teach different subjects covering the entire government-approved curriculum alongside premium technology skills in front of cameras (sample: *https://bit.ly/3jVY4q7*). Afterwards, these video contents are illustrated with interactive animations, gamified exam quizzes and assessments to aid understanding because whatever students learn with pleasure, they never forget.

Once completed, our vast library of world-class video lessons is deployed to users via app, web and data-free dongle subscriptions at highly affordable rates. Beyond leveraging machine learning and artificial intelligence to deliver personalised learning, our robust video library is also synchronized for compression optimized streaming, to enable users learn offline, on any device, anytime, anywhere.

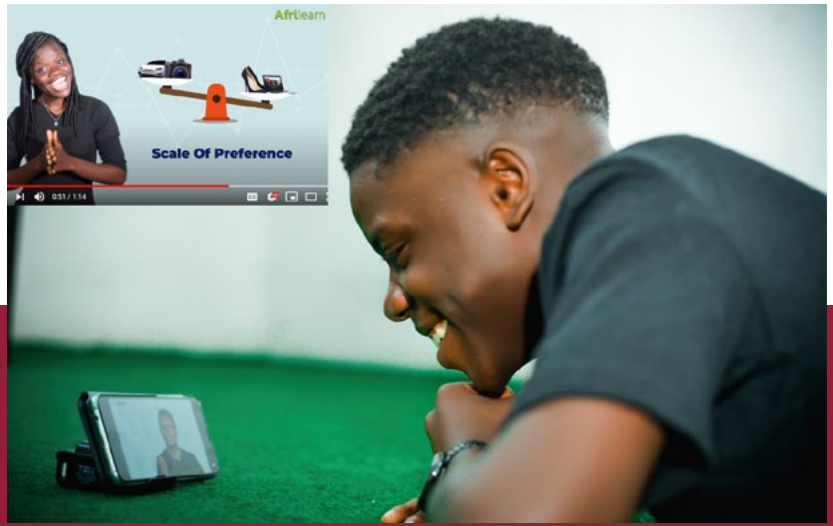
Impact or Success

In response to the COVID-19 pandemic and school closure across Nigeria, on April 5, 2020, Afrilearn launched its MVP ClassNotes.ng, an innovative e-learning platform that provides complete secondary education content online. Within its first month, the platform amassed 237,601 visits. So far, over 9306 registered users have achieved 87% improved learning outcomes using our engaging platform, with overwhelming feedback and national press coverages *https://bit.ly/3cx5VWx* and *https://bit.ly/2MtKBXh*.

ClassNotes.ng has since been ranked Nigeria's #1 basic e-learning platform, empowering thousands of young Africans daily, and over 95% of students, teachers, parents and schools who have used ClassNotes.ng review it is a highly effective resource.

Sustainability

Upon achieving Nigerian market penetration through strategic commission partnerships with schools and government agencies, mass subscriptions, content API monetization, dongle sales and integrated marketing, we aim to replicate Afrilearn across West African countries. For the West African market of over 300 million secondary school students, Afrilearn has a masterplan to capture 5% (15 million users) of this audience with its widely loved and immersive learning experience within 5 years. The global EdTech market is projected to reach USD 404 billion by 2025 and Afrilearn is well-positioned to be the major catalyst fueling this growth across West Africa. Therefore, an investment in Afrilearn is an investment in Africa's future. For more, please visit: *myafrilearn.com*.



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Project link:
https://myafrilearn.com

Ileemore

E-learning platform for secondary school students and teachers.

Country of Implementation: Nigeria, Sierra Leone, Liberia, Ghana
Organisation: Proton Precious World

Problem which the Innovation addresses

88% of students in sub-Saharan Africa schools do not meet the basic numeracy and literacy requirements.[1] For instance, in Nigeria, based on the statistics released by JAMB (Joint Admission Matriculation Board) and WAEC (West Africa Examination Council), close to one million secondary school students fail at least one of the matriculation examinations needed for admission into tertiary institutions, every year.

How the Innovation Functions

We have developed an e-learning platform, *www.ileemore.com*, for providing teachers with strength and weakness analysis of students to improve learning outcomes, help teachers intervene in real- time and in students' learning gaps, and provide instant feedback and personalized education.

Our platform enables students to take tests on certificate examinations with previously used questions on subjects offered in school. We present the answers in a comprehensible, conversational and interactive way with the aid of diagrams and animations to drive the point home. Students can take tests based on topics and get formative feedback and learn adaptively. Students can also ask their own questions and get quality answers from our tutors.

Based on these engagements, we generate reports of students' strength and weakness in each subject and provide them with personalized tips to aid their learning. Teachers (and parents) also get these reports on each student to help them in a personalized. For instance, a teacher can know the specific sub-topic a student is not performing well in before taking a matriculation examination.

We adopt the concept of learning engineering to develop our content and deliver our content.

Impact or Success

We launched in 2018 signing up 500 Nigerian students who took the 2018 Unified Tertiary Matriculation Examination and recorded a 90% pass rate.

To date, we have reached over 1000 students across the 5 English-speaking West African countries (Nigeria, Ghana, Gambia, Sierra Leone and Liberia) and formed three school partnerships with fifty more in the pipeline.

Sustainability

The similarities between the curriculums of the five English-speaking countries in West Africa have given us leverage to reach five countries concurrently. In the next two years, we will develop content for the junior secondary school and eventually for the entire K-12.

We have both an online and a regularly updated offline version of our e-learning platform. This will help us to scale and deploy our platform in underserved communities in sub-Saharan Africa.

[1] *http://uis.unesco.org/sites/default/files/documents/fs46-more-than-half-children-not-learning-en-2017.pdf*.

Contact:
Proton Precious World
isolaprecious@gmail.com

Project link:
https://ileemore.com/aboutus.php

Projet BARKA

This is an emergency education support project which uses new information and communication technologies

Country of Implementation: Burkina Faso
Organisation: KAFYKA SARL

Problem which the Innovation addresses

"BARKA" is an innovative project which not only helps to improve the effectiveness and efficiency of the education system, but also ensures continued teaching/learning even in time of crisis or involuntary interruption. Thus, despite "dead" periods during the school year, students are able to learn every day and sit for various examinations.

This project combines five components on a single platform that is accessible via mobile phone, tablet, or computer at: *https://barkabf.com/*, as well as a school monitoring application, Barka, which is available on Play Store.

How the Innovation Functions

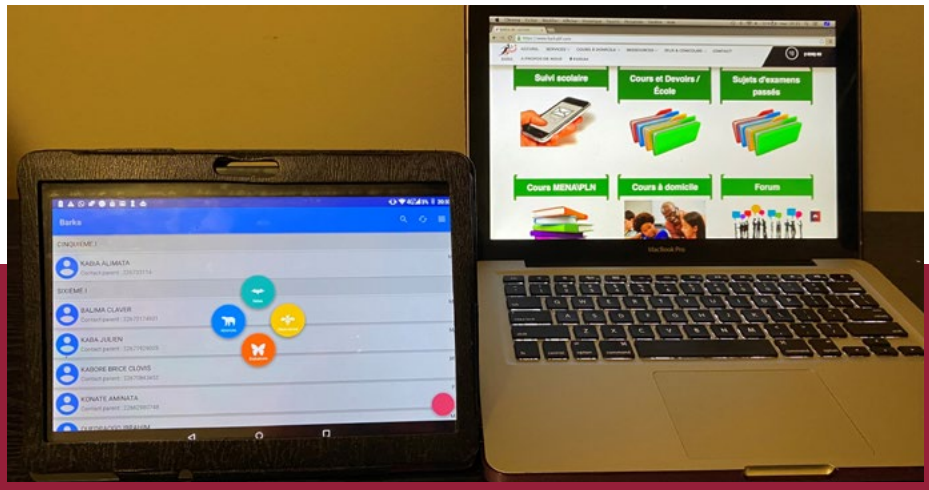
Our innovation is unique in Africa because it enables the interconnection of all schools within a country on a single web platform which can be logged into by all students regardless of locality, or even from their homes, to access question papers, assignments and courses of their or other institutions. Furthermore, on the same platform, institutions can offer online courses and allow students to hold discussions in a forum with personalised access to ensure data security. Our technology offers parents an opportunity to obtain in real time information on their children's school activities (urgent information, schoolwork schedule, periods of absence, grades, etc.) via SMS for parents without smartphones, through our Barka app which they can download from Play Store or from our site, all thanks to an application installed on a tablet provided to institutions for the purpose of sending information. Also, home tutors may be selected online on our platform. In short, our system comprises a web administrator's platform, a mobile application for institutions, a mobile application for parents of students, a website for students and their parents, *www.barkabf.com*, and virtual assistance to through our WhatsApp chatbot accessible on +226 54 93 60 60.

Impact or Success

Improved quality of the current education system in Burkina Faso, with increased success rate in the different exams and good use of ICT for education, thanks to facilities offered by Barka.

Sustainability

The project will be executed by KAFYKA, in partnership with the Ministry of Education, and with technical support and funding that we expect to obtain from the African Union. The Ministry will monitor the execution of activities to promote better results. We hope to reach other countries as we scale up internationally.



Contact:
KAFYKA SARL
kabore_clovis@yahoo.fr

Project link:
https://barkabf.com

Schoolinka

An online learning platform dedicated solely to the professional development of teachers in Africa.

Country of Implementation: Nigeria, Ghana, Kenya, Uganda
Organisation: Schoolinka NG

Problem which the Innovation addresses

According to a UNESCO Statistics report of 2019, 1 out of 3 teachers in Africa lacks training. It is an agreed fact that quality education begins with qualified teachers who deliver good lessons so that students can learn. We conducted an in-depth research to understand why teachers are not attending training, and we found major reasons to be inaccessibility, unaffordability and lack of incentives. To solve this, we created an online learning platform that puts the power to access professional development in the hands of the teachers. This means that they can receive training from the comfort of their homes for two dollars.

How the Innovation Functions

Schoolinka is an Edtech social enterprise that is creating an ecosystem of highly skilled teaching workforce for schools in Africa. With a learning model that is powered by educators with experience and expertise, Schoolinka designs exciting professional development opportunities for teachers and delivers them through in-person workshops, instructor-led online classes and an online learning platform (*https://schoolinka.com*) for free or at a very affordable fee.

With this learning model, we are putting the power to access professional development in the hands of teachers by making it affordable and easy. Also, we are helping other teacher training organisations increase their reach and earn more as they can now create quality teacher training content and host it on our online learning platform at no cost.

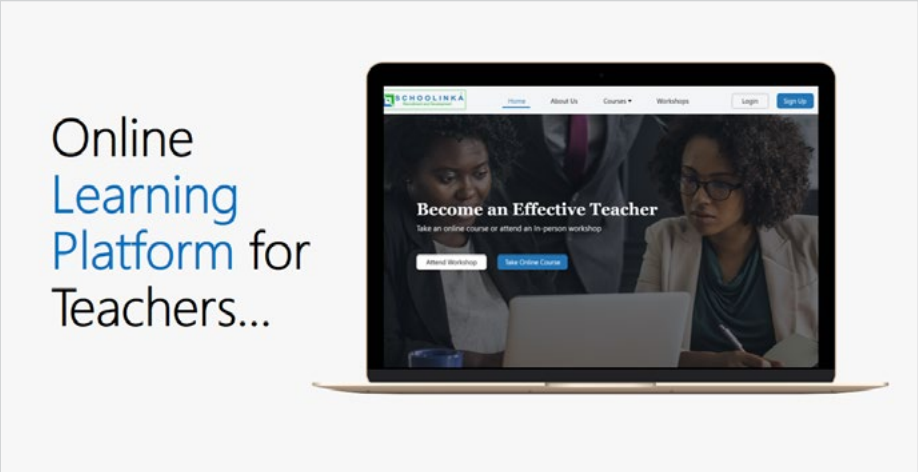
Impact or Success

We have trained over 2000 teachers across Nigeria, Ghana, Kenya and Uganda in our physical classes, instructor-led online classes and through our online courses. This work is led by over 100 course instructors distributed across Africa.

Sustainability

Our sustainability plan is integrated into the success of our learning technology. We look forward to much more growth as teachers begin to access our online learning platform (*https://schoolinka.com*), where they can take online courses that will help them become highly effective teachers.

With this model, we can create courses only once and continue to generate revenue from the courses as long as they are still relevant. So the cost of production is low and mostly incurred once at the start, while we maintain a huge earnings potential given the size of our potential market and the ease of accessibility of our product.



Contact:
Schoolinka NG
koluwaseun30@gmail.com

Project link:
https://schoolinka.com

DigiLearns

Zero-tech solution for e-learning and information access via SMS/USSD delivered to basic features phones.

Country of Implementation: Nigeria
Organisation: Aid for Rural Education Access Initiative (AREAi)

Problem which the Innovation addresses

According to UNESCO, about 826 million students, 89 per cent of which are in sub-Saharan Africa, have no access to a household computer and 706 million have no internet at home. Similarly, In Africa, 2 out of 3 students miss out on quality learning experiences because they can't afford textbooks or lack internet access and do not own smartphones. Data costs, smartphone access and internet connectivity continue to deepen educational and social inequalities for disadvantaged children from low-income families and low-connectivity contexts who are circumstantially limited from accessing quality educational opportunities.

How the Innovation Functions

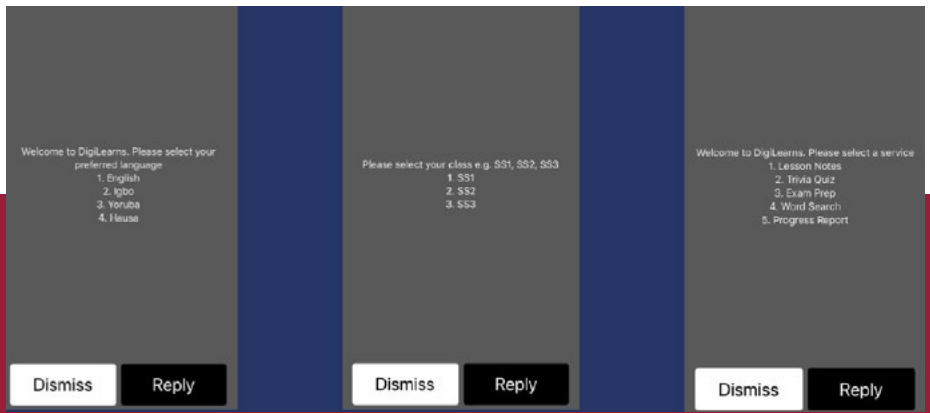
DigiLearns is an offline m-learning solution that enables learners to access high-quality, government- approved, and contextually-relevant content in the form of textbook and revision materials, gamified quizzes, and mini-lessons via SMS and USSD and on basic feature mobile phones that do not require internet connectivity. We are leveraging the ubiquity of access to personal technology, such as hand-held or portable mobile devices, and increasing mobile penetration even in resource-limited environments. The innovativeness of DIGILEARNS as a solution, built to democratize equitable access to learning materials offline, is tied to its massive potential to enable remote, personalized and quality virtual learning via channels and tools that are extremely affordable, readily available and easily accessible. Students or learners can also ask teachers questions, search the internet offline, receive assessment questions – both multiple-choice and open-ended – by text, and get feedback on their responses, whether right or wrong. The data of a student's academic progress is saved in the student's web account and made into a report, giving schools and parent's access to meaningful data and tips for helping their students. Teachers can assign homework to their students via SMS and receive classroom and administrative tips to help them run their classrooms and schools more efficiently through text messages. To access, you all have to dial *3549# on any basic mobile phone or send LEARN to the same code.

Impact or Success

Despite its launch as a direct response to learning disruption as a result of the COVID-19 pandemic, DigiLearns is currently being used by over 2000 students across Nigeria within the space of 3 months. Through funding support from the Queens Commonwealth Trust, One Young World, Global Changemakers Switzerland, we are providing personalized learning experience, individualized teaching support, tailored assessment and feedback, as well as access to curated practice questions and revision materials for continental and national certificate examinations such as WASSCE, NECO, UTME and POST UTME.

Replication and Sustainability

The widespread use of DigiLearns and its potential to scale exponentially countrywide can be made possible through partnership with mobile network operators. The current cost of subscription can be lowered with subsidized learning packages with possibilities of unlimited study over a period of time. Overtime, DigiLearns will evolve into a web-based application, but will however maintain the subscription-based model. It will include interactive, multimedia-rich content, such as audio and video content, electronic worksheets and games and also integrate the use of assistive technologies such as text-to-speech capabilities in order to meet the unique needs of students with learning disabilities/difficulties.



Contact:
Aid for Rural Education Access Initiative (AREAi)
lanre@areai4africa.org

Teseem - Early Education Interactive learning for African Kids

Interactive Early Education Apps in African Languages and Context

Country of Implementation: Nigeria, Ghana, Kenya, Côte d'Ivoire
Organisation: Zenafri

Problem which the Innovation addresses

Researchers have shown that many children in Africa do not speak their country's lingua franca (typically English, French, Portuguese or Arabic) as a first language. However, these same children are expected to learn in these languages. This creates a unique problem, making the assimilation of what is being taught harder and generally extends the learning time. According to UNESCO, the best way to educate children is through their mother tongue or with contexts they understand.

How the Innovation Functions

Teseem-First Words is an award-winning application that teaches toddlers their first words in traditional African languages like Hausa, Igbo, Yoruba, and Swahili, thereby making it easier for them to learn because it is in their mother tongue before they begin to study in English or French.

It teaches foundational words such as basic objects, colors, numbers, and more using engaging interactive animation and games. It greatly reduces the difficulty young children face when they start school for the first time and are suddenly faced with learning in a language that is different from the language they speak at home. Our app helps smooth out this transition.

Impact or Success

Our applications have directly improved learning outcomes for over 200,000 children across Africa, with 2000 children using the apps daily. Children aged 2-4 learn basic words 40% faster on average when our apps are used in addition to traditional classroom learning.

We have also recently launched Sade's Stories (an educational cartoon series based on African folktales), which is to be distributed online and via terrestrial TV. (*https://youtu.be/FMuS_JcGwg4*)

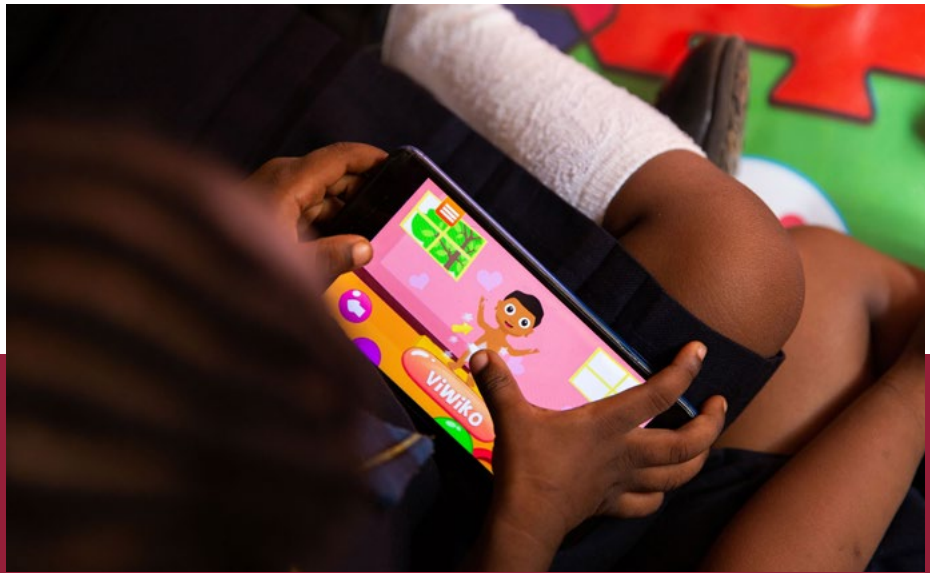
Our solutions lead to better and improved learning for young children both in Africa and outside the continent. The impact is even greater as over time, faster and easier access to quality education has been shown to direct influence national economies positively.

Sustainability

As a mobile first company, we are able to distribute our apps globally with ease, allowing us scale rapidly taking into consideration any localization we may need to do.

As mentioned above, we have also developed an animated cartoon series that is set to generate additional revenue while rapidly scaling our impact.

In response to the impact of COVID-19, we are also developing koyamu.com, a multimedia educational platform for African children which will contain a variety of content ranging from interactive ebooks, audio books, videos, and games. All of these are geared to providing educational resources for first learners.



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ICT SCHOOLPLUS INNOVATION

ICT Schoolplus –Transforming Nigeria Educational System Using Information Communication &Technology Development

Country of Implementation: Nigeria
Organization: Megatronic Network Solutions LTD

Problem which the Innovation addresses

Schools connectivity, delay in payment of schools fees, limited access to data and reports, labor- intensive students admission, manual timetable, delay from generation of students' ID, irregularity in students attendance, generation of manual reports and school assessment, proletarian courses and subject management, school administration.

How the Innovation Functions

School++ Innovation functions as a cloud-based and integrated on-line educational mobile automation system that connects schools, parents, teachers and students with modern technologies. Parents pay their children school fees anywhere there is internet and monitor the performance of their children. It allows students to learn efficiently, co-ordinate with their instructors and enhances e-learning facilities. The app allows educators to upload result, generate students ID card, upload timetables, and handle student's attendance. The School++ helps in improving the quality of education by enhancing the teaching and learning process, which brings about better performance and increases the standard of education in Africa.

Impact/Success of the Innovation.

School++ brought in an instantaneous and up-to-date app effects to many school learners in Nigeria. We have 4789 students on the platform and 75% of the students were successful when WASC results were released in September 2020. Three higher institutions in Nigeria are using the payment features of the app. School++ was adopted by college principals to be used in schools. The app builds students' knowledge, increases their collaboration and reduces the attainment gap. It reduces teachers workload, improves teacher knowledge, saves school money and provides accurate data for school. The app also improves school processes, parent engagement and also develops teacher's wellbeing.

Sustainability

School++ is bearable and viable. The innovative project will meet the needs of the present users without compromising the ability of future generations to meet theirs. It has three main pillars: economic, environmental, and social. These three pillars are informally referred to as people, planet and profits. It means as long as there are people, planet and School ++ will be sustained for profitability. We charge our users (students) on a yearly basis for using the full implementation of our app. We introduce free Google computer science curriculum and scratch coding training to all the schools in our community and this forms one of the basis for the popularity of our School++ product, its acceptability and patronage.

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VoltSchool: A Digital Learning Platform for Africa

VoltSchool supports open and continuous learning for a broad category of secondary school students in Africa.

Country of Implementation: Ghana, Nigeria, Liberia, Sierra Leone, The Gambia, South Sudan, Uganda
Organisation: Vilsquare

Problem which the Innovation addresses

Scarcity of schools in relation to population, inadequate supply of specialist teachers and costs of teaching and learning materials are issues bedeviling secondary school education in Africa. In rural areas, it is more likely that girls will be denied education due to economic needs and cultural barriers. The COVID-19 pandemic and the issues that have arisen in the educational sector have revealed a glaring need to rethink the way learning is delivered and accessed. Thus, the option to further leverage solutions on technology drivers, by complementing traditional face-to-face learning methods with online/virtual learning cannot be over-emphasised.

How the Innovation Functions

VoltSchool provides high quality digital learning for secondary school level learners across Africa. Hosted at *https://voltschool.com*, it supports asynchronous learning, providing an inclusive platform for learners, especially girls and other vulnerable persons, to study at their own pace and convenience. VoltSchool is compatible with assistive computer technology for visually challenged and hearing impaired learners. It is accessible on digital devices of all screen sizes and on mobile networks with a minimum of 2G connectivity. Learning materials are lite, making it affordable to stream. An embedded virtual science lab allows learners to simulate experiments. The chat feature supports social exchanges, contributing to building a sense of unity and oneness among Africans in a safe and neutral space. Backend data capture and analysis determine trends, identify gaps and help proffer solutions to teaching and learning challenges on the platform.

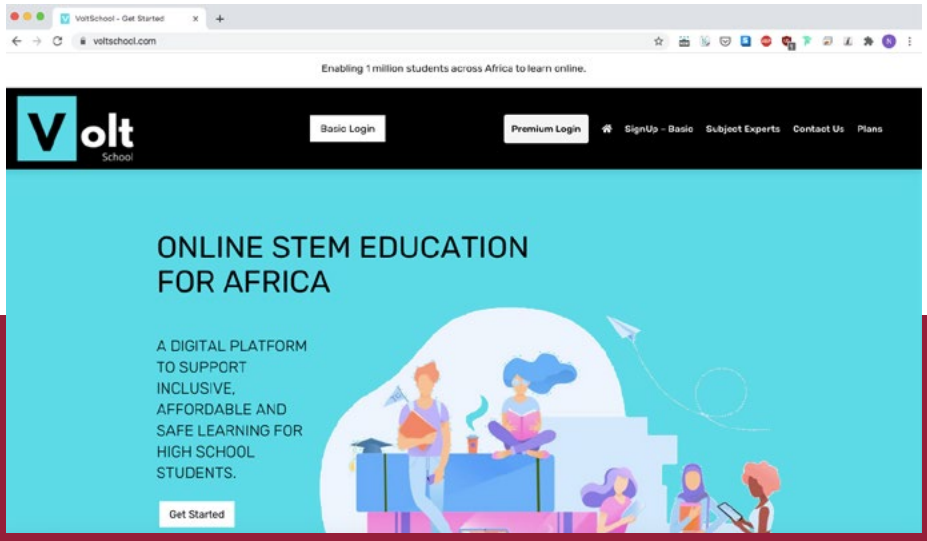
Impact or Success

VoltSchool launched in June 2020, at the height of COVID-19 lockdowns so no impact level results have been received. However, at the end of November 2020:

- Over 5000 learners from across 12 African countries registered on the platform with an average completion rate of 85% completion per topic recorded.
- Older students (above 19 years) were using the platform to prepare for private School Leaving Exams (GCE).
- It was adopted by the League of Imams in Liberia for use in koranic schools.
- NGOs in South Sudan and Uganda were using VoltSchool resources to support their offline teaching in rural areas and parts of the refugee community respectively.
- VoltSchool partnered with Obafemi Awolowo University Ile-Ife and Federal University of Agriculture Abeokuta to deploy virtual science labs.

Sustainability

VoltSchool currently offers 2 plans – free basic and subscription-based premium. The project will prioritize user acquisition and explore partnerships and collaborations with education sector stakeholders. This will ensure that rural penetration deepens and VoltSchool continues to provide value to all users, while ultimately doing no harm and improving livelihoods of its beneficiaries.



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Project link:
https://voltschool.com

Slum2School Virtual Learning Classroom

A State of Art Virtual classroom that connects and enables collaboration between remote learners using an innovative LMS.

Country of Implementation: Nigeria
Organisation: Slum2School Africa

Problem which the Innovation addresses

This innovation uses digital technology to give learners access to uninterrupted learning when school are physically closed due to pandemics like COVID-19 and distance barriers. The COVID-19 pandemic saw millions of children and youths across Africa disconnected from education but with the Virtual Learning Classroom, the challenges caused by distance, lack of socialization, limited communication, and poor learning management and engagement will be limited and eventually eliminated.

How the Innovation Functions

The Slum2School Virtual Classroom is the first of its kind in Africa. It is an interactive digital classroom which can host hundreds to thousands of learners at the same time in live classes. Using a customized virtual learning management system, a teacher is physically present and hosts classes that reach learners wherever they are. Learners can join using any digital devices available to receive live lectures remotely and can also access pre-loaded content offline when there is no internet connection. Learners are displayed on large screens, allowing the teacher to closely monitor and directly interact with learners as done in a physical classroom. These face-to-face interactions are a unique strength of our solution and its synchronous engagement of learning keeps them motivated and strengthen core 21st century skills such as communication, critical thinking and collaboration.

The virtual classroom creates a collaborative learning experience, and the teacher is able to use an interactive whiteboard, deliver polls, monitor attendance and strengthen the teaching process.

Impact or Success

The innovation was piloted in 10 communities in Lagos Nigeria, with 1050 learners across different learning levels (beginners, intermediate and advanced) learning virtually during the COVID-19 pandemic using the solution.

Learning outcomes recorded were an average of 68.4% in numeracy, literacy and social habits within 4 months. However, a 78% increase in learning interest and digital skills were recorded after 3 months. One beneficiary, a 15-year-old boy from a community called Makoko, created a 'social- distancing alarm device' using knowledge from his technology module and personal research. This was facilitated by his access to the digital device and support provided by the program.

Additionally, students are able to communicate more effectively and confidently and to detect and report cases of abuse across communities. Furthermore, our innovation has created access to virtual mentorship sessions which have connected learners to industry experts and celebrities globally.

Sustainability

We are developing tailored content, affordable learning devices and a stronger Virtual Learning Management System (VLMS) adopting our proprietary content that suits African peculiarities. This will be highly sought after across the continent and will serve as a substitute for Zoom, Microsoft Teams etc. We will be providing this learning system to schools and various institutions. A virtual classroom connects from 50 to 3,000 learners presently and we plan to onboard 10,000 children across African communities in the short term and scale to a million by 2025.

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E-SOUKLOU

Web platform that enables learners to develop a guidance project, develop skills and make the most of them

Country of Implementation: Côte d'Ivoire
Organisation: YOB Technologies

Problem which the Innovation addresses

First, the mismatch between young people's training choices and the labour market arising from a lack of proper educational and vocational guidance. Second, the young people's lack of practical skills with which to fit into the labour market.

How the Innovation Functions

First, E-Souklou helps learners to generate online career guidance assessment reports to discover their professional profiles. Then, depending on their profiles and their choices, we propose to them the basic skills they should develop through short practical videos produced by our 3D device. Lastly, we open a window to users to publicize their skills to companies and individuals seeking persons with their profiles.

Impact or Success

Following a successful pilot phase under the leadership of recognised incubators (CEPICI - FJN), we deployed our solutions in three schools in northern Côte d'Ivoire where over fifteen thousand (15,000) learners availed themselves of our services. Our web platform came to compensate for the dearth of guidance counsellors in our country. During the holidays, 13,000 pupils and students received distance guidance counselling and several hundred generated online career guidance assessment reports. Such numbers would have been impossible to reach with in-person assessments. All of which demonstrate how successful our guidance counselling service is among students and their parents.

In addition, the use of the device reduced photocopying in schools by 40%. With this device, there is no longer a need for making several photocopies to present a technical object to a whole class.

Sustainability

We plan to increase our impact by expanding into new territories and reaching new customers in Côte d'Ivoire. Therefore, we are actively working to bring on board stakeholders in the education system as we implement our solution. Thus, each actor guarantees the sustainability of our services. We will maximize our impact in three ways:

1. Increase the impact on current beneficiaries = diversification.
2. Increase the number of beneficiaries in the territory = densification.
3. Increase the number of territories covered = replication.

These may be achieved without help or in partnership with other actors.

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iEduk

iEduk is a SMS learning platform allowing learners to access quality educational content (lessons summaries and quizzes)

Country of Implementation: Kenya, Côte d'Ivoire, Ghana
Organisation: Eneza Education CIV

Problem which the Innovation addresses

Eneza Education aims to reduce the insufficiency of conventional school systems. There are great barriers to access to quality education in modest environments: school fees consume nearly a quarter of the income of a poor family in sub-Saharan Africa. Thus, more than half of the out-of-school children are in sub-Saharan Africa; conventional educational infrastructure (schools, universities...) cannot handle the learners; scarcity of school documents in households in poor areas. Eneza Education, by using SMS learning platforms, helps students and parents to access education at affordable prices and everywhere.

How the Innovation Functions

iEduk is a virtual learning platform (accessible on all mobile terminals capable of receiving a SIM card, by sending Edu to 98051) allowing learners to access quality educational content and individualized feedback; directly on their cell phones (by SMS) through a subscription at 0,1 USD/day. It includes lesson summaries and exercises from the national program. Users send a keyword (iEduk or Edu) to a shortcode (98051) by SMS and access all the content and exercises.

The current service covers students from CM1 (year 5) to 3ème (year 10) for all core subjects (primary: French; mathematics; science and technology; history - geography; EDHC and secondary: French; English; mathematics; earth science and life sciences; physics - chemistry; EDHC; history - geography).

Impact or Success

Eneza Education in Côte d'Ivoire has more than 500,000 users in Côte d'Ivoire; more than 800 quizzes done on the platform; 27,839 students who prepared their exam with iEduk in the COVID-19 crisis. Today most of our clients are from rural zones (335,538), because it is the largest area where education is needed in Côte d'Ivoire. 90% of African families own or use at least one 1G or 2G cell phone at home. And accessing the platform will help them to reduce the huge cost of educational documents and reduce scarcity of school documents in households in poor areas.

As with only 0.1 USD per Day or 2 USD per month, a family can access to all the national content in every subject with no limit. And they can change the level of class if needed so 1 or more users can use one pass.

Sustainability

Eneza Education can scale and can touch a lot of people (more than 10,000,000 students and their family; by the end of this project a population of more than 50,000,000 of people could be impacted) in West Africa countries, especially in Francophone ones. As we have the same education position and our contents are quite similar, except in history-geography and science where we have a lot of differences.

Also, iEduk service can be adapted as needed to accommodate different types of content: target professional content (agriculture; project management, accounting, etc.) or specific content.

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