Mapping EdTech in Uganda

A report of the EdTech Task Team of the Education in Emergencies Working Group in Uganda, 2019.

Co-led by

AGA KHAN FOUNDATION

RESPONSE INNOVATION LAB

Save the Children

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BRITER BRIDGES

This report provides a snapshot of existing Education Technology (EdTech) projects and solutions in Uganda (and neighbouring countries) in 2019. It is the product of a targeted Task Team formed by the Education in Emergencies (EiE) Working Group, co-convened by the Response Innovation Lab and Aga Khan Foundation, in partnership with Briter Bridges for data visualization.

Main contributors:

- Charlene Cabot, Response Innovartion Lab Manager, Uganda—at Save the Children
- Lisa Hannah With, Co-Head of Research, Briter Bridges
- Rupert Corbishley, Regional Education and ECD Advisor, Aga Khan Foundation East Africa

Organizations participating in the EdTech Task Team: Humanitarian Open Street Map, Leap Learning, LGHIE, Simbi, The Walking School Bus, UNHCR, UNICEF, War Child Holland, Windle International Uganda, Xavier Project.

Photo credits: War Child Holland, Can't Wait to Learn, Uganda

EdTech: UGANDA

LEARNING | 23
Games/Apps for Learners:

ASU Arizona State University	BSOL
WAR child	Can't Wait to Learn
Checheza	Checheza
Cyber School	Digital Science and Virtual Lab
EduTab	EduTab
eLimu	Hadithi Hadithi!
	KPCE Revision and Exams
LEAP LEARNING	Leap Learning Lab
KitKit School	KitKit School by Xavier Project
	TutorSasa
	VirtualSasa

Digital Library:

BRCK	Kio Kit
LEARNING EQUALITY	Kolibri
LEAP LEARNING	Leap Learning Hotspot
MyLib	MyLib
SiMBi	Simbi
SolarSPELL	SolarSPELL
SUN BOOKS	Sun Books
	The Walking School Bus

Tech-Enabled ICT-Education:

fundi bots	Fundi Bots*
hive COLAB	Nile Explorer
Humanitarian OpenStreetMap Team	OSM in Schools
OYSTERS & PEARLS - UGANDA	Oysters and Pearls
TECHKIDS	TechKids ICT

* Solution covers several categories

PROJECT LOCATIONS

Northern Region	**20**
Eastern Region	**13**
Western Region	**29**
Central Region (w/o Kampala)	**20**
Kampala	**14**
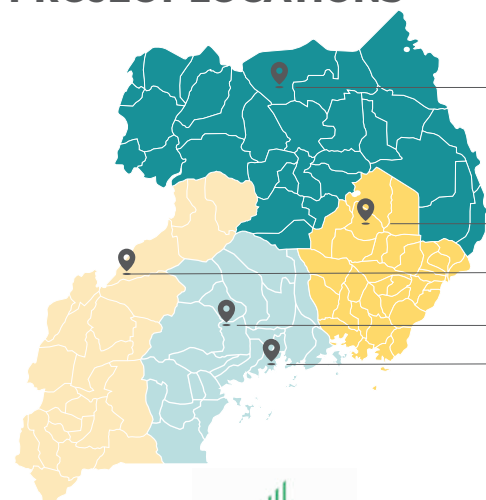
SCHOOL MANAGEMENT | 9

	Attendance-Tracking
Save the Children	ILET
	Pilot DHIS2 into EMIS
diwala	Diwala
OPPORTUNITY EduFinance	EduFinance*
kupaa	Kupaa by UNICEF, Mastercard Lab & GoU
Humanitarian OpenStreetMap Team	OSM for Education
AGA KHAN FOUNDATION	Promise3*
Schoolplus	School Plus

TEACHER DEVELOPMENT | 3

AGA KHAN FOUNDATION	Aga Khan Foundation*
KAINO	Kaino*
todidea teachers on devices	MwalimuTab

QUICK FACTS

Wider Impact:
60% of solutions have been used with refugees to date.

Hardware Used:
Feature Phone: 15%
Smartphone: 42.5%
Tablet: 25%
Computer: 17.5%

Hardware Mobility:
In schools: 22%
Out of School: 7%
Both are Possible: 71%

Type of Organisation:
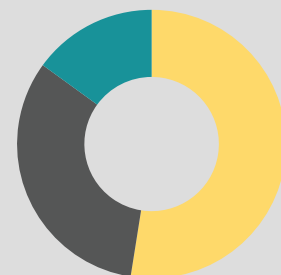
- Non-Profit (NGO/CSO)
- Private For-Profit
- Private Social Enterprise

Maturity of Solution:
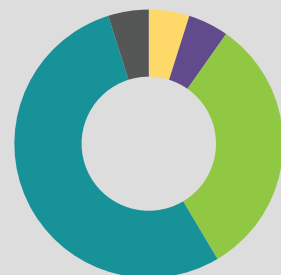
- Inception/Ideation
- Prototype
- Pilot Phase
- Scale-Up Ongoing
- Mature Solution

Main Languages:
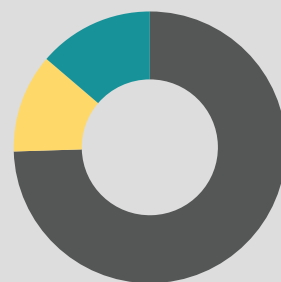
- English
- Swahili
- French

End-Users per Solution:
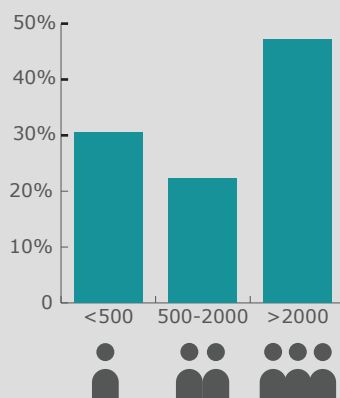
Mapping EdTech in Uganda

This report provides an overview of trends in Education Technology projects/solutions in Uganda based on a selection and review of 36 solutions.

Education Technology (EdTech) is the use of technology (any ICT product from radio to digital apps/tools) where the primary intention is to support the delivery of education programmes and improve educational outcomes. Many definitions are in use and to be considered as part of the scope of this exercise, solutions needed to align with the following three areas of focus:

- **Learning** – supporting learning in the classroom, home and community; delivering quality learning materials; literacy outcome assessments *(For example, child-facing technological tools, such as interactive tablet-based learning)*.

- **Teacher Professional Development** – supporting teacher wellbeing and professional development; helping to ensure access to quality teaching resources and materials *(For example, teacher training modules delivered via SMS or smartphone)*

- **School Management & Monitoring** – supporting the provision of safe and accessible learning spaces; reducing risk and ensuring school safety; improving coordination and tracking of performance (*For example, school management software, or innovations around digital teacher remuneration)*.

EdTech is expanding quickly through a lot of small-scale solutions by Ugandan social enterprises and NGOs across the country. As the Ministry of Education is taking steps towards the preparation of an ICT in Education Policy, a sound stakeholder mapping was deemed a useful resource. In addition, with a growing interest from the Government of Uganda to invest in an ICT-enabled economy requiring an ICT-literate workforce,

EdTech is seen as both as a way to develop digital literacy and drive overall (economic) literacy. There is also significant interest from private sector and education donors to contribute resources to the EdTech space in Uganda and steering these resources towards areas of need is critical.

To maximize efficiencies, effectiveness, collaboration, and scale of these solutions, a comprehensive mapping of the existing EdTech landscape (spanning profit and non-profit, humanitarian and development initiatives) was completed. This mapping will enable better coordination, reduce duplication or 'reinventing the wheel', highlight partnership and scaling opportunities, and promote efficiency in investment decisions in this sector. There may also be an opportunity to identify relevant and interesting EdTech solution beyond Uganda.

After data review and cleaning on 48 solutions, information has been retained for the database on 36 solutions/projects currently active in Uganda and neighboring Eastern African countries. Topline findings follow and additional information can be obtained by contacting the Response Innovation Lab in Uganda (uganda@responseinnovationlab.com).

36 solutions/projects by 29 organizations in Uganda in 2019

Principle findings

Finding 1 – Overwhelming focus on EdTech for Learning

The vast majority (75%) of the EdTech solutions are designed to support student learning outcomes (sometimes doubling with a teacher professional development module).

The 22 solutions screened in this category use three main approaches:

- **Games/apps** designed directly for interface with learners (children) – 50% of the solutions;

- **Digital libraries** (of books or other learning resources) which can either be accessed directly by learners or curated by teachers as pedagogical content for the classroom – 38% of the solutions; and

- **Tech-enabled education** on topics such as ICT, engineering, science with a hands-on component for learners; modules are usually provided by external speakers rather than through the regular classes – 18%.

Thematic areas of focus of EdTech for learning
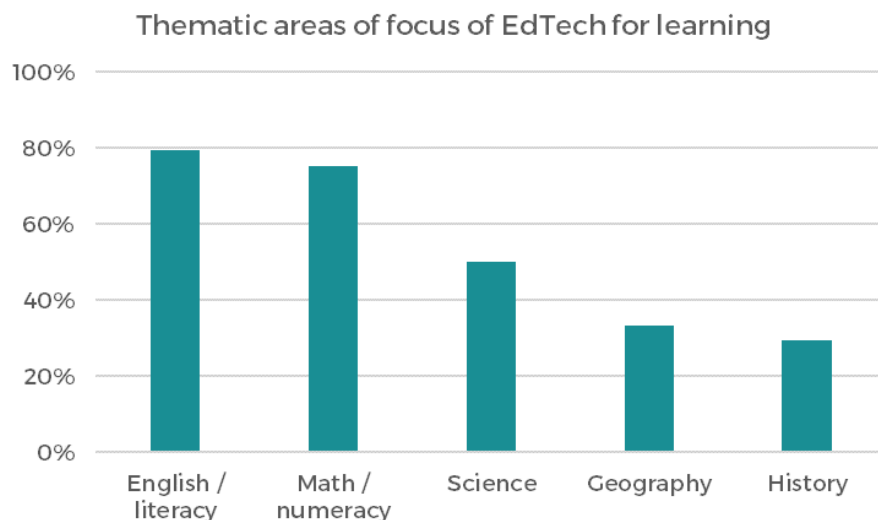
Ed-Tech Project/Solution	Pre-primary	P1 – average age 7	P2	P3	P4	P5	P6	P7	S1	S2	S3	S4	S5	S6 – average age 18
Be a Successful Online Learner													✓	✓
Can't Wait to Learn		✓	✓											
Chececza	✓	✓	✓	✓	✓	✓	✓	✓						
Digital Science and Virtual Lab									✓	✓	✓	✓		
EduFinance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EduTab (The TOD Idea Ltd)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Fundi Bots		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hadithi Hadithi!	✓	✓	✓	✓	✓	✓								
KAINO	✓	✓												
KCPE Revision and Exams							✓	✓	✓					
Kolibri		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Leap Learning	✓	✓	✓	✓	✓									
MyLib					✓	✓	✓	✓	✓					
Nile Explorer (Bus)					✓	✓	✓	✓	✓	✓	✓	✓		
OSM in Schools											✓	✓	✓	✓
Oysters and Pearls		✓	✓	✓	✓	✓	✓							
Simbi	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SolarSPELL														
Sun Books		✓		✓										
The Walking School Bus	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
TutorSasa												✓	✓	✓
VirtualSasa						✓	✓	✓	✓	✓	✓	✓	✓	✓
Xavier Project	✓	✓	✓	✓								✓	✓	✓

There is relatively good coverage across the different primary and secondary academic years. Some of the solutions are very targeted on only one or two grades, e.g., KAINO and Sun Books, and at the other end of the spectrum, more than half the solutions target at least five grades or more.

The studied solutions do not show specific trends in terms of prevalence of thematic focus areas depending on grades; literacy, numeracy, science (the three main areas) can be found across all grades.

Finding 3 – High concentration in Kampala but overall good geographic spread

A concentration in urban centres, especially Kampala is noted. Beyond this, the solutions appear to be spread relatively evenly across Uganda.

The mapping showed the refugee receiving districts with EdTech solutions are Arua, Gulu, Isingiro, Kamwenge, Kikuube, Kyegegwa, Lamwo, Moyo, Yumbe: at least one solution is present in 9 of the 11 refugee-hosting districts). This highlights areas that remain uncovered.

Number of solution reported in use by region

Kampala	Central Region (without Kampala)	Eastern Region	Northern Region	Western Region
14	20	18	20	29
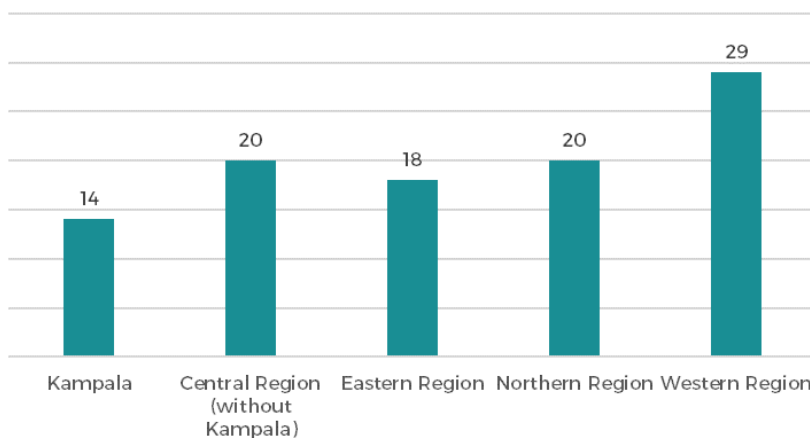
Finding 4 – Reliance on higher-end tech support

Only 15% of the solutions are available on feature phones (simple phones without internet capabilities) with smartphones the most common hardware option required to engage with the EdTech solution. Most solutions are compatible with multiple types of hardware (computers, tablets, smartphones).

Hardware Used:
Feature Phone: 15%
Smartphone: 42%
Tablet: 25%
Computer: 18%

Finding 5 – Prevalence of English

English is the only official language in Uganda but local languages are part of the primary school curriculum.

75% of the solutions across the three categories (learning, teacher professional development and school management) are predominately available in English.

For the learning-focused solutions: 75% are available in English only and 25% in English and French or English and other local languages (Swahili, Luganda).

This could act as a barrier to equitable access to digital solutions. This is particularly true if the solution is designed for younger children in the lower grades and those with low proficiency in English, a significant issue among many refugee communities.

Main Languages:

English
Swahili
French

Considering findings 3,4, 5 and the potential for technology to deepen rather than reduce inequalities, the prevalence of solutions in Kampala, in English and using costly hardware may be a risk for equity in education in Uganda.

Finding 6 – A multitude of early-stage projects

Just over 50% of the solutions are in the process of trying to achieve scale. This could represent an opportune moment for partnership to enable these solutions to achieve scale and maximise the effectiveness, efficiencies, and reach.

Recommendations

The Task Team formed for the delivery of the EdTech Mapping in Uganda had a clear, time-bound scope and the following recommendations are targeted to the Education in Emergencies Working Group.

Recommendation 1

Develop a deeper understanding of the opportunities and gaps that exist in EdTech landscape in Uganda. This can be done by doing some more cross analysis of the data collected. From here, future EdTech Task Teams can then identify specific problems to look into and solved based on this evidence.

For instance, it seems that there are significant gaps in learning solutions promoting content beyond literacy and numeracy such as learning in humanities and arts as well as in digital solutions for school management and teacher professional development. Moreover, it seems like a large number of refugee-hosting districts are covered with EdTech solutions but what does this coverage represent concretely (in or out of settlements, number of users, overlap between solutions in same settlements?).

Based on the results, Innovation Challenges for local solution providers could be launched by development/humanitarian actors to focus on main areas of need.

Recommendation 2

Given the dominance of English language in the solutions, it would be advisable to **look at EdTech solutions being developed in the countries of origin**, i.e. South Sudan and the Democratic Republic of Congo to see if there are possible transferable solutions in the local languages of the refugees that could be applicable in the Ugandan context. This approach may also have advantages in terms of alignment of materials to curriculum and integration.

Recommendation 3

Possible areas of focus that a future EdTech Task Team, if the Education in Emergencies Working Group decides to form one, could look into:

- Identify under-utilized computer labs and underlying reasons for it – note that optimizing use of existing infrastructure requires understanding their state (old operating systems, viruses, connectivity) and user practices (removal of sound system in some labs to prevent students from watching videos) & the fact that facilities are underutilized is an opportunity that can be acted upon quickly.

- Development of an engagement strategy for scaling with private sector and Government.

- Develop a precise geographical mapping and connect it to the 5W.

- Refine the collection of information on number of users reached.

- Explore further the availability of solutions and review experiences in other African countries. For instance, a guide to contextualization based on best practices of active solutions in Uganda and NGO insights into delivering EdTech projects could be developed to help solution providers understand contextualization (language and beyond, such as cultural appropriateness).

Recommendation 4

Maintaining the datasets: While the Task Team made significant progress towards developing a deep understanding of the EdTech landscape, this has to be considered as a snapshot that will quickly be out of date due to the rapid nature of EdTech development and evolution. The Task Team suggests scenarios to ensure this remains active, relevant, and up to date.

Without future investment, this report will be considered a final product and will not be updated. The database will remain with Response Innovation Lab and be accessible to users on demand.

- **Regular update scenario – Approx. USD 10,000 per annum** – the report and the visual map will be updated annually or bi-annually. Information on new EdTech solutions will be collected and the findings will be integrated into the database which will remain accessible on demand; the updated report and map will be disseminated publicly.

- **Full accessibility to regularly updated information by all users – Approx. USD 20,000 in year 1, approx. USD 10,000 per annum moving forward** – The report and the visual map will be updated annually or bi-annually. A simple website will be developed to host the database where users can easily research, access and filter information about EdTech in Uganda.

Region	
Northern Region	20
Eastern Region	13
Western Region	29
Central Region (w/o Kampala)	20
Kampala	14

Number of solutions in use / region
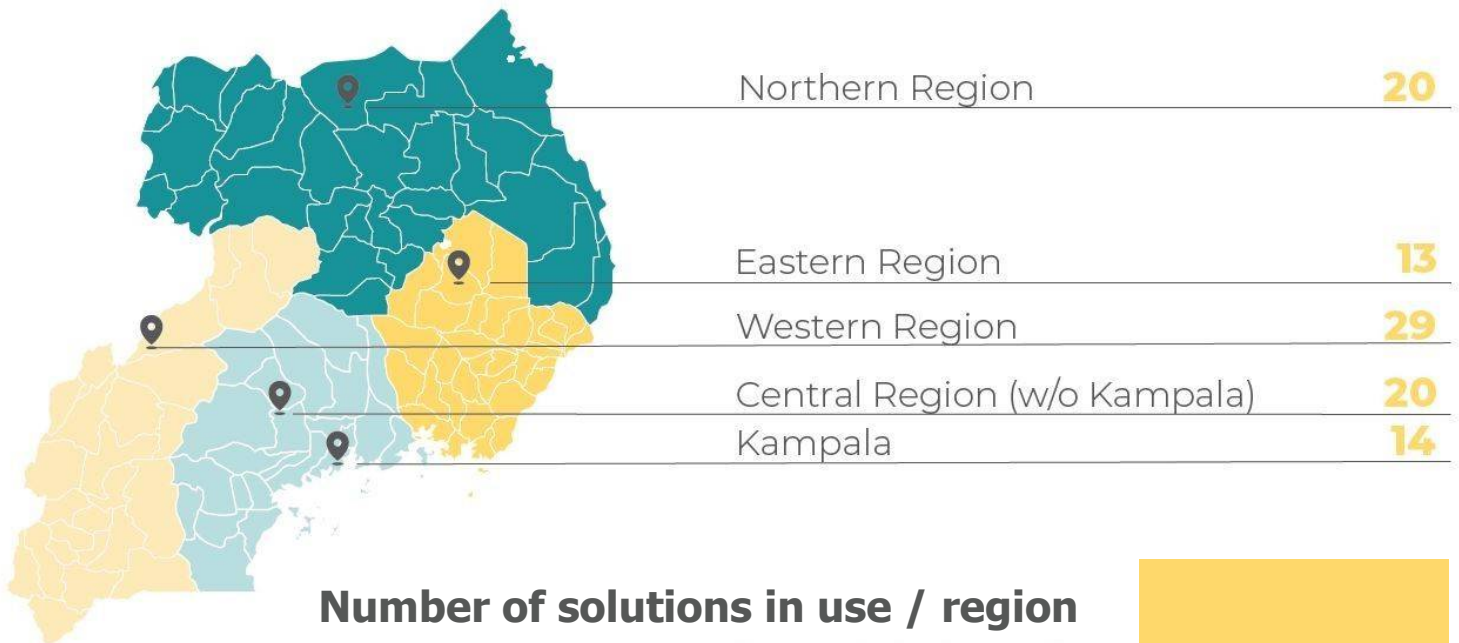
Task Team background

The EdTech Task Team was formed in January 2019 comprising: Humanitarian Open Street Map, Leap Learning, LGHIE, Simbi, The Walking School Bus, UNHCR, UNICEF, War Child Holland, Windle International Uganda, Xavier Project and co-convened by Aga Khan Foundation and the Response Innovation Lab Uganda.

Once formed, the Task Team identified the first step in the process was to develop a comprehensive database to map the current status of existing EdTech solutions and organisations with relevant EdTech expertise. This would provide resources for organisations wanting to invest time and/or funds in EdTech to be 'sign-posted' to potentially relevant solutions or organisations to reduce duplication or 'reinventing the wheel' and increase efficiencies, effectiveness, collaboration, and scale. Therefore, the Task Team undertook a comprehensive mapping of the existing EdTech landscape (spanning profit and non-profit, humanitarian and development initiatives). This process started in January 2019. The agreed final outputs of this Task Team were:

- Database with basic information on identified EdTech solutions – which can be accessed by interested users contacting the Response Innovation Lab uganda@responseinnovationlab.com)
- Map visualization basic information and data
- Short report to highlight major findings and make recommendations for next steps of future EdTech Task Teams

The EdTech task team, after finalising the scope of work, determined the information needed to collect and the modality of collection. When finalising the data to be collected (appendix I – scope of survey) the team needed to stay focused on delivering short, actionable products rather than comprehensive evaluation of all the existing initiatives. One important point that was agreed on was that the mapping would not include ICT-labs in schools unless they are part of a broader educational programme or ICT-classes that are part of the curriculum. Another one, regarding the maturity of solutions, this was judged based on self-reporting on number of users reached, number of actors using the solution, number of countries in which it is available. Please also note that a level of simplification/synthetization had to be applied for the categorization of solutions.

A simple online form was then developed and piloted within the Task Team before being finalised and shared through Task Team members' and EiE's networks. Through this, organisations with EdTech solutions and experience were able to report on this. After this four-week process the data was analysed and a partnership was established with Briter (www.briterbridges.com) to develop the visualization.

After data review and cleaning, information has been retained for the map and the in-depth analysis on 36 solutions/projects provided by 28 solutions providers currently active in Uganda and 3 in neighbouring Eastern African countries. The annex that follows covers a broader range of solutions including some that are active outside of the geographic scope.

Appendix 1 – Overview of Solutions & description

UGANDA

Diwala

http://diwala.io

School Management and Monitoring

Diwala is focused on building opportunities for youth, addressing the global issue of certification fraud. Today, displaced individuals and people in emerging markets are challenged by high costs and slow manual processes to verify the authenticity of their skills, identity and credentials.

Diwala has created a platform that enables schools and NGOs to issue skill-based identities, backed by blockchain technology. A skill-ID is a digitally verified record of a person's educational and work history. Diwala is building an ecosystem of trust, by enabling educational institutions and organisations to safely and digitally issue and verify credentials. This will, in turn, save all parties time, money and build a bridge for global work opportunities for untapped talent.

Complementing the platform, Diwala has built an app that allows students to easily receive, store and share credentials of both soft and hard skills.

DHIS2 into eMIS

By Save the Children

https://uganda.savethechildren.net

School Management and Monitoring

The Project seeks to pilot the use of Pilot District Health Information Software 2 into Education Management Information System (MoE).

EduTab (The TOD Idea Ltd)

By The TOD Idea Ltd

www.todidea.com

Learning / Games/Apps for learners

EduTab is an android Tablet PC upon which we upload educational Apps Videos and Books customised to different age groups. Nursery, Primary and Secondary. A component for special needs children.

Fundi Bots

By Fundi Robotics Limited

www.fundibots.org

Learning; Teacher Professional Development

Fundi Bots is a non-profit education initiative which promotes improved, practical science education in African schools and communities through the provision of hands-on skills and project-based training, with a strong focus on rural and underprivileged regions (and recently, a push for inclusion for girls).

Our solution of practical, hands-on training for students in everything from building robots to coding and project-based learning provides a well-rounded and engaging tool to increase students' performance in classrooms and provide career training and technical skills through custom STEM programs and curriculum. Fundi Bots uses a network of schools, CBOs, teachers, mentors, and interns to implement strategies.

KAINO by KAINOafrica

http://kaino.africa

Learning; Teacher Professional Development; School Management and Monitoring

KAINO is an inclusive and equitable teacher guide-based education platform that leverages technology to transform how teachers access and deliver curriculum aligned lessons and textbooks across Africa using the KAINOtab, web and mobile apps without a need for internet data subscription.

The system will enable government school inspectors to carry out their work more effectively by using the teacher self assessment progress manager.

Kupaa By UNICEF in partnership with Mastercard Labs

https://www.unicef.org/uganda /

School Management and Monitoring

Kupaa is a Swahili word that means to "Fly very High". It is a software platform that enables digital payments & financial management in the education ecosystem. Kupaa is a partnership between the Government of Uganda, Mastercard labs, and UNICEF Uganda, which aims to improve financial transparency and accountability at the school level; improved planning, monitoring and coordination of service delivery at local and central government levels; and enable financial inclusion in education through the design of relevant and affordable digital financial services.

MwalimuTab (The TOD Idea Ltd) **By The TOD Idea Ltd** www.todidea.com **Teacher Professional Development**	MwalimuTab is an android Tablet PC meant for digital inclusion of Ugandan teachers. We know that cost is a big impediment to acquiring these technologies so we are partnering with ECLOF (u) Ltd and at pilot level with Centenary Bank to make the MwalimuTab available on hire purchase. MwalimuTab is a revolutionary tool that's going to allow teachers to learn ICT from the interactive Apps spurning a wide range of ICT topics. Video tutorials and textbooks, practice what they've learnt from the past papers and marking schemes and also give the teachers a platform to use their newly acquired skills.
MyLib **By Softbox Limited** **Learning / Digital Library**	Softbox a Ugandan IT company has developed a comprehensive platform called MyLib- a blended learning platform that consists of a digital library of upper primary school (Primary Four to Seven) Mathematics and Science learning videos and demonstrations developed based on the Uganda Primary Schools National Curriculum. The library already hosts 678 science and 558 mathematics video lessons covering primary four to seven lessons, which is all that is needed to cover the entire syllabi for the respective subjects from P4 to P7. Learning material is loaded on a smart portable projector kit with enough memory and delivered to target communities/ schools alongside a solar powering unit.
Nile Explorer (Bus) **By Hive Colab** www.hivecolab.org **Learning / Tech-enabled ICT-Education**	The Nile Explorer is a classroom on wheels. It is a project currently being funded by the US mission in Uganda with Hive Colab as project implementors. The bus is currently traversing the country spending a week in each school (with a focus on the most rural schools), training students in STEM (robotics, basic programming, basic computer training etc), Literacy (reading, writing, debates etc), Lifeskills (talent discovery, creativity, knowing their rights, understanding their culture etc) and hands on science experiements and games
Oysters and Pearls http://www.oystersandpearls.org/ **Learning / Tech-enabled ICT-Education**	Oysters & Pearls is an ongoing educational program inclusive of the blind with emphasis on teaching science, technology, engineering and math to students in Africa, primarily Uganda. We are also working with students on other educational curriculum such as wildlife, conservation and sports. We advocate opportunities for women.
Sun Books **By World Literacy Foundation** www.worldliteracyfoundation.org and www.sunbooks.org **Learning / Digital Library**	Sun Books is an App which is pre-downloaded on a solar-powered tablet. This educational tool includes e-books and localised educational resources in English and local languages. Due its characteristics it is accessible for children in remote locations and will support access to top-quality, free learning tools. Sun Books works with local stakeholders to incorporate local culture content, stories, sounds and images into all educational activities. We complement what is already in place with a different kind of learning, making it fun and dynamic. The content is developed collaboratively with local teachers and
TechKids ICT **By The TOD Idea Ltd** www.todidea.com **Learning / Tech-enabled ICT-Education**	We teach ICT in primary schools that would otherwise not afford the cost associated with owning and running a computer lab in their premises. For only 20,000/= per child per term, we are able to come in once a week with out Tablet PCs and deliver lessons and give termly assessments that are added to the students' reports.
TutorSasa **By Maarifasasa Limited** www.maarifasasa.com **Learning / Games/Apps for**	TutorSasa is a mobile and web application that makes everyone's personal teacher, a screen-tap away, connecting every learner with their best favourite personal teacher/tutor. TutorSasa makes it easy for students to find tutors/coaches and for tutors/coaches/teachers to conveniently connect with students who need help in particular subjects and or with parents whose children need help. Through the application, students can search for tutors on-demand, make a tutoring request, and attend and pay for a tutoring session. The students are also able to rate their
VirtualSasa **By Maarifasasa Limited** www.maarifasasa.com **Learning / Games/Apps for learners**	VirtualSasa is our virtual reality solution for immersive and experiential learning. We are making expensive and exclusive school trips that are often out of reach to several African school learners a thing of the past. Virtual Reality is a technology by which computer-aided stimuli create the immersive experience of being somewhere else through special headsets. VirtualSasa enables teachers and educators to immerse their learners into experiences that blur the line between classroom knowledge and real-world experience. VirtualSasa is changing the way field-based and practical subjects are taught.

UGANDA & OTHER COUNTRIES

AKF integrated teacher development programme with Camara, e-limu, Echo Mobile **By AKF www.akdn.org** **Teacher Professional Development**	The AKF in partnership with Dubai Cares and the governments of Uganda, have delivered a four-year project to transform student learning and teacher professional development through ICT. Since 2015, AKF has worked with the district governments of Arua, Koboko, and Yumbe as well as Arua and Lodonga Core Primary Teacher Training Colleges to test and demonstrate the transformative potential of ICT to improve the learning outcomes of boys and girls. To achieve this, AKF collaborated with eLimu, Camara, and Echo Mobile and invested in teacher professional development, school leadership, community ownership, software content and technologies, and hardware for schools. Intervention areas included: - Effective, digitally enabled, and high-quality scalable solutions for teacher professional development - Access to software and hardware - Effective school leadership and management to integrate ICT into the classroom and school - Effective data management
Attendance-tracking **By Save the Children** **https://uganda.savethechildren.net**	The project supports and set-up Accelerated Education Programme (AEP) to help children that have dropped out of school to complete primary level education and transition into formal education or vocational training. The project also run physical education activities to help improve children's psychosocial wellbeing.
BSOL, By Arizona State University's Education for Humanity **https://edplus.asu.edu/what-we-do/education-humanity** **Learning / Games/Apps for learners**	ASU's Be a Successful Online Learner (BSOL) series prepares individuals for the opportunities and challenges that accompany online education. These modules provide a foundation for learners to continue their education as online learning becomes more prevalent and digital skills become more widely recognized for their value in the 21st century workplace. Each BSOL module takes five to ten hours to complete, depending on English proficiency.
Can't Wait to Learn By War Child Holland **www.warchildholland.org** **School Management and Monitoring**	It is a technology based solution for quality education especially for children affected by conflict. CWTL translates national curriculum into serious educative gaming which children can play on tablets and learn skills of math's and reading. This accompanied by support to teachers to integrate the games in their classrooms.
Checheza http://www.checheza.com/ **Learning / Games/Apps for learners**	Checheza consists of games that are fun for kids to play. At the same time, kids will learn numbers and math, English, reading and letter spelling because the games were developed by experts in education – our partners
Digital Science and Virtual Lab **By Cyber School Technology Solutions Ltd.** **cyberschooltech.co.ug** **Learning / Games/Apps for learners**	Software developed specially for Uganda / Kenya / Africa. It includes 6,00 animations / videos explaining complex concepts, 160 experiments and practicals – Virtual Lab. Saves chemicals, in colour, 2 and 3 dimensional tests and quizzes, Full curriculum coverage, local examples & local voice for teacher use or student revisions. This educational software is fully aligned with the Uganda national syllabus and it makes the difficult subjects and concepts come to life through animations and straightforward explanations which captivate the students and assist the teachers. The aspect of sight, in the development of our software, is of prime importance.
EduFinance By Opportunity Itl **https://edufinance.org/** **Learning; School Management and Monitoring**	We provide technical assistance for education quality including through: School Clusters: a peer network for schools connecting them in a cluster and through whatsapp groups ; Pathways to Excellence (P2E) has been designed by international education experts to help provide holistic school improvement, at the particular level of performance the school is at. P2E is a self-evaluation tool guiding schools in their development planning through a framework of thirty-one educational areas, including a separate supplement for Early Childhood Education. The programme connects to a free online library of international and local digital resources for schools to access, such as readings and videos, designed to challenge and support the school development planning process.

Hadithi Hadithi! **By eLimu** **www.e-limu.org** *Learning / Games/Apps for learners*	Hadithi Hadithi! is a literacy app for 6-8 year olds, with hundreds of stories, written by teachers (from Kenya), read by actors (including celebrities such as Corline Mutoko), and illustrated by artists all over East Africa. Implemented in schools, on android phones, and in Dadaab refugee camp for adults who missed out on school. Covers the entire curriculum for both English and Kiswahili in Standard 1 & 2, with stories and vocabulary matching the syllabus topics for each week of the school year. We use a scientifically-proven pedagogy to teach reading and writing, blended with the latest technology to create an experience that matches the best literacy applications around the world. Each story includes letter tracing, spelling and sentence making exercises.
ILET (Improving Learning Environment Together) **By Save the Children** **https://ilet.savethechildren.net/** **School Management and Monitoring**	Improving Learning Environment Together is a package using assessments to improve learning environments through community participation in humanitarian settings. ILET was developed to provide evidence- based, replicable break through solutions to launch a project on measuring quality learning environments in emergencies. ILET operationalises the Quality Learning Framework which describes Save the Children's best understanding of what makes a quality basic education based on five foundations that support the wellbeing and learning of children on which school level data is collected during the assessment. ILET provides a data management platform for collecting the information, analysing it, then presenting it for communities to plan effective improvements on the school level. The tool has generally been conceptualised as an innovative on line Data Management Platform to provide evidence based findings used to engage school communities to improve learning environments together.
KCPE Revision and Exams **By eLimu www.e-limu.org** *Learning / Games/Apps for learners*	Our revision app for Kenyan children in Class 7 and 8 is a multimedia wikipedia of everything you need to know to pass KCPE, fun, engaging and aligned to teh curriculum. Students can take over 100 past papers, get their results instantly, see answers, go over solutions for every question, and get directed to the topics they need to revise.
Kio Kit **By BRK Education** **https://www.brck.com/** **Learning / Digital Library**	Digital classroom in a box: The Kio Kit, a fully integrated education platform designed in Africa, that instantly turns any school room into a digital classroom. It is a simple and elegant solution made up of 40 Kio tablets, a SupaBRCK, wireless tablet charging and a hardened, water-resistant, lockable case. There is a single plug used to charge the Kit and one button to power on the entire system. Kio: rugged tablet built for Africa. Our simple and easy to use Kio tablet offers a light technology footprint with an intuitive interface designed for children and their teachers. The tablet can run multimedia content, has enough battery to manage intermittent power and is ruggedized to reduce breakage.
KitKit **By Enuma and Xavier Project** **www.xavierproject.org** *Learning / Games/Apps for learners*	Enuma is a company and kitkit is an app developed by Enuma. Kitkit school is a tablet based game used to improve learning outcomes in literacy and numeracy skills for children in the first years of schooling (5 - 8 years). It is a comprehensive early learning solution, it combines international best practices in literacy and maths education with Universal Design for Learning (UDL). It's also used for enhancing language skills as bridging programme to enable out of school children to reintegrate into formal schooling.
Kolibri, with MoE, Unicef, UNHCR, ECW and HP **By Learning Equality** **www.learningequality.org** **Learning / Digital Library**	The solution aims to improve learning outcomes of children of refugees and their host communities. The goal is to complement regular teaching methods through technology and empower teachers in pedagogy. The solution will test HP's School Cloud which creates a local cloud on-site so all types of devices can access high quality open education resources without the need for internet. The OER will be accessed through Learning Equality's e-Learning platform Kolibri which currently has content organized to the Uganda lower secondary curriculum. The solution is building on a successful pilot of Transforming Computer Labs to Learning Labs Initiative in 30 secondary schools and 12 youth-friendly ICT centers by MoES and UNICEF in 2017-2018.
Leap Learning Lab **By Leap Learning AS** **www.leaplearning.no** *Learning / Games/Apps for learners*	Leap Learning has developed a new educational method using technology to enable children, youth and adults to learn how to learn, wherever and whoever they are in the world, with emphasis on foundational skills. Leap Learning has more than 300 educational apps covering all basic levels for literacy, numeracy and entrepreneurship, and are available in several languages. The apps can be used on all devices. Only educational content is accessible and no wi-fi is required. The Leap Learning Lab with 9 dedicated stations combines technology and hands on games and enables the children to learn at their own pace and level.

Leap Learning Hotspot **By Leap Learning AS** www.leaplearning.no *Learning / Digital Library*	Technology can be the enabler for education, however the most important is the right content. Leap Learning has developed more than 300 educational apps, covering literacy, numeracy and entrepreneurship. The apps are av and only educational content is accessable and no wi-fi is required. The tablets can be used in your own learning environment at school, at home or as a Hotspot. The Leap Learning Hotspot is a rugged tablet in a metal boxed fixed to a wall in a rural setting for everyone to use for free. All the apps are preloaded on the tablet and it also comes with local wi-fi for streaming of the content to other devices. No need for electricity as it can be run on solar energy.
OSM For Education **By HOT Uganda** hotosm.org **School Management and Monitoring**	Supporting the work of EMISS in stock-taking and teacher support for digital learning, whilst collecting information on educational facilities and student exclusion potential/ service gaps and needs. ICT training for Educational staff and teachers, using OpenSource software and embedded digital devices.
PROMISE3 **By Aga Khan Foundation** www.akdn.org **School Management and Monitoring; Learning**	Developed through a global (Uganda included) HCD process, the Programme Management Information System for Education by Everyone, Everywhere (PROMISE3) is a new ground-breaking mobile app for mobile-first, offline communities to enable school-level stakeholders to better collect, analyse, and disseminate meaningful learning data at scale. PROMISE3 leverages the powerful Salesforce platform that brings the best-in-class analytics, artificial intelligence, and data security to some of the most remote schools in the world. PROMIS(E)3 provides instant, offline analysis of individual, classroom, and school-level data to enable pupils, teachers and head teachers to be data-driven and responsive to both learning success and educational setbacks. The ultimate goal for PROMISE3 is to enable all actors to realise the world's collective promise to fulfilling the goal of SDG4; particularly empowering local teachers, head teachers, parents and pupils to measure what they care about and have access to the best-in-class data technology and analytics in the world (i.e. the Salesforce platform)
School Plus **By Veritas Interactive** www.schoolplus.com **School Management and Monitoring**	• SchoolPlus Cloud. Web-based Software-As-A-Service (SAAS) solution that provides a highly intuitive interface for schools to enter information pertaining to their internal processes i.e. student registers, academic records, staff registers, library register, teacher/student attendance logs, etc. • SchoolPlus Mobile. A stripped-down version of SchoolPlus that caters to institutions in areas with limited or no connectivity. Access to SchoolPlus is facilitated by a mobile device which only allows access to the application and nothing else. • SchoolPlus Radar. Automated student and staff attendance tracking through the use of RFID cards or physical computer readable paper. Attendance lists are logged via SchoolPlus Mobile or directly into SchoolPlus Cloud. • SchoolPlus Insights. Cloud-based portal for school administrators, parents and government officials to generate and view reports on general school performance, individual student performance and overall performance (staff, students, other
Simbi **By Jugaad Ventures Inc.** https://simbi.io *Learning / Digital Library*	Through the Simbi online reading platform, students are motivated to read-out-loud by turning their voice into audiovisual books that teach our global community. Our algorithms provide teachers with meaningful literacy benchmarks and efficiently assess student performance as they read into their laptop or tablet, in class or at home. Younger students may benefit from our read-while-listening program where they gain sentence structure decoding skills and improve their reading fluency by hearing books read to them in the different accents of those who contributed their voice by reading-out-loud. Currently, we have over 11,800 students improving their literacy on our platform worldwide. However, we've recently partnered with the UNHCR to support the literacy of 90,000+ Ugandan students and are in the process of adding thousands of new

SolarSPELL by Arizona State University's Education for Humanity https://edplus.asu.edu/what-we-do/education-humanity **Learning / Digital Library**	ASU's SolarSPELL is a portable solar-powered digital library designed for resource-constrained locations. The SolarSPELL digital library provides locally-relevant open-access educational resources, served up over an offline WiFi hotspot–to which any WiFi-enabled device can connect. It mimics an online experience to build information literacy and technology skills in a safe, offline environment. Recently ASU's Education for Humanity piloted an Agribusiness course on the device inside a refugee settlement in Uganda.
The Walking School Bus thewalkingschoolbus.com **Learning / Digital Library**	TWSB engages a curriculum program with two primary objectives: Literacy enhancement and curriculum supplementation. (1) Literacy goals are achieved through engagement of Simbi (see above entry); (2) The curriculum supplementation program involves making accessible nearly 60GB of educational content to rural communities without requiring access to the internet. We make available content from Wikipedia, TED, Khan Academy, thousands of books, and more. We work with local teachers to match the massive library of educational content with their learning outcomes planned for the year, as regulated by the National curriculum in their respective countries

EASTERN AFRICA (but not Uganda)

eKitabu https://www.ekitabu.com/ **Learning / Digital Library**	eKitabu will launch Studio KSL as a resource to help the Deaf community and local content creators integrate sign language videos into early grade readers, producing visual storybooks for primary literacy in support of Kenya's new Inclusive Education policy. Investing to set up Studio KSL and streamline production with Deaf actors will lower the cost of producing quality visual storybooks and help to document regional differences in Kenyan Sign Language.
OSM in Schools By Humanitarian OpenStreetMap Team hotosm.org **Learning / Tech-enabled ICT-Education**	Training ICT in schools for secondary Social Science projects, involving the design and exploration of environmental surroundings, safe areas, and curriculum-specific applications of Geography and ICT programs
Sema by Kukua https://kukua.me/ **Learning / Games/Apps for learners**	At Kukua we leverage the intersection of technology and entertainment to advance the learning of millions of children, starting with literacy and Africa. Kukua is using Sema's character to build a suite of educational tools starting with game-based apps for smartphones that teach children reading, writing and maths. Sema's "learning universe" will eventually expand its digital content into a TV show, books, videos, consumer products and experiential. The founder's vision is for Kukua to become "the Disney of learning" and to empower hundreds of millions of children to learn through magical experiences.
Shupavu291 **By Eneza Education** https://enezaeducation.com/ **Learning / Digital Library**	Shupavu291 came about due to a lack of quality engaging revision material for students in rural areas where textbooks are expensive and non-interactive. Shupavu291 provides revision content to primary and secondary students via SMS/USSD. Learners are able to access lacalized curriculum lessons, assessments, revision papers, chat with a live teacher and access offline wikipedia. In addition, there is also teacher refresher courses and financial literacy courses for adult learners. Eneza's focus is to increase the academic performance of learners in Primary and Secondary school.
Teach-mobile by Eneza Education https://enezaeducation.com/ **Enhance or support teacher professional development**	Teach mobile allows users to access continuous professional development courses, access teaching, and learning materials, access national curriculums and build lesson plans within minutes.

Appendix 2 – Scope of work of the Task Team

Criteria for integration of projects/solutions (hard and software) in the mapping:

- Geographic scope: Uganda (and East Africa but without proactive scoping beyond Uganda)

- Time: Ongoing & completed projects as well as pilots which will start in 2019 and for which the parameters are already clearly known

- An entry will be added to the mapping if it fits one of the following conditions:

  - It is a *specific software solution*. The entry of a solution should include a reference to the organisation who developed it (owner) as well as the actors/users currently implementing the solution. Therefore, the database will enable to search both owner of solution and/or user of solution. For example:

    - Can't Wait to Learn, by War Child Holland, implemented in the case of the Education Consortium

    - Kolibri, by Learning Equality, used by UNICEF and UNHCR

    - KitKit, by Enuma, used by Xavier Project

  - It is a *Hardware solution* with the principle objective to improve educational outcomes.

    - For example, HP School Cloud

  - It is an *organization with significant experience in delivering projects using technology for educational purposes*

    - Examples:

    - Women In Tech in Uganda (WITU)

    - Humanitarian OpenStreetMap Team (HOT)

    - Aga Khan Foundation (AKF)

- The focus of this mapping will be on Ed-Tech that supports Basic Education, from pre-primary until graduation from secondary school.

- Ed-Tech in tertiary education will ONLY be captured if it is supporting teacher professional development (both pre- and in-service)

- Ed-Tech that supports informal learning out of school will also be captured in this mapping. Some solutions may support learning both in and out of school

- What will not be added to the mapping

- Computer labs in schools

- Distribution of hardware

- ICT classes as stipulated under the curriculum

- Classes on technology

Information collected on each project/solution:

- Title of solution
- Owner of solution – Name and Type; 1st Sector (private for profit), 2nd Sector (public), 3rd Sector (not-for profit), or 4th Sector (social enterprise)
- Contact details including website, email, and telephone (point person identified if possible)
- Category (multiple choice possible)
    - Support the delivery of education programmes or specific interventions
    - Enhance and/or support children's learning
    - Enhance or support teacher professional development
    - Enhance or support improved pedagogical practice
    - Enhance or support data management and use by teachers, schools, or the education system (this is not inclusive of organisational ICT enabled M&E systems, but Ed-Tech solutions with the primary focus being data management and should be publicly available)
- Principal audience, for example, learners, teachers, project managers, etc.
- Is the solution being used with refugees?
- Short description of solution
- Date solution started to be implemented in Uganda (can be in the future)
- Maturity of solution (inception, prototype, pilot phase, scale-up phase, adopted)
- Current users of solution (NGOs, schools, etc)
- Geographical scope (to district level)
- Grades covered
- Subject area, for example, literacy, numeracy, science, etc.
- In or out of school learners (or both)
- Languages available
- Online or offline solution
- Software and/or hardware
- Compatibility needs, for example hardware, user needs (phone, tablet, computer), etc.
- Comments section