



2020 EDTECH ECOSYSTEM:

GHANA AND COTE D'IVOIRE



FOREWORD

With the objective of creating dignifying opportunities for young people, the Jacobs Foundation has partnered with TRECC to support systemic change in the education systems in West Africa.

TRECC's mission is to improve the lives of children and youth in Côte d'Ivoire by supporting the government in its strategic objective of developing human capital in the country. In order to achieve this ambitious goal, TRECC has been working hand in hand with the government, while leveraging the contribution of traditional actors in the education space as well as new actors such as researchers, the private sector and social entrepreneurs.

Driven by its desire to sustainably increase access to quality educational goods and services in low resource areas, TRECC has been nurturing the talent of young entrepreneurs and facilitating the growth of education start-ups in Côte d'Ivoire through its Impact Finance program since 2017.

A first landscaping exercise was commissioned in 2018, focused on Côte d'Ivoire only. Given the interest it generated and TRECC's growth ambitions, it was only natural to revisit it, by not only looking at the progress achieved in the ecosystem but also at what is happening next door, in Ghana, to learn from a different context and assess how the impact can be expanded.

For this report, we partnered with the Pan-African firm Chrysalis Advisors Africa, for them to give us the pulse of the education start-up ecosystems in Ghana and Côte d'Ivoire: two different countries, with different challenges but a single goal of creating a better future for its children.

We are proud to share the result of this work with fellow investors and ecosystem builders who have an interest in the West African education space. This report unveils the challenges faced by those committed to fulfilling the promise of education as a key element for the development of their country, while also highlighting the investment opportunities that exist.

We hope you will enjoy reading this report as much as we did and that it will serve as a guide the help like-minded institutions better support African education technology start-ups.



Lise Birikundavyi
Impact Finance Investment Manager
TRECC

FOREWORD

The Chrysalis Advisors is pleased to present the Ghana and Cote D'Ivoire EdTech ecosystem report produced with TRECC and the Jacobs Foundation. We are a financial advisory services firm that supports early-stage emerging market companies as they scale from idea to multi-million-dollar entities.

One of our focus areas has been education and how our African grown startups can solve for the access, quality, and relevance gaps on the Continent. While technology is the great equalizer, we've learned that we simply can't drop solutions that worked in other markets, especially developed ones, and expect them to work here. From infrastructure to public sector support to affordability, we must tailor the solutions for our populace. This is even more critical in Francophone Africa that is often left behind when talking about technology startups. So how do we ensure that we achieve the desired learning outcomes? How do we even measure them? What lessons can we give founders, investors, advisors, and other stakeholders to shorten the learning curve and increase likelihood of success? How do we even measure success?

Equally important, how do we allocate resources for education whether sourced from private or public means?

To begin tackling these questions, the ecosystem needs data. With this research report, we are presenting the data we gathered in Ghana and CIV as a starting guide for the ecosystem stakeholders who want to effectively and efficiently tackle these challenges.

We are proud to support TRECC and the Jacobs Foundation's desire to transform the way we view education and specifically how to fund it and challenge investors' perception that a growing clientele alone for EdTech solutions is equal to strong educational value.

Additionally, the team wishes to thank TRECC and the Jacobs Foundation for trusting us and giving us the opportunity to carry out the country mapping in these two countries.



Nichole Yembra
Managing Director
Chrysalis Advisors Africa Ltd

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GLOSSARY

ABBREVIATIONS	
BECE	Basic Education Certificate Examination
DfID	UK government's Department for International Development
DSPS	Directorate of Strategies, Planning and Statistics
EGMA	Early Grade Mathematics Assessment
ESA	Education Sector Analysis
GES	Ghana Education Service
GoG	Government of Ghana
GPEG	Global Education Partnership Grant
ICT4AD	ICT for Accelerated Development
JHS	Junior High School
KG	Kindergarten
LMD	License-Master-Doctorate system.
MoC	Ministry of Communication
MoE	Ministry of Education
NEA	National Education Assessment
PTR	Pupil-Teacher Ratio
SSA	Sub Saharan Africa
SHS	Senior High School
TCAI	Teacher Community Assistant Initiative
WASSCE	West African Senior School Certificate Examination

EXECUTIVE SUMMARY

COUNTRY OVERVIEW - GHANA

31M

People in population

2.2%

Population increase rate per year

0.4%

of the total world population

Poverty and inequality are high in the rural northwest parts of the country. These areas also have the most educationally deprived districts



47th

most populous country globally

0.596

Human Development Index (HDI) value of Ghana,

16

administrative regions, divided into 216 districts.

CURRENT STATE OF THE EDTECH ECOSYSTEM

EDTECH SUPPLY AND BUSINESS MODEL

There are very little to no capital for local EdTech startups. Majority of the startups either bootstrap or work on consultancy projects to fund their EdTech activities.

There isn't a simple and clear way for users to select EdTech products. Unlike other sectors where there are easy points of collaboration, EdTech products need to acquire users on their own by leading the marketing and market education process themselves. Marketing costs are expensive, and it is very erratic in nature. B2B marketing is somewhat easier to do since the groups are more organized but the decision-making process is long and tedious.

ECOSYSTEM SUPPORT AND PARTNERSHIPS

Although there is great opportunity for public private partnerships, there are not enough opportunities for local EdTech providers to participate in this. Most of the work is housed with donor agencies who have their preferred EdTech solutions that are not Ghanaian. Mobile operators also roll out their own education initiatives and do not include EdTech players; this pushes most EdTech solutions to stealth mode or death without ever being discovered because of the lack in partnerships.

There are local EdTech visionaries like the founders of eCampus and Revo Education that have a bold and common goal of democratizing EdTech solutions.

ENABLING INFRASTRUCTURE

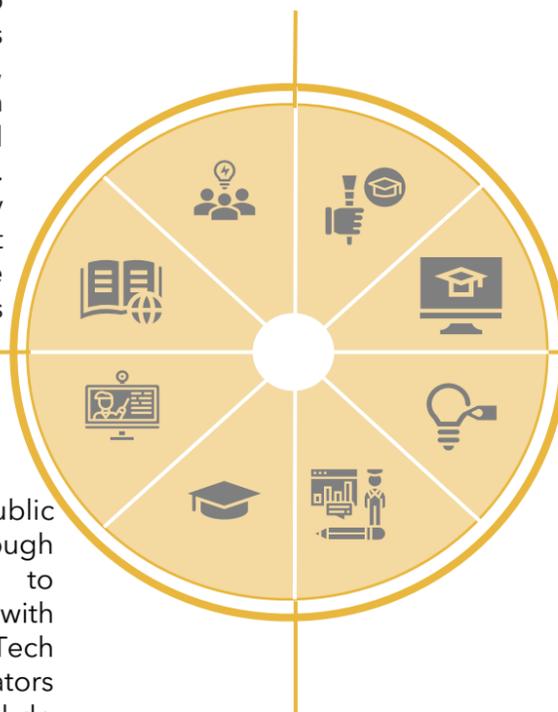
Mobile phone penetration rate in Ghana is at a 100% according to the MoC. There is no universal access to the internet. Although internet coverage is growing and mobile operators are putting in structures to reduce the cost of data and mobile phones, the internet penetration rate is below 50% and there is a high level of digital illiteracy thus first-time internet users are not able to take advantage of the internet.

Additionally, schools lack the requisite resources they need. Less than 40% of schools in Ghana have access to the internet or computers to access EdTech solutions.

EDUCATION POLICY AND STRATEGY

The government rolled out an Education Strategic Plan that adequately spells the need to EdTech infrastructure in schools in order to drive learning in the country. As part of the strategic direction of education laid out in the policy, basic literacy skills of teachers and students has been sighted as one of the ways to drive up the adoption of EdTech tools in the country.

Compared to other tech, EdTech purchases is limited. Most often than not, the government opts for foreign EdTech solutions rather than local solutions. There is very little patronage of local EdTech tools.



EXECUTIVE SUMMARY

GHANAIAN EDUCATION SYSTEM GAPS



QUALITY

- Although a child who starts school at age 5 can expect to complete 11.6 years of school by his/her 18th birthday, factoring in what children learn and holidays, expected years of schools is only 5.7 years. This is due to the low quality of basic education as measured through standardized student assessments.
- There are also important disparities at sub-regional levels and in terms of rural/urban areas. Pupils in rural areas score substantially lower on the National Education Assessment (NEA) and Early Grade Reading Assessment (EGRA) than those in urban areas: the percent of pupils scoring non-zero scores in EGRA in English was just 19.6 percent in rural areas compared to 39.5 percent in urban areas.
- Textbook-pupil ratios are far below established norms (one workbook per child in KG and three per child at Primary and Junior High School) with only 0.2 workbooks per child provided at the KG level, 1.4 at Primary, and 1.5 at JHS in 2016/2017.



RELEVANCE

- The curriculum content is overloaded and lacks attention to important skills such as critical thinking, collaboration, communication, and digital literacy and there is very little instructional leadership provided for teachers to deliver the curriculum. The outdated curriculum and assessment methods for teacher education have not encouraged the development of effective teaching skills. Skills like classroom management and teaching strategies geared to the level of the learner are not emphasized. Basic education teachers are not trained to address the varying needs of learners at different levels, especially students with special needs and many teachers struggle to teach English and Mathematics.



ACCESS

- Data from the seventh round of the Ghana Living Standards Survey (GLSS7) indicate that in 2016/17, the JHS net enrollment rate (NER) for those from the highest income quintile is more than three times higher than that of the lowest quintile (51.9 percent compared to 16.4 percent), and at the secondary level, this difference is approximately eight times higher (40.3 percent compared to 5.5 percent). Parity indices for completion rates between those from the poorest and wealthiest income quintiles using the Ghana Demographic and Health Survey (DHS) 2014 data was 0.48 for primary, 0.37 for JHS, and 0.21 for SHS, indicating that those from low-income backgrounds were less likely to continue their education.

EXECUTIVE SUMMARY

EDUTECH STARTUPS IN GHANA

Learning Management Systems



A-Plus E-Learning

Classroom Engagement



Test Prep



School Management



GHANA

23

EDTECH STARTUPS

Early Childhood Education



Study Tools & Course Material



PEEP LEARN
Teach Right, Learn Easy



Young at HEARTS

EXECUTIVE SUMMARY

COUNTRY OVERVIEW - CIV

Half of the Ivorian workforce are employed in agriculture and the majority are from rural areas. About 60% of families headed by an agricultural employee are poor. Women account for 40% of agricultural workers and more than half of all the workers are unschooled.

28M

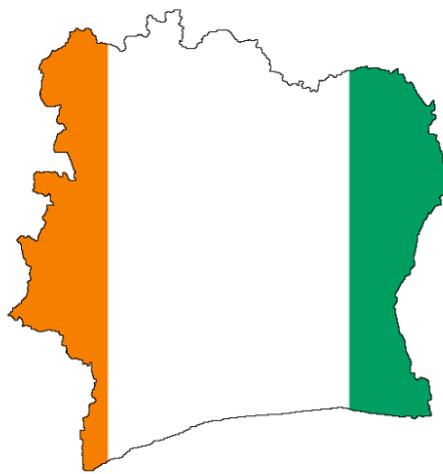
People in population

46.3%

of Ivoirians were living below the national poverty line

170th

among 189 countries on the United Nations Development Programme's (UNDP) Human Development Index



2.26%

Population growth

47.2%

Of the population are literate

7.68

Average years of schooling

CURRENT STATE OF THE EDTECH ECOSYSTEM

EDTECH SUPPLY AND BUSINESS MODEL

EdTech startups struggle to get funding within the Ivorian ecosystem. Most of them operate with their personal funds or with small grants not sufficient to run and grow their activities. Additionally, it is expensive to maintain a team to run an EdTech solution. The major cost is software engineers. With organizations like Andela coming in, the cost of developers has spiked up as they want to be paid more. Most EdTech startups rely on contract developers or consultants who work on a case-by-case basis.

ECOSYSTEM SUPPORT AND PARTNERSHIPS

Startups, especially revenue making startups, can enter partnerships with institutions such as Mobile Network Operators (MNO) which allows them to easily market their product or access 3rd party APIs they need for their product. However, the relationships are not always mutually beneficial as the MNO can take up to 45% of revenue generated by the start up through their platform.

Investors like Comoé Capital and Jacobs foundation support EdTech development in Cote d'Ivoire.

ENABLING INFRASTRUCTURE

Mobile penetration rate is high in Côte d'Ivoire (143%). With a relatively good network coverage, people can easily use basic phone features such as SMS and USSD and this is a great advantage for startups who use those channels to offer their services.

Internet penetration rate is low (22%). Additionally, mobile data and optical fiber cost are expensive.

Most of the school networking infrastructures are donations mostly from organizations such as the MTN Foundation or the Orange Foundation. These infrastructure is not widespread, not always functional, and located in schools in big cities such as Abidjan and Korhogo.

EDUCATION POLICY AND STRATEGY

While the CIV government has not set a clear strategy for EdTech, the Government of Côte d'Ivoire has made digitization of education a top priority. The creation of a Virtual University, the distribution of digital health cards and vaccination records, as well as the creation of the Digital Youth Foundation to fight youth unemployment, are examples of major new ICT initiatives



EXECUTIVE SUMMARY

EDUCATION SYSTEM GAPS IN CIV



QUALITY AND RELEVANCE

- Data on efficiency, quality, and relevance are fragmented or lacking, but the data that does exist paints a dismal picture. Because the academic year is still truncated for many faculties, many three-year undergraduate programs take five to six years.
- While finding academically qualified faculty does not appear to be a problem—97 percent of lecturers in public universities and 77 percent in private universities have a PhD or master's degree—program content and pedagogical practices need to be modernized. Traditional lectures and rote memorization still tend to be the norm. This leaves little room for developing inquisitive minds, critical thinking, and the analytical competencies needed in today's global economy.



ACCESS AND EQUITY

- The rural communities are left behind as out of school children are mostly concentrated among the lower income population in rural areas in the North and South West regions.
- Almost 22% of pupils did not complete the primary level in 2017/18, while 45% did not complete lower secondary education and 70% did not complete upper secondary (DSPS, 2018).
- Between 2005 and 2016 the number of enrollments per 100,000 inhabitants dropped from 808 to 774, pushing down the gross tertiary enrollment rate from 9.3 to 8.3%.



GOVERNANCE AND FINANCING

- Public institutions have little institutional autonomy, performance-based management instruments and processes are lacking, and there are no follow-up mechanisms to monitor how well graduates are integrating into the labor market. Public universities have no control over the number of students they must enroll, the tuition fees they may set, or the use of self-generated income. As for modern management practices, the first performance-based contracts (PBCs), signed a few years ago, could not be honored because the Ministry of Higher Education and Scientific Research (the Ministry or MESRS) was unable to commit the additional resources PBCs call for.

EXECUTIVE SUMMARY

EDTECH STARTUPS IN CIV

Learning Management Systems



Language Learning



COTE D'IVOIRE

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EDTECH STARTUPS

Career Development



Study Tools, Test Prep & Course Materials



EXECUTIVE SUMMARY

STARTUP CHALLENGES



Limited Capital Supply
Across the Risk-Return
Spectrum



No proper market data
backing product
development.



High operational costs
act as a barrier to
growth.



Low willingness and/or lack of
ability to pay for EdTech products
and services is a major challenge
for the all the EdTech firms.



Limited availability of
capacity building
services

INVESTOR CHALLENGES



Difficulty exiting
investments



Lack of innovative
products/poor product
development



Poor linkages between
EdTech start-ups,
investors and
innovation networks.



Lack of proven EdTech
business models that can be
socially impactful, scale, and
be profitable.

EXECUTIVE SUMMARY

RECOMMENDATION FOR THE EDTECH ECOSYSTEM

Government stakeholders

- Establish, communicate, and sustain a vision for transformative, equitable EdTech use.
- Build and maintain infrastructure.
- Support local innovation through early-stage risk capital.

EdTech Innovators

- Raise awareness around EdTech benefits.
- Build the capacity among stakeholders.
- Focus on research and communications.

Impact Investors, Foundations, VC Firms

- Support the growth of innovators, coalitions, and advocacy organizations.
- Product research, evaluation, and communication.
- Support EdTech business models that reach the most marginalized with both capital and counsel.

The Community

- Create Objective Evidence and Platforms for Selection of EdTech products.
- Sustain Change with Human Capacity and Long-Term Policy.
- Enable Business Models.



EDUCATION

INTRODUCTION

INTRODUCTION

Technology can be a powerful tool for transforming learning. It can help affirm and advance relationships between educators and students, reinvent approaches to learning and collaboration, shrink long-standing equity and accessibility gaps, and adapt learning experiences to meet the needs of all learners. Schools, community colleges, adult learning centers and universities should be incubators of exploration and invention. Educators should be collaborators in learning, seeking new knowledge and constantly acquiring new skills alongside their students. Education leaders should set a vision for creating learning experiences that provide the right tools and supports for all learners to thrive. However, to realize fully the benefits of technology in the education system and provide authentic learning experiences, educators need to use technology effectively in their practice. Furthermore, education stakeholders should commit to working together to use technology to improve education. These stakeholders include leaders; teachers, faculty, and other educators; researchers; policymakers; funders; technology developers; community members and organizations; and learners and their families.

We define EdTech:

“Educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using and managing appropriate technological processes and resources.” (Januszewski et al., 2008)“

Technology of itself doesn't enhance learning. It depends how the technology is designed and implemented; how teachers are supported to use it; how outcomes are measured; what communities are in place to support it. Before adopting and adapting EdTech interventions, policymakers and educational stakeholders need to be informed about what kind of EdTech interventions have displayed the most promise for different outcomes, populations, and sets of circumstances

The kind of EdTech intervention that could be deployed in developing countries maybe different due to issues related to access to technology and public infrastructure. As a response to all these factors, EdTech interventions that have so far been experimentally studied differed too greatly across developed and developing country education systems to allow for integrating findings from both in a way that would yield meaningful policy implications.” In summary, the actual effectiveness and focus of successful EdTech interventions in developed countries may translate to very different results in developing countries, calling for an urgent need to understand the impact of EdTech within different local contexts of developing countries.

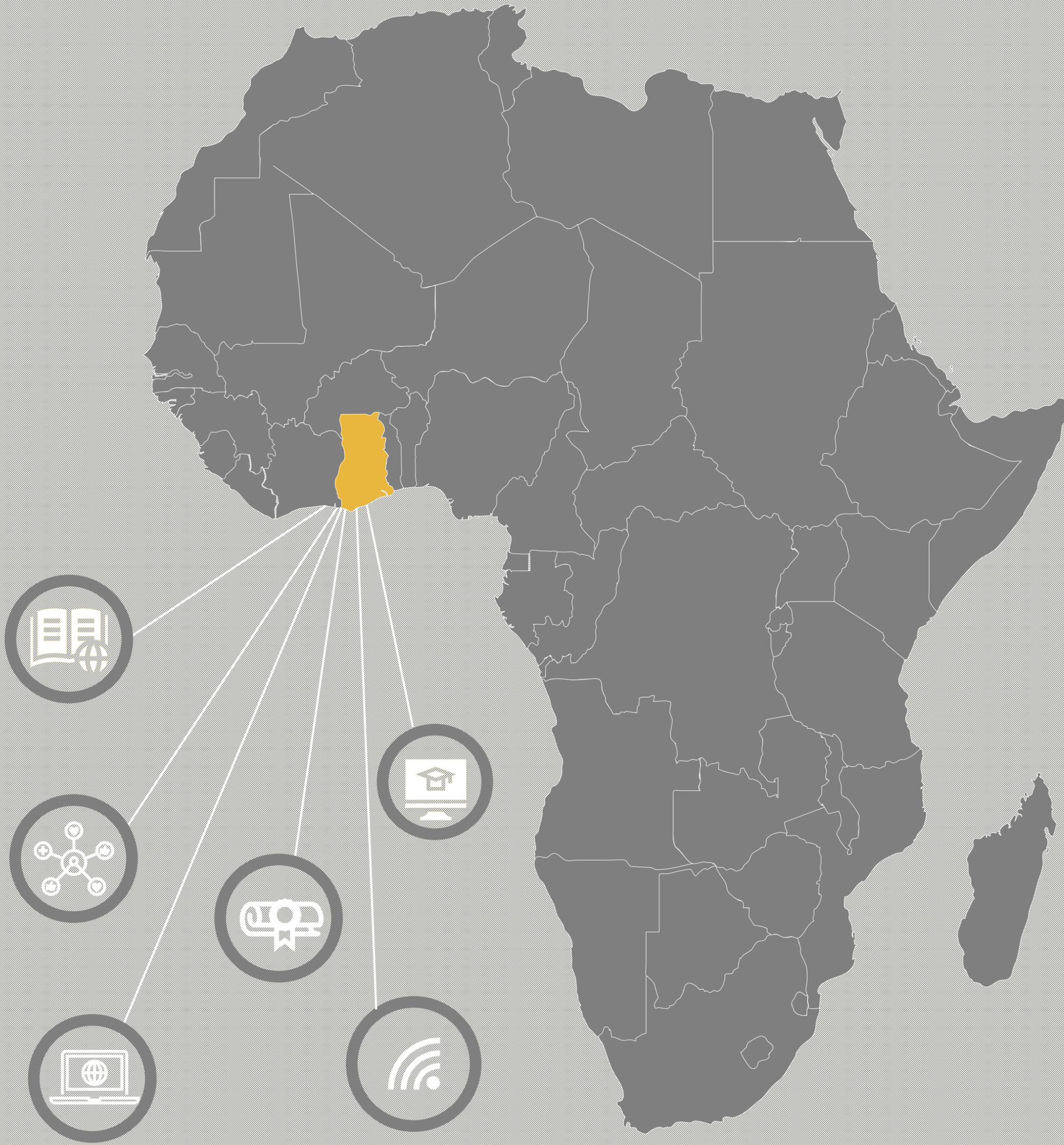
The question of the effectiveness and appropriateness of EdTech as a tool to address the issues in developing countries like Ghana and CIV is still an open one. While the relatively low levels of access to needed inputs such as electricity, the internet, and hardware might be challenges that hinder EdTech's promise in these countries, EdTech may also be particularly well-suited to address some of the most critical educational questions in these contexts. Once these technological barriers are overcome, EdTech could be leveraged to address problems that would be too costly or resource-intensive to solve through other channels.

INTRODUCTION

For instance, EdTech could be adopted to address issues of appropriately-leveled education to deliver instruction and practice problems tailored at each student's specific level. Such a challenge would be almost insurmountable with the current incentives and levels of educational resources, in contexts with already extremely high pupil-teacher ratios. EdTech could also be used to address issues of stakeholder accountability by intensifying the frequency of touch points between teachers and school inspectors.

Furthermore, EdTech could be used to address some of the input shortages that many schools face. Simple handheld devices could be used to replace lacking inputs such as computers, textbooks, notebooks, teacher records, and teaching guides, as a single device could perform these functions by holding many documents at once. However, the cost-effectiveness and affordability of all these interventions has not been systematically reviewed, and hence remain an open empirical question.

GHANA



COUNTRY OVERVIEW

INTRODUCTION

Ghana is heralded as the pearl of West Africa in terms of economic growth. She is home to approximately 31 million people, increasing at a rate of 2.2% per year. Ghana's population is equivalent to 0.4% of the total world population and is the 47th most populous country globally. Ghana spans 238,535 km² and has an Atlantic coastline that stretches 560 kilometers (350 miles) on the Gulf of Guinea in the Atlantic Ocean to its south. There are 16 administrative regions in the country, divided further into 216 districts. The Ashanti, Eastern, and Greater Accra regions are home to 50% of the population, while the Upper East and West regions are among the least populous (Ministry of Education, Ghana, 2018).

As a result of rapid economic growth over the last ten years, Ghana has recently transitioned from low-income to lower-middle-income country status. The country has made substantial progress in reducing poverty, but this has slowed in recent years (World Bank, 2019). Poverty and inequality are high in the rural northwest parts of the country. These areas also have the most educationally deprived districts (Ministry of Education, Ghana, 2018).

Ghana's Human Development Index (HDI), as a composite index of quality-of-life indicators such as health, education, and standard of living, value for 2018 was 0.596– which put the country in the medium human development category– positioning it at 142 out of 189 countries and territories. Between 1990 and 2018, Ghana's HDI value increased from 0.454 to 0.596, increasing by 31.1 percent.

31M

Population

0.596

HDI

\$66.98B

GDP

56.80%

Of population
between 0 - 24 years

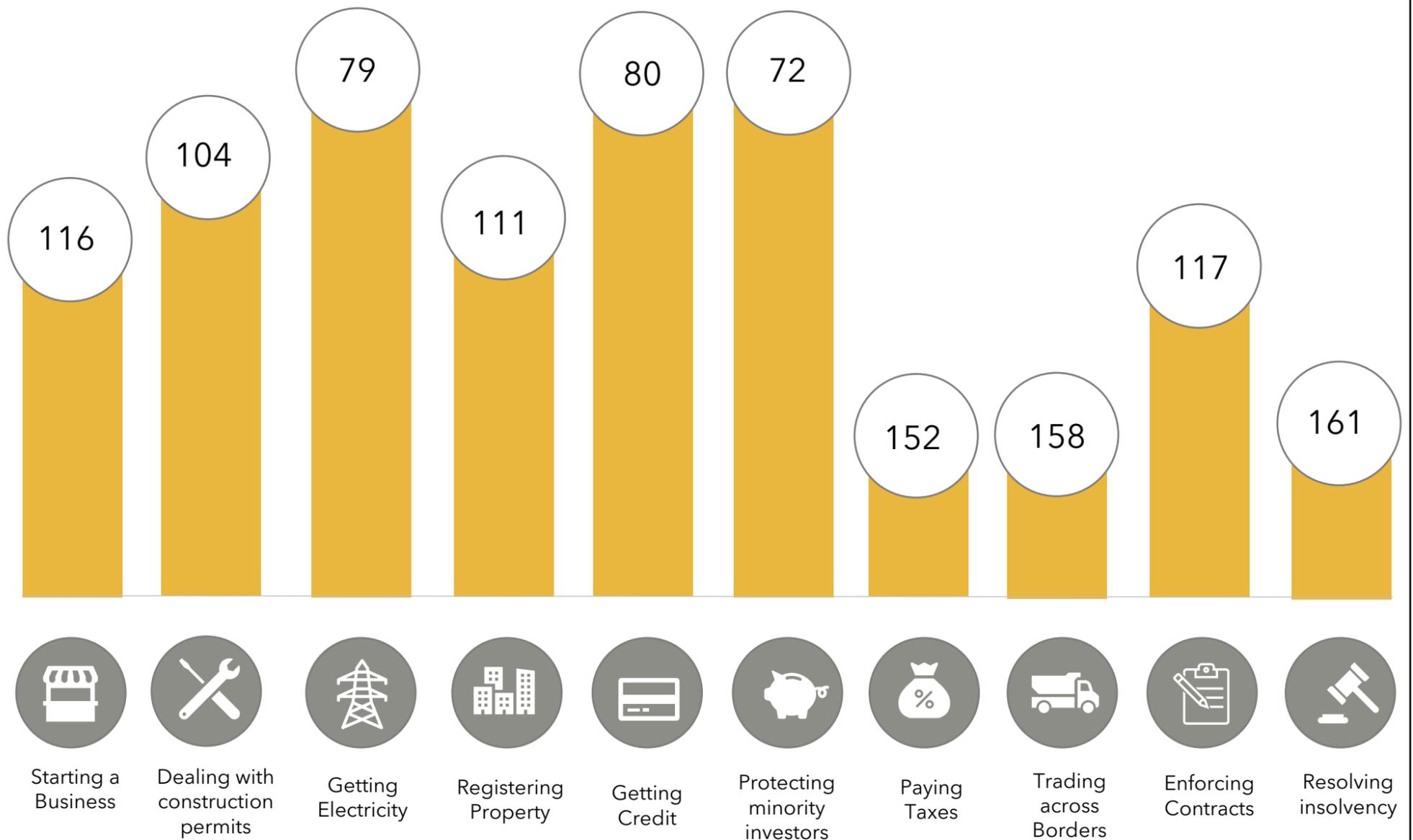
ECONOMY

The Gross Domestic Product (GDP) in Ghana was worth \$66.98 billion in 2019 (World Bank). This represents 0.06 percent of the world economy. Ghana is the largest producer of gold in Africa and the 7th largest in the world producing over 158 metric tons of gold in 2018. She is also the 9th largest producer of diamonds and 2nd largest producer of cocoa in the world. Therefore, it is arguable why the continent (Africa) is a leader when it comes to increased economic strength. Ghana is now looking to boost technological innovations and get more young people involved in sustaining and improving its economic performance.

Ghana has always been an epitome of technological growth in Africa, with Accra as the focus. Accra serves as the home to many tech firms and startups. It hosts companies such as mPedigree, who validate pharmaceuticals' provenance, Rancard co-owned by Intel, who provide information services over SMS to telecommunication companies in the region. There is also Busy Internet, an early player in the local ISP scene, Impact Hub Ghana, an incubator for tech startups, and Meltwater Entrepreneurial School of Technology (MEST), which offers end-to-end IT training, mentorship and funding to software startups. And of course, many government and private firms using technology one way or the other to run their business.

COUNTRY OVERVIEW

Global Rankings on Doing Business topics - Ghana





Ghana

Population (July 2020)

29,340,248

Age structure

0-14 years: 37.44%
15-24 years: 18.64%
25-54 years: 34.27%
55-64 years: 5.21%
65 years and over: 4.44% (2020 est.)

Dependency Ratio

total dependency ratio: 67.4
youth dependency ratio: 62.2
elderly dependency ratio: 5.3
potential support ratio: 17.1 (2020 est.)

Median age

total: 21.4 years
male: 21 years
female: 21.9 years (2020 est.)

Population growth rate

2.15%

Urbanization

urban population: 57.3% of total population (2020)
rate of urbanization: 3.34% annual rate of change (2015-20 est.)

Literacy (age 15 and over can read and write)

total population: 76.6%
male: 82%
female: 71.4% (2015)

School life expectancy

Total: 12 years
male: 12 years
female: 11 years (2017)

EDUCATION SYSTEM

The Ministry of Education (MOE) is responsible for Ghana's education system and education policy. The Ghana Education Service (GES) is the implementing agency under the MOE mandated to implement interventions at the pre-tertiary level of education. Ghana's pre-tertiary education system is based on a 2-6-3-3 system: basic education includes two years of Kindergarten (KG), six years of Primary and three years of Junior High School (JHS). Secondary education consists of three years of second cycle education which includes Senior High School (SHS) or technical/vocational education. SHS programs include business, agriculture, visual arts, technical, general arts and general science courses. Technical and vocational training is provided by technical institutes and other training providers and through apprenticeship. The Free Compulsory Universal Basic Education (FCUBE) program was introduced in 1995 and the free Senior High School and Technical/Vocational program was rolled out in 2017/18. Entry into SHS and technical/vocational institutions is contingent upon passing the Basic Education Certificate Examination (BECE) in grade 9 (JHS3). In grade 12 (SHS3), students take the West African Senior Secondary Certificate Examination (WASSCE). The WASSCE is also taken in The Gambia, Liberia, Nigeria and Sierra Leone and qualifies students for tertiary education including universities, polytechnics, teacher colleges of education, agriculture and nursing training institutes. The GES implements policy through its decentralized Regional and District Education Directorates (REDs, DEDs). The day-to-day operations of basic, senior secondary, and technical/vocational institutes are overseen by District Education Directors, Regional Education Directors and a Director for Technical Vocational Education, respectively.

Education is a highly prioritized sector, with total education expenditure exceeding international benchmarks. The Global Partnership for Education (GPE) recommends that 6 percent of a country's GDP and 20 percent of government expenditure should go towards education: between 2011 and 2015, education expenditure in Ghana accounted for between 6 and 8 percent of Ghana's GDP and 21 to 28 percent of government expenditure. This was higher than any of the other 13 Economic Community of West African States (ECOWAS) countries. In addition, education expenditure grew at a faster rate - in both nominal and real terms - than total government expenditure, evidence of the government's prioritization of the sector. In terms of sources of contribution, in 2015, the contribution of the Government of Ghana (GoG) to the education sector was the largest making up 68 percent of total education expenditure; however, 99.9 percent of these funds was expended on wages and salaries. Once other sources of education financing are added, wages and salaries made up 68 percent of overall education expenditure, with goods and services accounting for 21 percent and capital expenditure 11 percent. This indicates that almost all non-salary expenditures are from sources other than GoG, i.e., statutory and development partner funding. The allocation by sub-sector between 2011 and 2015, shows increasing expenditure at all levels of education, with expenditure for the SHS and tertiary sub-sectors growing more rapidly- much of which is due to rapid increases in Internally Generated Funds (IGF).

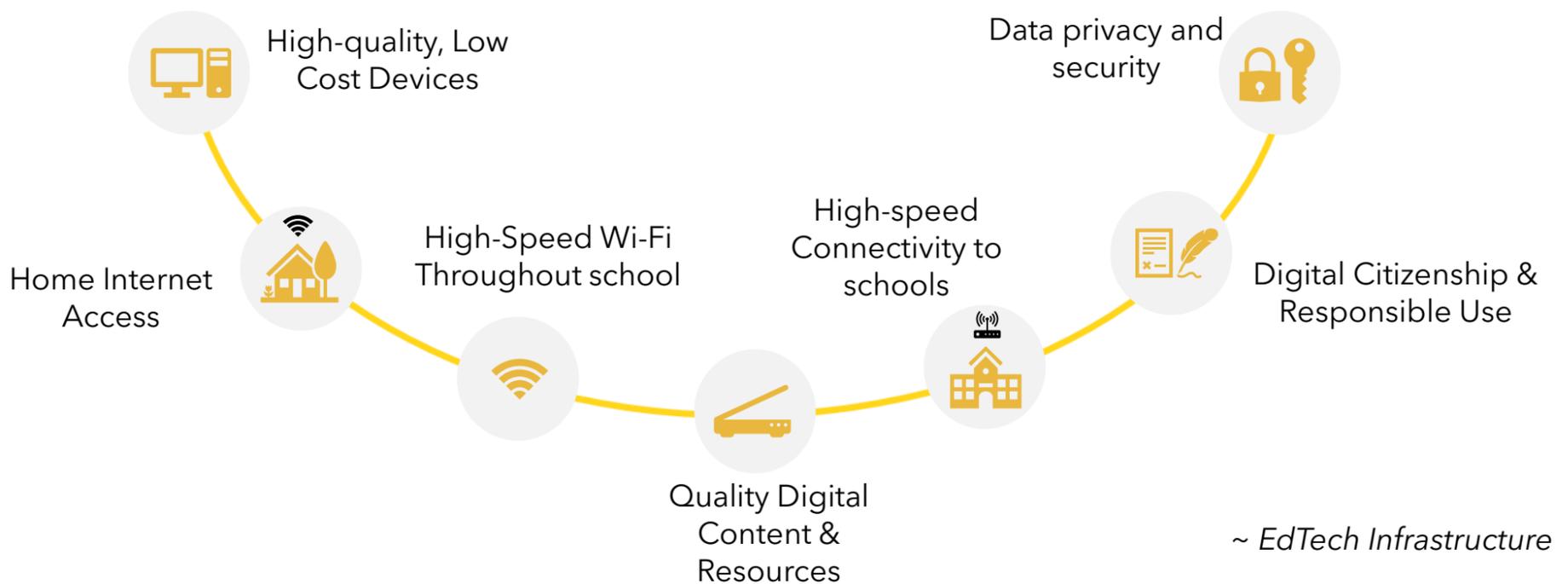


THE CURRENT STATE OF **GHANA'S** EDTECH ECOSYSTEM



INFRASTRUCTURE

Infrastructure related to education more broadly can apply to roads (to reach schools), the actual school buildings, and even electricity. These are expensive and require largely public sector effort to operationalize. EdTech infrastructure is relatively easier to mobilize yet access to it varies and thus its impact.

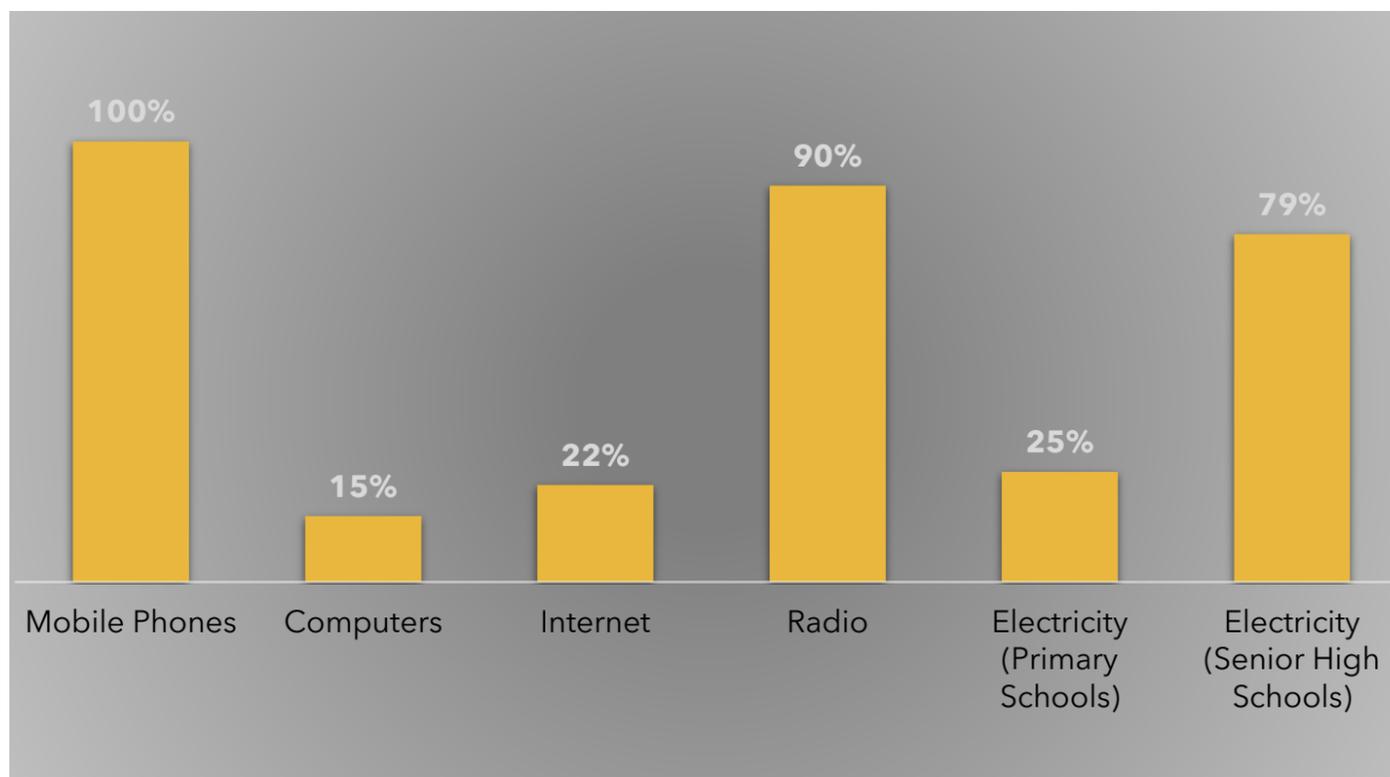


At the national level, household ownership of mobile phones is high (100%) but low for computers (15%). Smartphone ownership increased significantly between 2013 and 2017, with approximately one-third of adults owning a smartphone in 2017.

Households also have limited access to the Internet (22%). Disparities in access to EdTech infrastructure across urban and rural regions are highest for the Internet and lowest for radio. Only about 25% of primary schools have access to electricity at the school level compared to 79% of senior high schools. The ICT infrastructure in schools is weak and teachers also have limited knowledge and skill in using technology, often at the most basic level, making it challenging for teachers to effectively integrate technology in teaching and learning.

The UK Government department for International Development (DfID) reports that when it comes to Africa, excluding Sub-Saharan Africa, access to affordable and modern energy for all is a goal that can be realized by 2030. However, Sub-Saharan Africa is projected to lag 50 years behind the rest of the continent and to receive such infrastructure by 2080. Simultaneously, however, it is also the case that young Africans are some of the world's most innovative and aware smartphone users. This is especially the case in urban areas of Ghana, where excellent telecommunications networks are matched with an entrepreneurial spirit. A paper by Marfo and Okine (2010) shows that 98.35 % of people at Kwame Nkrumah University of Science and Technology in Ghana (also known as KNUST), agreed that e-learning would improve their university experience. KNUST is an excellent case study here because it illustrated how e-learning could be implemented in various ways.

INFRASTRUCTURE



~ Access rate to infrastructure

ACCESS TO EDUCATION IN COVID-19

Ghana confirmed its first case of coronavirus on March 12 2020. In a bid to keep the rapidly spreading virus at bay, the government announced a series of sweeping measures including banning mass gatherings and shutting down all borders and schools. However, the coronavirus pandemic has revealed the stark regional, social, and economic inequalities in Ghana's educational system.

Closing schools indefinitely has long been the reality for many high school students in northern Ghana, where educational facilities operate with limited infrastructure compared to those in the more affluent south. This has often manifested in high schools' inability to resume classes on time due to a shortage of teachers, delays in feeding grants and a lack of building facilities which, on occasions, have resulted in children having to study under trees. Beyond regional disparities, social class has also been a determining factor in the quality of education. Many wealthier Ghanaians send their children to private schools (primary and junior high) given that public schools are often resource poor.

In response to the crisis, the Ghanaian government established a Presidential COVID-19 committee including the Ministry of Information, Ministry of Health, the Ministry of Education and Ministry of Communication. The committee was charged to ensure that distance and remote learning continues during school closures throughout the COVID-19 period. The government also stated she is ensuring learners and groups that are vulnerable are included in the efforts to bring educational content to learners, without giving specific details

INFRASTRUCTURE

Tools and infrastructure being employed in Ghana include more traditional tools such as television, radio, and online learning including through her iCampus program and the establishment of an online learning system in partnership with Edmodo and other private entities. Private schools are also employing a variety of tools including Google for Education, Zoom for video conferencing, Skype, and WhatsApp. Universities are also deploying and expanding existing learning management systems including Moodle and other learning platforms.

Ghana's response has been encompassing and targeting learners from KG to university. The team consists of agencies across the entire education sector to ensure that all areas are considered including educational technology. However, it is not clear if the mobilization of the government has been effective in reaching the vulnerable and promoting learning for all.

GOVERNMENT INITIATIVES

The Ministry of Education's (MoE) current ICT in Education Policy was drafted in 2003, reviewed and updated in 2006 and 2009, before being finalized in 2015. The strategy guides seven priority areas, namely, **Education management, Capacity building, Infrastructure / e-readiness, incorporation of ICTs into the curriculum, Content development, Technical support, maintenance and sustainability, and Monitoring and evaluation.**

The policy aims to address challenges associated with the absence of a clear process to facilitate consultations with the MoE / GES on EdTech. The current lack of consultation with the MoE / GES on EdTech has resulted in the limited skills and capacity of MoE / GES staff to implement EdTech solutions, the teachers having limited knowledge to integrate EdTech solutions in schools, poor access to curriculum-aligned content in schools, and overall the weak infrastructure in schools.

Furthermore, the ICT in Education policy is designed to serve as a roadmap for implementing education-sector priorities outlined in the ICT for Accelerated Development (ICT4AD) policy. In practice, the policy is rarely consulted both within the MoE or by partners outside the government. It also lacks guidance on how best to address new developments in educational technology such as the increase in mobile-phone ownership and questions surrounding its use in schools. Other issues to note about the policy are that it lacks a detailed operational or implementation plan, and the roles and responsibilities of implementing government agencies are not specific enough. While it highlights the significance of public-private partnerships, it falls short of providing guidance for planning and structuring partnerships to ensure transparency and alignment with overall education sector priorities; it does not offer a plan for addressing resource constraints.

The policy document notes that the MoE had created an ICT in Education Coordination Office to oversee the policy's implementation, but high staff turnover prevented the office from taking hold. It also mentions setting up a research unit to evaluate digital content for teaching and learning. It is unclear if this unit was ever established, as the MoE still has a critical gap in research capacity.

The MoE recognizes the potential of technology to enhance education and has taken steps to integrate EdTech into schools and management processes. But this has not yet happened at scale or been heavily coordinated until the Covid-19 pandemic and unexpected closure of all schools. The MoE has been rapidly mobilizing and coordinating partnerships and resources to develop a strategy that ensures all students' learning continues. The Education Sector Strategic Plan 2018-2030 lays out the MoE's overarching objective for EdTech as "improved mainstreaming of ICT use in education at all levels" .

- At the **basic education level**, strategies are focused on improving infrastructure and supporting skills development for teachers and learners.
- At the **secondary level**, the focus is on improving the integration of EdTech in teaching and learning materials, with attention to STEM.
- At the **systems level**, the MoE identifies three strategic priorities; strengthening the EdTech policy to make it more comprehensive, improving the EdTech infrastructure in schools, and Strengthening the Center for National Distance Learning and Open Schooling (CENDLOS).

GOVERNMENT INITIATIVES

The problem of effectively adopting EdTech products and solutions is not primarily a problem of infrastructure or financing but that of integration into the school system. For example, the Vodafone Foundation and Microsoft have donated many devices (computers, tablets, etc.) to schools, but there is not a lot of clarity on the direct impact these initiatives on the learning outcomes of students in Ghana. (Education Sector Analysis, 2018). One of the major issues lies with the limited digital literacy of teachers and understanding of how tech can complement and support their teaching. Furthermore, the teachers are not motivated to use the new solutions, financially or otherwise, instead seeing it as more work with little to no professional development.

Training teachers is not easy. The costs involved in training a trainer, and then deploying them have proved to be very challenging. Measuring the costs and return on investment of EdTech interventions is difficult due to the lack of systematic analysis of development costs, initial implementation, and ongoing implementation of projects. This lack of evidence as to verifiable returns, perhaps, affects the private sector's stance on the viability of allocating resources to education. The Ghanaian Ministry of Education estimates that around 63,000 of the country's primary school teachers and a further 31,000 secondary school teachers remain untrained. The lack of resources and the challenges of reaching teachers in remote and geographically dispersed areas makes this a daunting task, all but impossible to achieve using traditional training methodologies, which are time-and-labor intensive by nature.

Train for tomorrow is Africa's first interactive distance learning program aimed specifically at teachers. It works by enabling two-way interactions between trainers and teachers in geographically remote and dispersed locations, meaning they can be reached at a much lower cost. Over the next two years, it will use the grant it received from Dubai Cares to train around 5,000 teachers in Ghana. At the same time, the design of mobile learning interventions for teachers should also take advantage of the individualized, personalized, and informal ways in which teachers can use mobile phones for their learning and peer support.

Innovation needs to come from the private sector, from within the local context of the country. Governments are not good incubators of innovation - they do not have the flexibility and agility that a small startup has. And therefore, strides in EdTech innovation must come from the private sector. The challenge is that it is not possible to copy and paste a solution from the US or Europe. The culture and circumstances are different enough.

The Covid-19 pandemic will cause a rethink of how technology can be adapted for the education sector and open conversations around homeschooling and rethinking after-school learning activities. Not necessarily EdTech replacing schools but serving as a support system for schools. So teachers, after now, if they come out of this on the right side, we may see teachers recommending a certain topic on a learning app for their students. On the other hand, the EdTech companies are also using this opportunity to innovate around existing products to serve customers that they possibly would not have reached with their current offerings.

Key government partners in EdTech

MINISTRY/AGENCY	ROLES AND RESPONSIBILITIES IN EDTECH
Center for National Distance Learning and Open Schooling	<ul style="list-style-type: none"> Developing technology-based teaching and learning programmes for pre-tertiary education
Ghana Education Services	<ul style="list-style-type: none"> Implementing sector policies and programmes (e.g. in-service teacher education training, development of teaching and learning materials, implementing and managing digital data collection efforts)
Ghana Library Authority (GhLA)	<ul style="list-style-type: none"> Establishing, managing and maintaining public libraries (individual, school and mobile lending programmes) ICT training to assist users in searching and retrieving information
<p>Ministry of Communications</p> <p>Ghana Investment Fund for Electronic Communications (GIVEC) - funded by contributions from telecom companies</p>	<ul style="list-style-type: none"> Providing radio, internet and other forms of electronic communication to under-served communities through its Rural Telephony Project and a partnership with GSMA and Vodafone Ghana Providing ICT equipment to educational, vocational and training institutions through its School Connectivity Project
National Information Technology Agency (NITA) (implementing arm of Ministry of Communications Ghana)	<ul style="list-style-type: none"> Implementing policy Providing IT solutions to Ministries, Departments and Agencies

Source: The EdTech hub

PARTNERSHIPS AND INITIATIVES

The MoE has been implementing EdTech initiatives since 2014 with the support of key development partners, namely DFID, UNICEF, USAID, and the World Bank and key implementing NGO partners include World Reader. It has been difficult for the MoE to track and monitor EdTech government initiatives introduced over the years because they typically are implemented on a small scale, and there is lack of coordination in the sector.

Highlighted below are key EdTech partnerships and initiatives:

- **E-Transform Ghana** is a noteworthy initiative being implemented by The World Bank in partnership with MoE/GES and the ministry of communication to improve the efficiency and coverage of government-service delivery using ICT. The project will support the development of an educational portal designed to give teachers, students, parents, and researchers access to good-practice lesson plans, digital curriculum content, teaching, learning aids, and facilitate knowledge exchange. Additionally, the project will provide internet connectivity to 55 secondary schools with high needs. It is estimated that 5,000 students and teachers will use the education portal (World Bank, 2019).
- **Ghana Accountability for Learning Outcomes Project (GALOP)**, led by the World Bank, will build on and scale-up initiatives of other development partners, including the USAID supported Learning Project, UNICEF supported STARS project, and the World readers e-reading program, among others. The goal of this initiative is to improve the quality of education in low performing basic schools and strengthen the education sector equity and accountability in Ghana by strengthening teaching and learning through teachers support and resourcing, strengthening school management, support and resourcing, improving accountability systems and technical assistance, monitoring and research. The project was approved in October 2019 and is expected to run through 2025 in partnership with MoE / GES, NACCA, NIB, and NTC. The project is expected to benefit 3.8 million people, including students, teachers, headteachers, circuit supervisors, regional education offices, and district education offices. The student level, GALOP, will support the provision of teachers' guides and pupil books (e-readers and workbooks) for targeted instruction. At the teacher level, innovative digital tools will be used to deliver in-service professional development to heads of schools and teachers. At the systems level, the project will digitize data collection and improve the accessibility and use of information for decision making. The MoE has been in discussion with Vodacom Ghana about a school management solution for reporting school-level data including student and teacher enrollment and attendance.
- **Discovery Education** in partnership with DFID's Girls' Education Challenge, USAID learning project, Camfed and Impact(Ed) International aims to improve literacy and numeracy through teacher training and tutoring, mentoring activities and support for girls and boys. It targets primary to secondary-school students. Impact(Ed) provides schools with technology to facilitate video teaching, such as a TV and DVD player and training to ensure the equipment is used effectively and maintained. Video resources include a life skills video series for advancing girls' and boys' attitudes and skills. The initiative aims to reach 800 primary and junior secondary school communities.

PARTNERSHIPS AND INITIATIVES

- **Local Content for African Libraries (LOCAL)** is an initiative to bring more local language books to libraries. The project involved nine community libraries in the three regions, namely, Ashanti, Central, and Volta. Twenty-four librarians were trained, and 450 e-readers and tablets were distributed to the libraries, targeting children aged 0-12. This project is in partnership with the African Library Association and Institutions (AfLIA) and Worldreader.
- **Mobile School Report Card (mSRC)** is a pilot initiative between the Ghana Education Service and UNICEF to test an android-based mobile phone application for collecting school-level data for decision making targeting primary education school. The pilot was done across two school terms in 73 schools and with 94 teachers.
- **Ghana Reads** was launched by Open Learning Exchange Ghana. The aim of the project is to expand universal literacy by introducing new learning methods using low-cost tablets and Raspberry Pi, which houses the Basic eLearning Library(BeLL) – an offline digital library. Students learn in small groups and at their own pace with the support of trained coaches. Initially piloted in 28 schools but expanded to 50 schools with the help of World Vision, serving 6,000 K-6 students in 8 of Ghana's 16 regions.
- **Secondary Education Improvement Program (SEIP):** the project supports efforts to improve the quality of senior high schools and strengthen the implementation, management, research, and monitoring and evaluation capacity of the MoE / GES aimed at low performing senior high schools. The project supports development and uptake of i-box (a local file server that does not require internet and i-campus (a web-based server that requires access to the internet) technology for delivering supplemental learning materials to students. The World Bank is leading the project with MoE and GES. The project began in May 2014 and is expected to run through November 2021.

From our research, information on the performance of these initiatives are currently not available. What is available are the objectives of the initiatives which are highlighted above. It's very possible the results of these initiatives will be published when they come to an end.

Mobile network operators play a major role in the advancement of EdTech in Ghana. They grant start-ups and third parties' access to low tech mobile channels, such as APIs and USSD, for deploying life-enhancing services with a direct impact on the SDGs. In 2017, Eneza Education partnered with MTN and AirtelTigo through its messaging gateways and API infrastructure to deliver curriculum-aligned lessons, questions and answers to more than 40,000 learners in Ghana. For commercial products, EdTech startups are faced with high commercial terms in working with mobile operators, putting a lot of stress on their operating expenses.

INVESTMENTS

“EdTech is only going to prosper to the extent that the entire country begins to rethink the process of investing in education,”

There is little to no public information on the total amount of funding raised by EdTech companies primarily focused in Ghana. This is one of the many flaws of Ghanaian EdTech ecosystem, lack of consolidated data.

23 Edtech companies in Ghana were mapped out. Data on funds raised is only publicly available for two companies Revo and Chalkboard. Revo raised fund from Ghanaian Angel Investor’s Network, (GAIN) while Chalkboard Education raised fund in equity from Jacobs Foundation. Most of these companies are funded by the founders, grants from Non-government organizations and from competitions won. For example, e-Campus, a Ghana-based online teaching and learning platform started by Cecil Nutakor’s (Founder) savings, while he has also received funding from the Ghanaian government and the United Nations Development Programme (UNDP) through the Ghana Multimedia Incubator Center (GMIC) incubator, which provided 13 ICT startups with office space, shared resources, training, mentoring, product development grants and exposure. E-campus has raised funds from Chanzo Capital between 2014 - 2020.

In 2018, a survey conducted on 20 Tech companies in Ghana revealed that 11 of them including 2 EdTech companies needed funding for the following:

- 80% need funding for human capital i.e. to hire more employees
- 70% need funding for expansion of business operations
- 40% need funding for product development / to develop technologies
- 40% need funding for marketing
- 40% need funding for R&D (research and development)
- Other areas mentioned include business model validation, buying equipment, paying office rent and other overheads.

The respondents said that technology wise, there are not many angel investors in Ghana that have context of what it takes to build a tech company in within the Ghanaian context. Therefore, camps at the hubs, accelerators and pitching competitions are common funding sources. Additionally, Ghanaian banks are not very keen about tech startups because of the perceived high risk, intangibility of the products and ability to generate quick returns.

Local investors would rather buy government bonds with good interest rates or move to bigger and more mature markets like Kenya, Nigeria, or South Africa where there is a higher potential of them maximizing the returns of their investments. However, Ghana is a relatively stable economic and political environment which is an important investment criteria for investors.

INVESTMENTS

EDTECH GRANTS

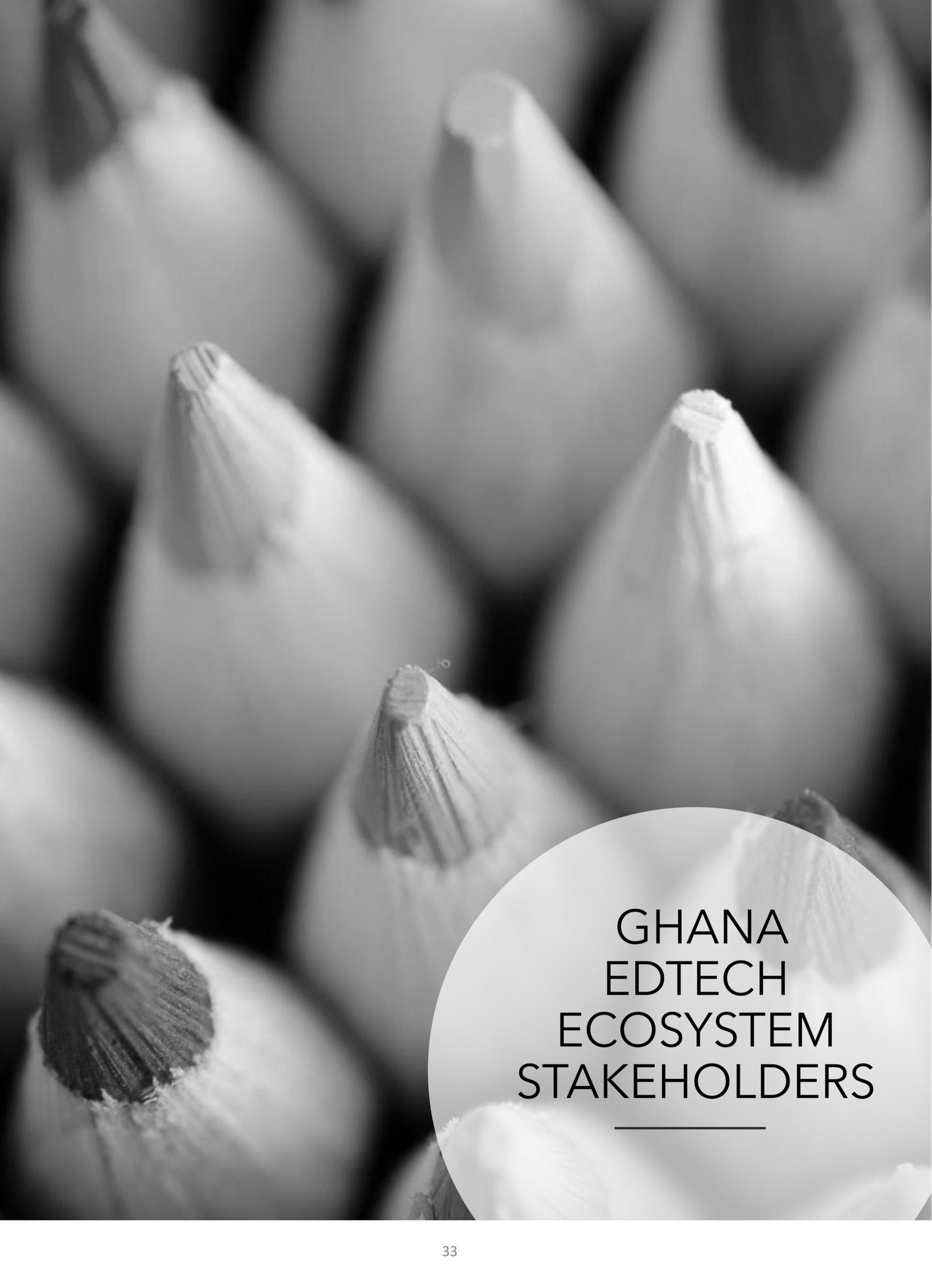
In the first quarter of 2020, the Mastercard Foundation Centre for Innovative Teaching and Learning in Information, Communications, and Technology (ICT) announced its first cohort of 12 EdTech Fellows. The fellows will each receive a comprehensive package over the next year that includes customized mentorship, financial support, the opportunity to test, validate and scale their business, and a grant to aid in the development of their solutions. Chalkboard education, an EdTech start up with operations in Ghana and Cote d'Ivoire was one of the beneficiaries.

The Centre for Innovative Teaching and Learning is a five-year initiative. It was launched in 2018 as part of the Foundation's Young Africa Works strategy to enable 30 million young people, especially young women, to find dignified and fulfilling work by 2030. The Centre aims to spark innovation, promote promising practices in the use of information and communications technologies for teaching and learning, and catalyze significant improvements in education across the continent.

Injini, the first educational technology (EdTech) incubator/accelerator on the African continent invests in promising African EdTech startups and works closely with them to ultimately achieve their goal of positively impacting educational outcomes on the continent. The Injini incubation and investment programme was officially launched in August 2017 and has involved incubating and investing in the most promising early-stage startups from Africa and holding ecosystem development events across the continent to encourage broader innovation and evidence-driven EdTech solutions.

In 2020, the Injini team selected six new EdTech startups who will embark on a 5-month incubation program starting next month. Smartix Education, A learning platform developed in Ghana to incorporate digital teaching aids in the classroom, will get an opportunity to work with subject matter experts in education, business, technology, and entrepreneurship. That's not all, just for participating in the program, the company in cohort 4 of the Injini EdTech Incubator will receive a grant to spend on their business.

There is no early-stage fund focused on African EdTech, and it is reliant on sporadic angels or self-funding. Startups do not have the relationships or expertise to find the right funding on the right terms. They cannot afford quality (or any) developers. They need various skills, and it is impossible to access that with startup budget, networks, and knowledge. Startups do not have relationships with education institutions to scale sales, and they lack the marketing expertise or budgets to access parents, students, and the Centre, etc



GHANA
EDTECH
ECOSYSTEM
STAKEHOLDERS

EDTECH PRODUCT CATEGORIZATION

Learning Management Systems: The EdTech companies in this category primarily develop and provide software solutions that improve parent-teacher-student communications, monitor student performance and progress, track assignments, share educational content, help teacher auto-generate reports and provide facilities for collaboration amongst teachers and students.

Career Development: Edtech companies that provide enterprises and individuals with educational content for professional advancement, including financial training.

Early Childhood Education: Early childhood education startups focus on creating educational games and educational toys for children, including interactive storybooks and educational mobile apps. They focus on providing game based and blended learning to provide playful experiences to early childhood learners.

Language Learning: Companies in this category facilitate language learning for non-native speakers either by providing pre-developed content or by connecting the learners with native speakers. Such platforms cater to learners across the age spectrum, whether they are in school or adults looking to develop new language skills.

Tech Learning: These platforms provide combination of offline and online learning solutions that cater specifically to teaching programming and other engineering disciplines.

Study Tools: Companies that provide study tools that use technology to solidify and/or expedite the learning process.

Course Materials: Companies in this category operate online marketplaces for textbooks and other course materials.

School Management: Companies in this category provide software-based solutions to simplify the administrative tasks of schools, such as digitizing transcripts, school fee management and online payments, facilitating school-wide communication, online examination and assignments and admissions support and application tracking.

Next-Gen School: Companies that offer alternatives to traditional education experiences.

Test Prep: Companies that focus on providing solutions to students preparing for standardized tests such as the SAT, GRE, and GMAT.

Classroom Engagement: Classroom technology and tools help teachers to implement interactive teaching methods and make the lessons more engaging. Such tools can improve thinking skills while improving student engagement and learning retention. Such products may offer features such as live lectures, discussion forums, cloud-based student response tools and other classroom communication tools

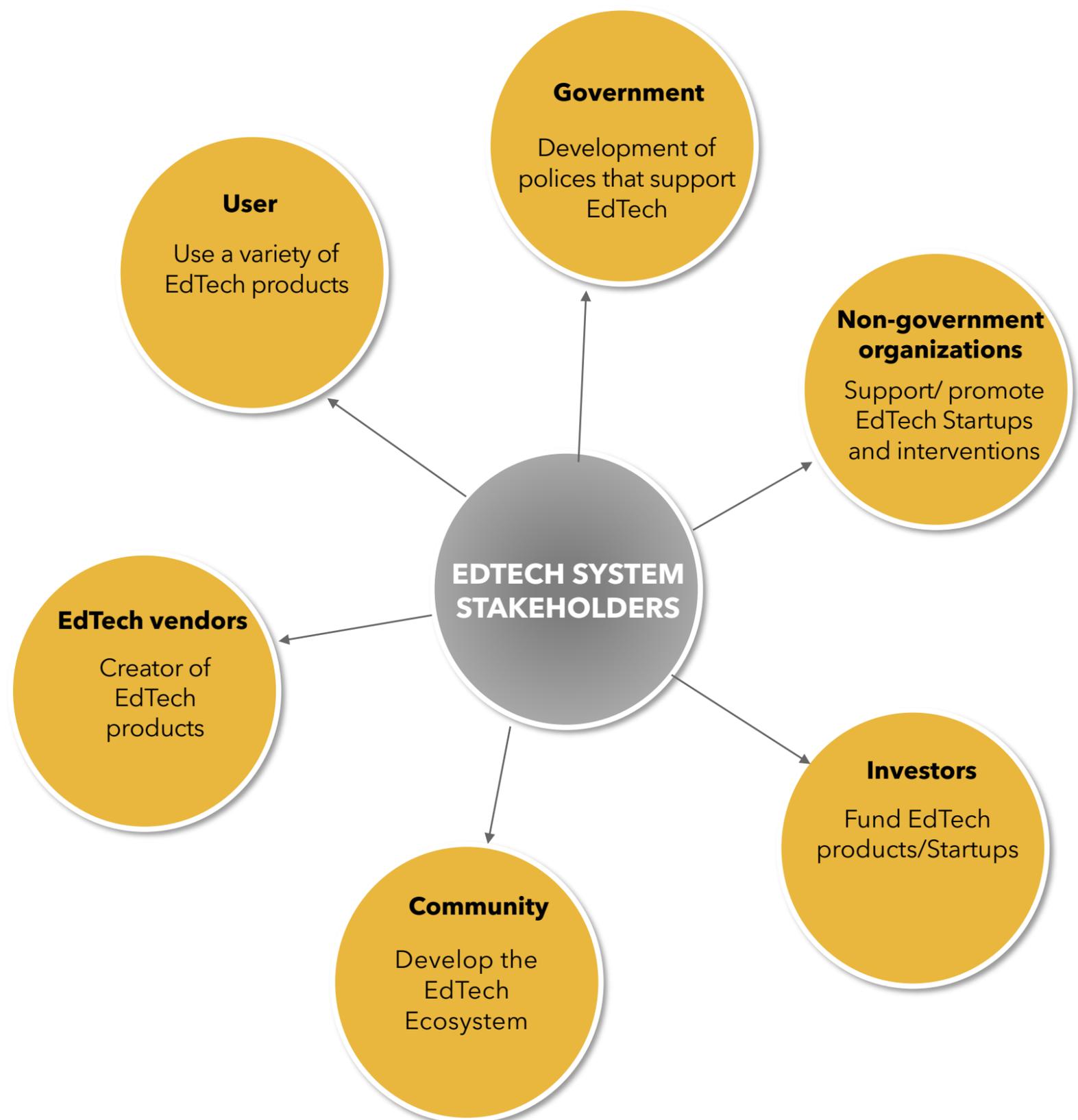
Online to Offline: These products offer platforms for learners or students to find face-to-face or offline tutoring, classes or workshops.

Differentiated Instruction: Providing different students with different avenues to learning in the same classroom (or same application) in terms of: acquiring content; processing, constructing, or making sense of ideas; and developing teaching materials and assessment measures so that all students within a classroom (using the same platform) can learn effectively, regardless of differences in ability.

STAKEHOLDERS

The Edtech system stakeholders are:

- Edtech vendors - Start-ups and companies
- User - Educational Institutions, Students, companies
- Investors:
- Community
- Government
- Nongovernment organizations



THE STARTUPS



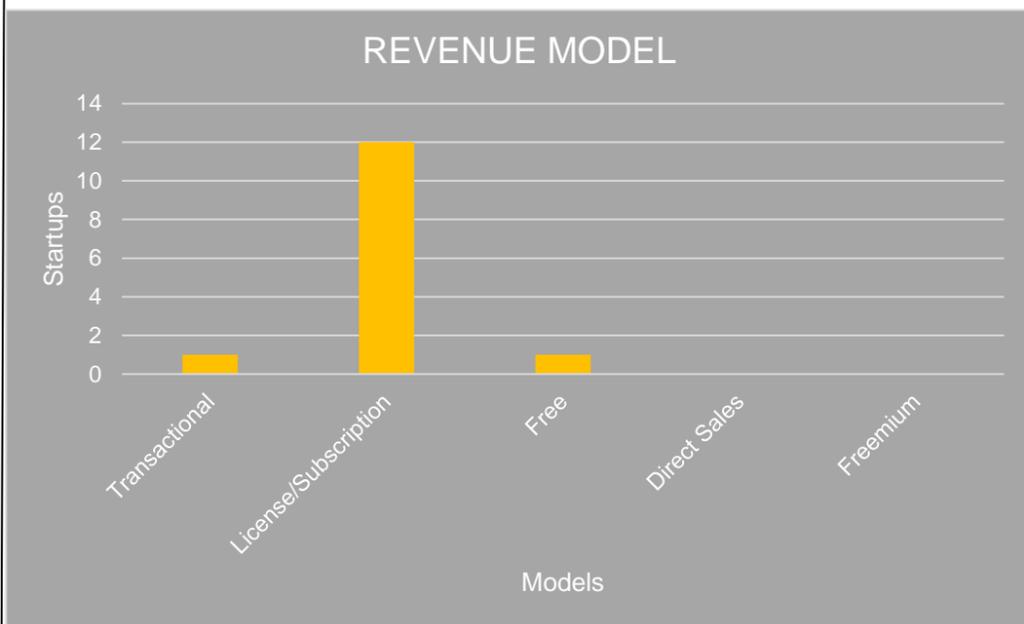
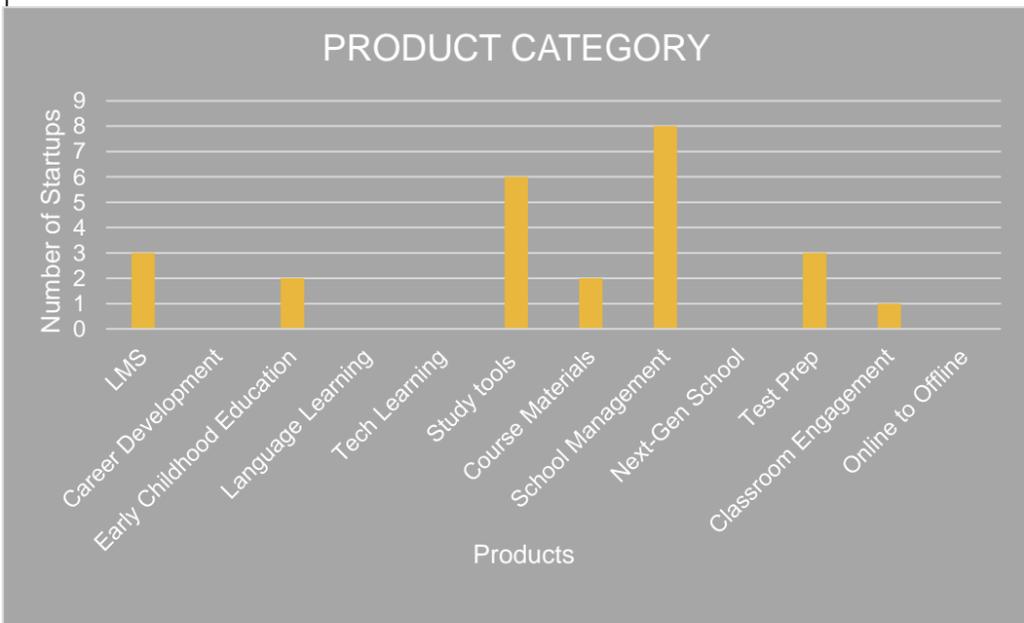
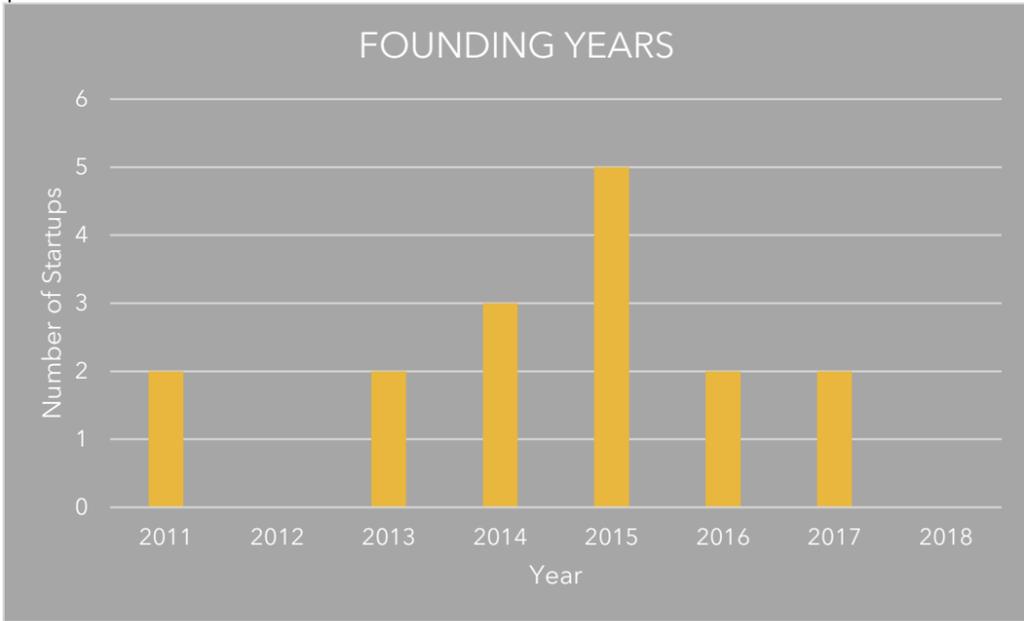
THE STARTUPS



The image displays a collection of startup logos for educational technology companies, arranged within a large yellow silhouette of the African continent. The logos include:

- eneza education**: spreading education everywhere
- craftEd**: represented by a lightbulb icon
- Nikasemo**
- DreaMetric**
- MAKIP SCHOOL MANAGEMENT SYSTEM**
- eMLearner ERP**
- schoolz admin**
- eCampus**: Learn Smarter
- EDUFEDS**
- IDS INFOVIEW**: Data Solutions
- PEEP & LEARN**: Teach Right, Learn Easy
- Skuumi**: Online School Management System
- AUTISM AMBASSADORS OF GHANA**
- SoftSchools.com**
- A-Plus E-Learning**
- eCnatch**: making excellence possible
- AyaPrep**
- GHED 21ST**: Extreme Possibilities
- ivolilu**
- revo**
- FINEAZY**
- ZibbleSMP**: joining hands to educate
- Young at HEARTS**
- CHALKBOARD EDUCATION**
- nexvelsoft**: your success, our goal
- FinMock**

STARTUPS SNAPSHOT



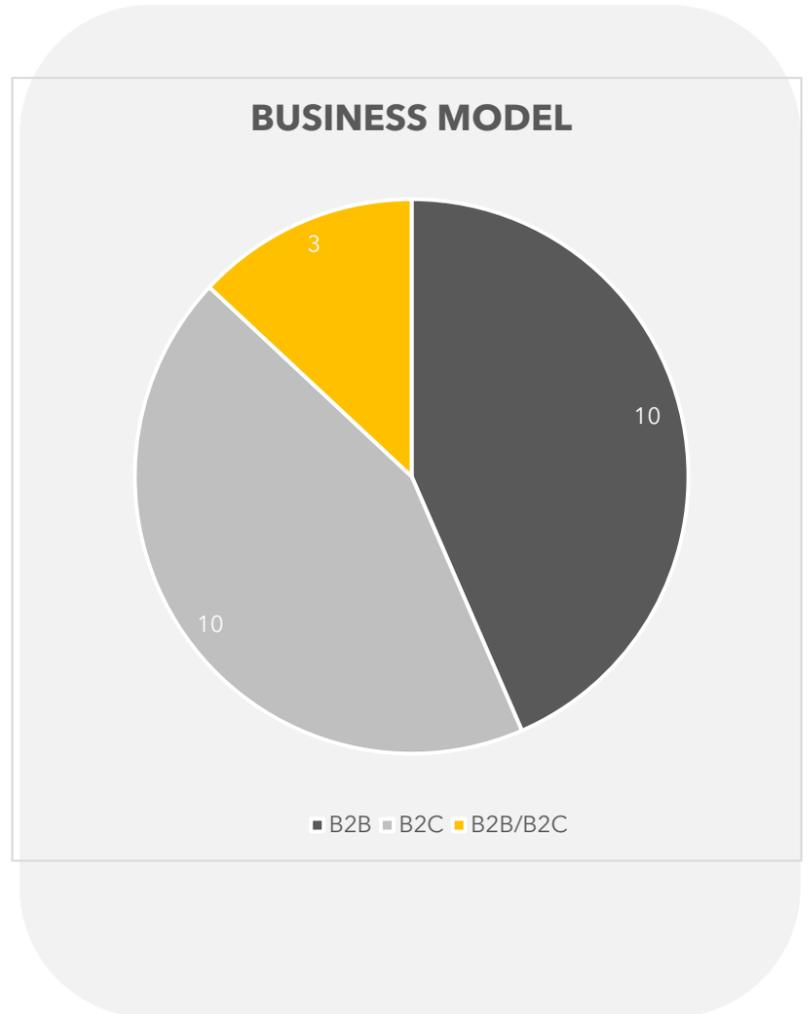
Investors

Identified - 3 Not Available - 20

JACOBS FOUNDATION
Our Promise to Youth

GIST

CHANZO CAPITAL





The start-ups - GHANA



School Management



Founder: N/A **Founded:** N/A
Other Countries: N/A **Product Category:** School Management
Headquarters: Ghana **Business model:** B2B
Investor: N/A **Revenue model:** License

Description: Maki School Management System is an enterprise school management platform that integrates multiple systems for School Management, Learning Management and Student Information Management. Maki School Management System can accommodate multiple schools or group of schools in different geography with different school curriculum. This integrated system automates the whole school processes by providing all the functionalities necessary for the education in the schools.



Founder: N/A **Founded:** 2013
Other Countries: N/A **Product Category:** School Management
Headquarters: Ghana **Business model:** B2B
Investor: N/A **Revenue model:** N/A

Description: Schoolz Admin is the modern Tech Solution for the modern school. With the ever evolving trends in management of schools, Schoolz Admin adapts very quickly to solving problems school administrators/owners face.



Founder: Jeffry Bamba **Founded:** 2016
Other Countries: Nigeria, Ivory Coast, Equatorial Guinea **Product Category:** School Management
Headquarters: Ghana **Business model:** B2B
Investor: N/A **Revenue model:** License

Description: InfoView Data Solutions Ltd is a premier leader in information technology delivering targeted solutions to private and government schools. We deliver innovative solutions that drive value for money by focusing on the schools' problem domain and tailoring IT automated solution for it.



Founder: N/A **Founded:** 2014
Other Countries: N/A **Product Category:** School Management
Headquarters: Ghana **Business model:** B2B
Investor: N/A **Revenue model:** N/A

Description: Nexvelsoft is a web, software and mobile development firm, providing solutions to clients in diverse industries. We offer unparalleled quality, creative and professional services with a commitment to excellence. We specialize in crafting solutions for professional web design, web applications development, mobile applications development, desktop application development and other Business solutions. We also offer services such as domain registration, web and data hosting, graphic design and search engine optimisation.



Founder: N/A **Founded:** N/A
Other Countries: N/A **Product Category:** School Management
Headquarters: Ghana **Business model:** B2B
Investor: N/A **Revenue model:** License

Description: Intelligent Application for all Schools and Training Organization. A Professional and First-Class Educational Delivery, Based on Educational and Development Researchers.



Founder: Timothy Owusu **Founded:** 2013
Other Countries: N/A **Product Category:** School Management
Headquarters: Ghana **Business model:** B2B
Investor: None **Revenue model:** Subscription model

Description: iKolilu is an online cloud-based school management system. The features include student admission management, academic records management, billing and fee payment management, lesson planner, library management, accounts and expenses management, payroll management, HR management, teacher class scheduling and inventory management.



Founder: Agbona Saheed **Founded:** 2015
Other Countries: N/A **Product Category:** School Management
Headquarters: Ghana **Business model:** B2B
Investor: Gist Network **Revenue model:** Subscription

Description: Edufeds is a multipurpose school management software which is used by educational institutions worldwide for all administration, management and learning.



Founder: Stephen Ofori **Founded:** N/A
Other Countries: N/A **Product Category:** School Management
Headquarters: Ghana **Business model:** B2B
Investor: N/A **Revenue model:** N/A

Description: Skuuni is a web-Based School Management Platform that brings into one place to manage all elements of a school efficiently including Students (admission/registration), Parents, Employees/Staff, Attendance, Terminal reports, Classes, Grades, Fees collection, Financial management (Income and Expenditure), etc.



The start-ups - GHANA



Study Tools and Course Materials



Founder: Bernard Lomo **Founded:** 2014
Other Countries: N/A **Product Category:** Study tools
Headquarters: Ghana **Business model:** B2C
Investor: N/A **Revenue model:** N/A

Description: Nikasemo is an Education Technology (EdTech) company focused on using technology to improve how people learn. It was founded in 2014 with an intent to help students get access to lecture notes and materials. Fast forward to today, its corporate strategy is now focused on making learning interactive, engaging and extremely rewarding.



Founder: Kago Kagichiri **Founded:** 2011/2017(GH)
Other Countries: Ghana, Ivory Coast **Product Category:** Study tools/Course materials
Headquarters: Kenya **Business model:** B2C
Investor: Jacobs Foundation, Sorenson, Safaricom, **Revenue model:** License/Subscription

Description: Eneza Education is a Kenyan startup that was founded in 2011. They entered the Ivorian market in January 2019 and are present in Kenya, Ghana and Côte d'Ivoire. They offer courses for primary school and secondary school students through basic phone functions. In 2017, Eneza launched her services in Ghana.



Founder: N/A **Founded:** N/A
Other Countries: N/A **Product Category:** Study tools
Headquarters: Ghana **Business model:** B2C
Investor: N/A **Revenue model:** N/A

Description: Peep and Learn is an interactive educational hub that endeavors to connect students, parents and teachers on an innovative, fun and interactive platform for best results in our national academic curriculum. With our Home Tuition service, E-library and Online Tuition service, we help students learn the easy and convenient way.



Founder: Archie Annan **Founded:** 2014
Other Countries: N/A **Product Category:** Study tools/Course Materials
Headquarters: Ghana **Business model:** B2C
Investor: N/A **Revenue model:** Subscription

Description: REVO Education transforms classrooms, empowers teachers and captivates students by providing high quality, dynamic, digital content to schools both large and small, rural and urban and everything in between..



Founder: N/A **Founded:** N/A
Other Countries: N/A **Product Category:** Study tools
Headquarters: Ghana **Business model:** B2B / B2C
Investor: N/A **Revenue model:** N/A

Description: Young at Heart Ghana is an ed-tech social enterprise that is championing the use of digital platforms to create exciting learning experiences for youth and children. In world where technology is revolutionizing the way we learn, work and play Y@H focuses on providing children and youth, with special focus on rural and low-income communities, with digital literacy while guiding them to use these skills to discover practical S.T.E.A.M lessons.



Founder: N/A **Founded:** 2017
Other Countries: N/A **Product Category:** Study tools
Headquarters: Ghana **Business model:** B2C
Investor: N/A **Revenue model:** N/A

Description: Fineazy is an AI-powered chatbot empowering excellent, informed financial decisions. We believe financial capability is part of a person's dignity, yet finance is hardly ever taught in a simple, engaging and accessible way until now.

The startups - GHANA



Learning Management System



Founder: N/A **Founded:** 2011
Other Countries: N/A **Product Category:** LMS
Headquarters: Ghana **Business model:** B2B / B2C
Investor: N/A **Revenue model:** N/A

Description: eCoach provides solutions for tutors to manage content and people. Products include ecoach.io is a social learning platform connecting learners, educators, parents and institutions; ecoachbooks.com is a digital content authoring, distribution and monetization platform for educational content publishers; ecoachtutors.com is a digital marketplace that matches students with private tutors; ecoachtests.com is a customizable assessment platform that test creation, grading and analysis.



Founder: N/A **Founded:** 2015
Other Countries: N/A **Product Category:** LMS
Headquarters: Ghana **Business model:** B2B
Investor: N/A **Revenue model:** Subscription

Description: A-Plus E-Learning provides a learning management system for schools and companies. Allows users to build courses, set learning paths, organize and share files, issue certificates upon completion, offer discussion forums, and provide comprehensive reporting. Offers a blended learning platform with gamification and communication tools. Offered on a monthly subscription model.



Founder: Adrien Bouillot **Founded:** 2015
Other Countries: Ivory Coast **Product Category:** LMS
Headquarters: Ghana **Business model:** B2B
Investor: Jacobs Foundation **Revenue model:** License/Subscription/Transactional

Description: Chalkboard offers an easy to use mobile-based learning management and measurement evaluation system. The system is designed for organization whose services are tailored to underserved learners and communities. Chalkboard LMS allows organisations to make their existing content mobile-friendly. It works on all phones and without the Internet. Additionally, Chalkboard offers content digitisation and instructional design services, integration to third-party dashboards, and soon AI-Enhanced adaptive learning and auto-grading.



Early Childhood Development



Founder: Mamaga Akosua **Founded:** 2015
Other Countries: N/A **Product Category:** Early Childhood/Special Needs
Headquarters: Ghana **Business model:** B2C
Investor: N/A **Revenue model:** Free

Description: The AUTISM AID APP is first app for Autism in Ghana and West Africa. It is an android application developed to promote Autism Awareness and also help improve on the lives of children living with Autism.



Founder: Rudolph Ampofo **Founded:** 2016
Other Countries: Kenya, Mozambique **Product Category:** Early Childhood/Special needs
Headquarters: Ghana **Business model:** B2C
Investor: N/A **Revenue model:** License/Subscription

Description: Craft Ed is a social enterprise company located in Accra, Ghana building a teletherapy platform to deliver screening, assessment and therapy support services over messaging apps such as WhatsApp to individuals who have autism and other related disorders. Their target customers are all parents who have children with autism and other related disorders and struggle to access affordable and qualified therapists.

The startups - GHANA



Test Prep



Founder:	N/A	Founded:	2011
Other Countries:	N/A	Product Category:	Test Prep
Headquarters:	Ghana	Business model:	B2C
Investor:	N/A	Revenue model:	Subscription

Description: FinMock offers online mock test portal for students. Provides tests, results, progress tracking, review tests, and performance comparison. Prepares students for exams like BECE and WASSCE. Also offers previous years question papers.



Founder:	Appiah Boakye	Founded:	N/A
Other Countries:	N/A	Product Category:	Test Prep
Headquarters:	Ghana	Business model:	B2C
Investor:	N/A	Revenue model:	N/A

Description: AyaPrep is a video tutorial software application carefully designed as a study tool by AyaPrep Limited. This innovative application has two versions; the Junior High School version which prepares students for the Basic Education Certificate Examinations (BECE) and the Senior High School version which also prepares students to sit for the core mathematics subject of the West African Senior Secondary School Examinations (WASSCE).



Founder:	Cecil Nutakor	Founded:	2015
Other Countries:	N/A	Product Category:	Test Prep
Headquarters:	Ghana	Business model:	B2B / B2C
Investor:	Chanzo Capital	Revenue model:	License/Subscription

Description: eCampus is a Software as a Service (SaaS) Education Technology (EdTech) solution, established in 2015, which helps organizations and academia by making the learning process adaptive, personalised and informally accessible to all. eCampus primarily runs a subscription based model. Users subscribe for courses on their platform and pay an average of \$1 per course. They currently have 33k+ users on their platform.



Classroom Engagement



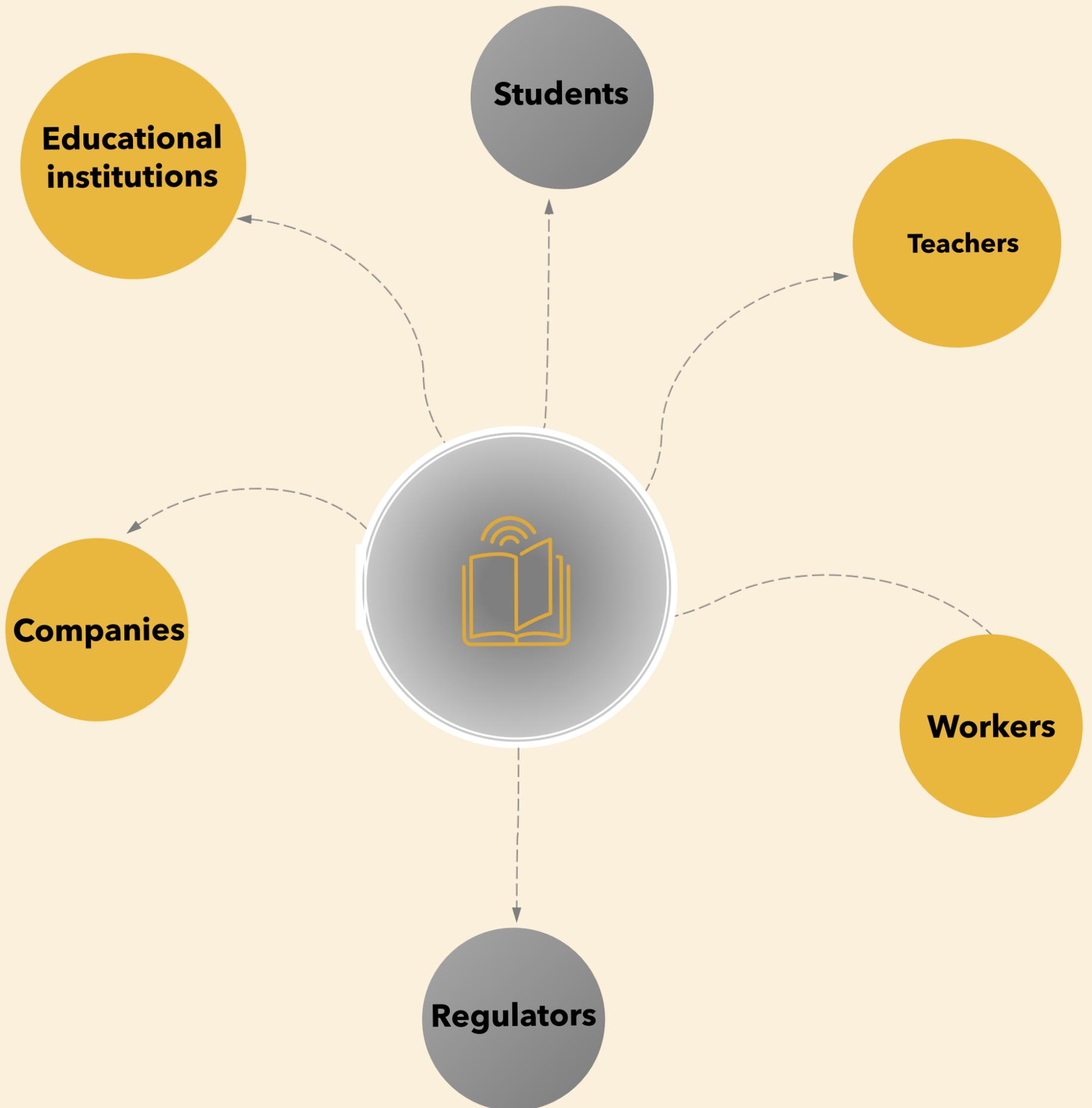
Founder:	N/A	Founded:	N/A
Other Countries:	N/A	Product Category:	Classroom Engagement
Headquarters:	Ghana	Business model:	B2B
Investor:	N/A	Revenue model:	N/A

Description: DreaMetrix empowers teachers and students in all classrooms. Whether its feedback on strategy in Math class, work product revision in English courses, project development in Science, or coaching in Physical Education, DreaMetrix goal is to elevate learning in any and every class.

THE USERS



> Users of EdTech products services



POTENTIAL MARKET SIZE

The calculation of the market size is based on expected penetration rate of EdTech products and the effective demand of the Ghanaian population. Expected penetration rate should be at least 70% because education is a universal good. The effective demand is based on income bracket:

Students - \$3 for urban users and \$1 for rural users. The prices are based on premium charge for eCampus and the monthly charge for using Eneza services, an EdTech company focused on rural communities.

Career development - \$1 for both urban and rural dwellers. This is based on the assumption that NGO's/Government will pay for career development trainings for them to secure employment.

Organization capacity - Based on a minimum of \$4.99 (cheapest course available on Udemy) and \$1 for rural based.

Educational Institutions - \$3 per student per term for Urban dwellers while rural will be at a 50% discount. Ikolilu, a school management company in Ghana charges her clients slightly above \$3.

	Pupils		Students		Career development	Organizations - Capacity development	Educational Institutions
Key driver of market size	No of Pre-Primary Pupils	No of Primary Pupils	No of Secondary Students	No. of Tertiary Students	Unemployed population	Employed population	No of educational institutions
Market Size	1,552,219.00	4,339,769.00	4,415,450.00	2,827,552.00	5,554,331.50	7,362,718.50	28,365.00
Penetration rate	70%	70%	70%	70%	70%	70%	70%
Addressable market	1,086,553.30	3,037,838.30	3,090,815.00	1,979,286.40	3,888,032.05	5,153,902.95	19,855.50
Rural distribution	43%	43%	43%	43%	43%	43%	43%
Urban distribution	57%	57%	57%	57%	57%	57%	57%
Rural market size	467,217.92	1,306,270.47	1,329,050.45	851,093.15	1,671,853.78	2,216,178.27	8,537.87
Urban market size	619,335.38	1,731,567.83	1,761,764.55	1,128,193.25	2,216,178.27	2,937,724.68	11,317.64
No. Rural students							463.07
No. Urban students							463.07
Rural - Target price/Month	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.50
Urban - Target price/Month	\$3.00	\$3.00	\$3.00	\$3.00	\$1.00	\$4.99	\$3.00
No. of subscription/Year	12	12	12	12	6	1	3
Rural Market value	\$5,606,615.03	\$15,675,245.63	\$15,948,605.40	\$10,213,117.82	\$10,031,122.69	\$2,216,178.27	\$17,791,343.96
Urban Market Value	\$22,296,073.72	\$62,336,441.92	\$63,423,523.80	\$40,614,956.93	\$13,297,069.61	\$14,659,246.16	\$47,167,749.09
Total Value	\$27,902,688.74	\$78,011,687.54	\$79,372,129.20	\$50,828,074.75	\$23,328,192.30	\$16,875,424.43	\$64,959,093.05
Potential Market Value	\$341,277,290.01						

THE COMMUNITY



THE COMMUNITY

HUBS

Ghana is teaming with young entrepreneurs who are constantly creating and toying with new ideas, to change their lives and that of their communities. Over the years, the need to network and collaborate has created a thriving scene for techies, innovators, and businesses through co-working spaces and tech hubs.

Tech hubs are designed to support start-ups and help them thrive, as well as build entrepreneurial tech communities. Although hubs can vary widely in terms of structure and services, they are generally viewed as places where tech and entrepreneurship community members assemble.

At its core, a tech hub is a space where technology enthusiasts, innovators and entrepreneurs gather to share ideas and build. They support early-stage technology innovators by allowing them to establish links to other members of the innovation ecosystem with the goal to improve their business performance.

These hubs host events, manage blogs, and run promotional activities that spotlights the work of tech startups with the goal of attracting investors and customers by bringing awareness to the products they are creating.

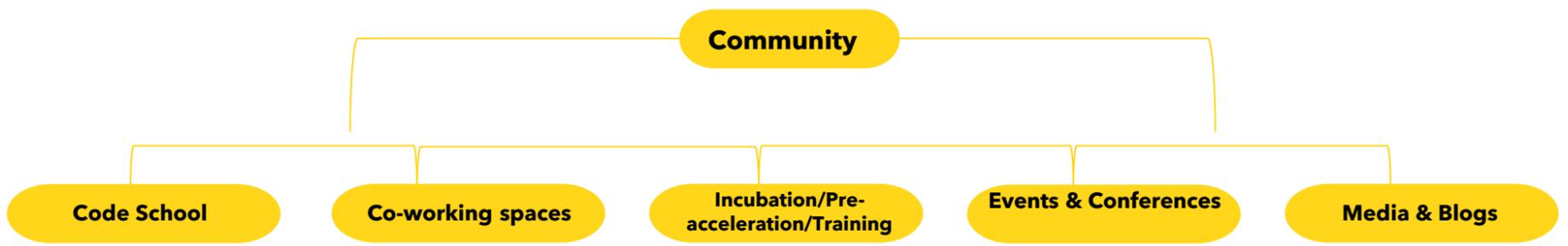
INCUBATORS AND ACCELARTORS

Incubators typically provide physical coworking space (although some may be virtual) and access to their networks for very early stage start-ups, which are idea based and possibly pre-revenue at the time of application. Some incubators provide funding for start-ups in the incubation programme which is usually in the range of \$10,000 - \$30,000 either in the form of a grant or equity in which case the incubator will own shares in your company.

Accelerators are also aimed at early-stage companies but ideally at those who have gotten some traction and are ready to grow and scale their business. Typically, that means the businesses are already making revenue. Accelerators generally take equity in the business in exchange for access to their programme, their facilities, and their mentor network, which often includes investors and experienced business managers. Both incubators and accelerators usually have a set timeframe, from a few weeks to a few months.

Accelerators and incubators typically have a selective application process and start-ups need to prove themselves in order to be granted access. The application process examines the start-up's business model, its financial performance to date, projections for the future, and the quality of the team. While they are typically well run and help entrepreneurs to refine their business, one downside of accelerators and incubators is that they often require entrepreneurs to spend valuable time away from their businesses. There are a few accelerators and incubators in Ghana, the vast majority of which are based in Accra and Kumasi. An alternative option for an entrepreneur that is not successful at gaining access into an incubation or acceleration program is joining an entrepreneurial community through one of the various hubs and co-working spaces across the country.

Tech & EdTech Community Overview



Code School	Co-working spaces	Incubation/Pre-acceleration/Training	Events & Conferences	Media & Blogs

Three pencils are arranged diagonally across the page. The top pencil is on the left, the middle one is in the center, and the bottom one is on the right. They are all light-colored with silver-colored eraser bands.

GHANAIAN EDTECH ECOSYSTEM GAPS

GAPS IN THE EDUCATION SYSTEM - GHANA

QUALITY

Learning Adjusted
Years of School



Ghana: 5.7yrs



Nigeria: 4.25yrs



**Sub-Saharan
Africa:** 4.94yrs



Global: 7.89yrs

Low learning outcomes.

Although a child who starts school at age 5 can expect to complete 11.6 years of school by his/her 18th birthday, factoring in what children learn and holidays, expected years of schools is only 5.7 years. This is due to the low quality of basic education as measured through standardized student assessments. Results of the Early Grade Reading Assessment (EGRA) did not change between 2013 and 2015 and indicated that just 2 percent of Primary 2 (P2) pupils were able to read at an appropriate grade level with 50 percent unable to recognize a single word. The 2015 Early Grade Mathematics Assessment (EGMA) found that higher order mathematical concepts were a challenge with 75 percent of P2 pupils unable to answer a single conceptual knowledge subtask (i.e., word problem) correctly. The 2016 National Education Assessment (NEA) confirms these findings with 30 percent and 50 percent of P4 pupil are below the minimum proficiency for English and Mathematics, respectively; at the P6 level, these figures are approximately 30 percent for both subjects. Poor literacy and numeracy at the basic level is consequential in later years: at the secondary level, learning outcomes are also low with only 33 percent of students passing the WASSCE (grade 12 exam) for Mathematics in 2017, and in 2016, and less than a quarter of students qualified for entry into tertiary education.

Significant regional and gender disparities in learning outcomes.

On national exams, regions that perform worst are generally from the Upper East, Upper West and the Northern regions where poverty is the highest. There are also important disparities at sub-regional levels and in terms of rural/urban areas. Pupils in rural areas score substantially lower on the National Education Assessment(NEA) and Early Grade Reading Assessment(EGRA) than those in urban areas: the percent of pupils scoring non-zero scores in EGRA in English was just 19.6 percent in rural areas compared to 39.5 percent in urban areas, while the proportion of pupils providing correct answers in P4 Math was nearly 10 percentage points lower among those students in rural areas compared to those in urban areas.

EGRA Assessment: English
% of students with non-
zero scores:



Urban: 39.5%



Rural: 19.6%

GAPS IN THE EDUCATION SYSTEM - GHANA

There are also gender disparities. National pass rates for BECE show that males perform better than females on all subjects, except for Social Studies, where females outperform males. At the secondary level, students' performance on the WASSCE is low, particularly in Mathematics. Further, 23 percent of students qualified for tertiary education in 2016, with 26 percent of males qualifying compared to 20 percent of females.

Several key factors contribute to low learning outcomes and regional and gender disparities:

- Poor conditions of school infrastructure and limited textbooks, workbooks and other teaching-learning materials.
- Ineffective teacher management and inadequate support system.
- Inequitable and inefficient use of non-salary budget, delayed and irregular capitation grants, and inequities across wealth quintiles and per-student spending across sub-sectors.
- Inadequate governance and accountability.

Quality of education is impacted by poor conditions of school infrastructure, limited textbooks, workbooks and other teaching-learning materials. The conditions of many public basic education schools especially those in rural areas reduce the availability of functional classrooms, furniture, and toilets and/or water and sanitation facilities. Textbook-pupil ratios are far below established norms (one workbook per child in KG and three per child at Primary and Junior High School) with only 0.2 workbooks per child provided at the KG level, 1.4 at Primary, and 1.5 at JHS in 2016/2017.

Ghana's teacher deployment is ineffective with significant variance of PTRs and mismatched local languages of instruction. Deployment of teachers is an area of concern, with large regional and sub-regional disparities in pupil-teacher ratios and weak correlation at district level between the number of students and teachers, especially at the Kindergarten and Senior High School levels. PTRs vary substantially across the country, with districts mostly in the north of Ghana having a shortage of teachers, while districts in the south of Ghana have a surplus of teachers.

Workbook-Pupil Ratio

<u>GHANA</u>	<u>NORM</u>
KG	KG
0.2 Per Child	1 Per Child
Primary	Primary
1.4 Per Child	3 Per Child
JHS	JHS
1.4 Per Child	3 Per Child

GAPS IN THE EDUCATION SYSTEM - GHANA

In addition, teacher turnover is high and variable, with a national average of 12 and 18 percent at KG and primary levels, respectively. Data indicate that on average, 20 percent of teachers are placed in schools where they are not proficient or are only partially proficient in the language of instruction despite the policy which requires that the language of instruction at KG to P3 is one of the eleven officially selected Ghanaian languages. In addition, 18 percent of pupils did not speak the language of instruction that was used/taught in their schools.

Teacher absenteeism, attrition and time on task have been widely recognized as a problem with overall teacher absenteeism of 14 percent in 2014/15 as measured in 75 deprived districts (GPEG districts) and varying considerably by region (higher in the three regions in northern Ghana). Teacher absenteeism is only one of the reasons for limited instruction and is often linked to school location, lack of school amenities, opportunities for other income generation activities and illness. School closings, sports and culture events, poor classroom instructional time use, and weak instructional and school leadership also contribute to lower time on task. Recent analysis for the targeted instruction pilot in Ghana - the Teacher Community Assistant Initiative (TCAI) - found that on average teachers in the program were absent 30 percent of the time, and even when present in the school, time-on-task was low. Only 15 percent of teachers trained in the remedial method were found correctly implementing the program during unannounced spot-checks. While lecturing may be counted as interactive learning time, real engagement in learning may be lacking. Teacher attrition increased to 4 percent in 2016 from 2 percent in 2009 and is likely linked to the introduction of new teacher vacancy policy whereby positions need to be advertised as available. Many of the posts in remote rural areas continue to remain difficult to fill.

RELEVANCE

Ineffective teacher training and instructional leadership and support for delivering the curriculum. The ESA (2018) identifies challenges with teacher capacity and support as the leading factor in basic education performance. The curriculum content is overloaded and lacks attention to important skills such as critical thinking, collaboration, communication, and digital literacy and there is very little instructional leadership provided for teachers to deliver the curriculum. The outdated curriculum and assessment methods for teacher education have not encouraged the development of effective teaching skills. Skills like classroom management and teaching strategies geared to the level of the learner are not emphasized. Basic education teachers are not trained to address the varying needs of learners at different levels, especially students with special needs and many teachers struggle to teach English and Mathematics. Although the proportion of trained teachers has increased over the last decade, significant gaps remain at the KG level (only 65% in 2016/17) and in the three regions in northern Ghana. In addition, the lack of support, coaching, mentoring, instructional leadership and continuous professional development (CPD) weakens teacher effectiveness.

GAPS IN THE EDUCATION SYSTEM - GHANA

ACCESS



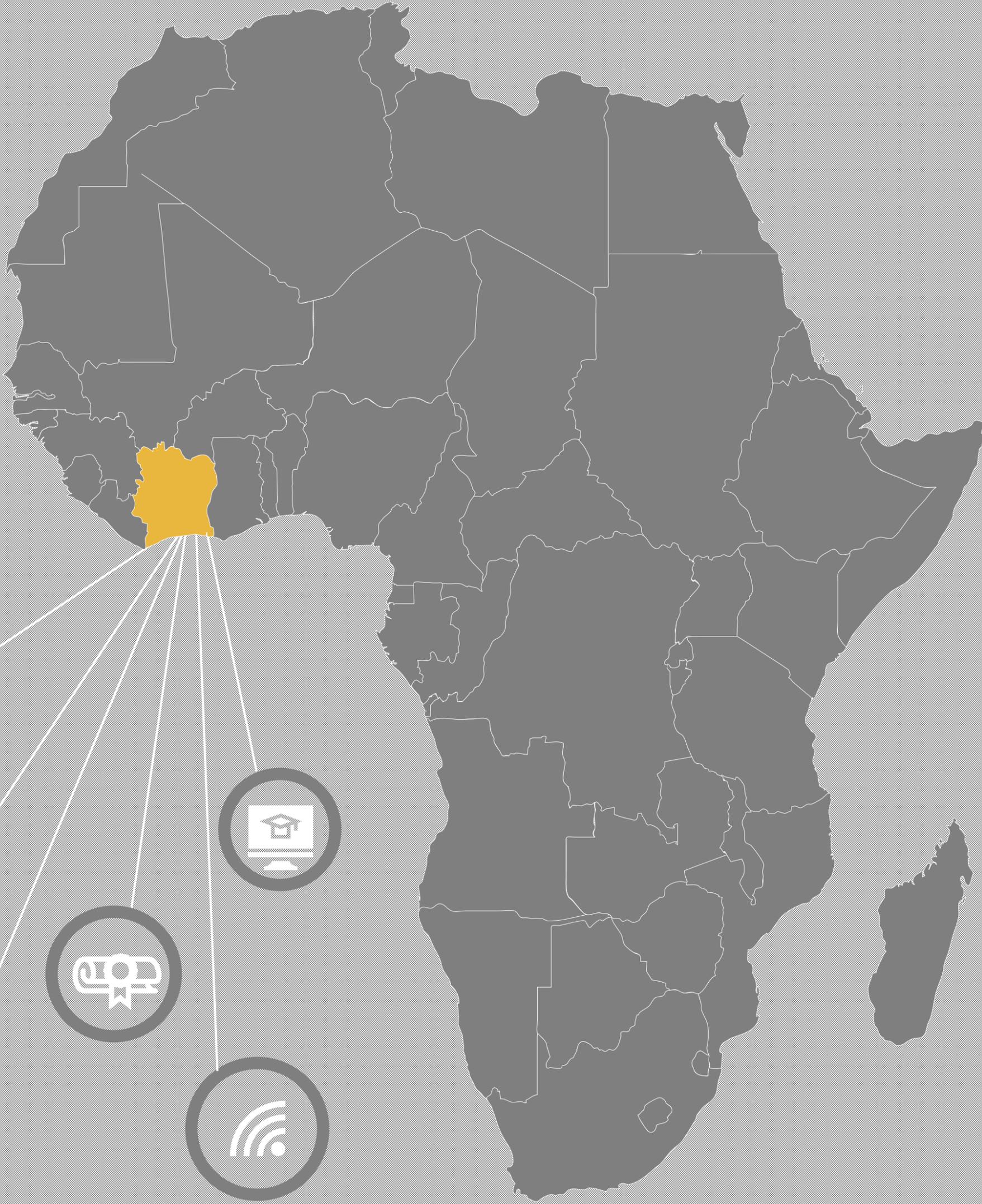
There are substantial inequities in access to education across wealth quintiles and per student spending across sub-sectors. Data from the seventh round of the Ghana Living Standards Survey (GLSS7) indicate that in 2016/17, the JHS net enrollment rate (NER) for those from the highest income quintile is more than three times higher than that of the lowest quintile (51.9 percent compared to 16.4 percent), and at the secondary level, this difference is approximately eight times higher (40.3 percent compared to 5.5 percent). Parity indices for completion rates between those from the poorest and wealthiest income quintiles using the Ghana Demographic and Health Survey (DHS) 2014 data was 0.48 for primary, 0.37 for JHS, and 0.21 for SHS, indicating that those from low-income backgrounds were less likely to continue their education. Coupled with the fact that the Lorenz curve of public education expenditure finds that the richest 10 percent receive as much expenditure as the poorest 45 percent or 6.2 times the amount the poorest receive, there are substantial equity implications of current sub-sector allocations. Education expenditure data from 2015 showed that unit costs increase substantially as the education level increases. The ratio of per-student spending between primary and tertiary increased significantly from 1:8.5 in 2014 to 1:11.6 in 2015. This has implications on the distributional equity of education spending since those from the highest income quintiles are more likely to access higher levels of education.

EDTECH ECOSYSTEM GAPS

Elements	Components	Available	Rating	Comment
Infrastructure	Individuals have personal devices and mobile services at home and in their communities.	Yes	3	Mobile phone penetration rate in Ghana is at a 100% according to the Ministry of communication. KaiOS is tech company that is making it easy for anyone to access the internet using feature phones.
	There is a universal access to internet throughout the population through wireless, wired or other means.	No	2	There is not universal access to the internet. Although internet coverage is growing and mobile operators are putting in structures to reduce the cost of data and mobile phones, the internet penetration rate is below 50% and there is a high level of digital illiteracy thus first-time internet users are not able to take advantage of the internet.
	There are school-specific networking infrastructure initiatives for affordable, reliable school connectivity	No	2	Schools lack the requisite resources they need. Less than 40% of schools in Ghana have access to the internet or computers to access Edtech solutions
Government Initiatives	A clear vision and strategy for Edtech from the highest level of the education system serves as a collective roadmap	Yes	3	The government rolled out an Education Strategic Plan that adequately spells the need to EdTech infrastructure in schools in order to drive learning in the country.
	Performance standards set high expectations that incentivize improved performance and legitimize Edtech content development.	Yes	2	There are high performance standards set especially as Ghana subscribes to the SDG Goals, but it has not been enough to legitimize EdTech content development. Currently the government, in collaboration with UNESCO is converting content into PDF files which is not enough to create interactive learning experiences for learners. COVID has demonstrated that Ghana does not have the capacity to roll out remote learning in the country
	Education curriculum and policy include expectations for basic literacy for all teachers and students.	Yes	3	As part of the strategic direction of education laid out in the policy, basic literacy skills of teachers and students has been sighted as one of the ways to drive up the adoption of edtech tools in the country.
	Equitable opportunity sources of funding exist for Edtech purchases and implementation support.	No	2	Compared to other tech purchases, EdTech purchases is limited. Most often that not, the government opts for foreign EdTech solutions rather than local solutions. Even with that there are very few instances. For example, the government is working with Learning Equality and World reader to roll out some education initiatives. Most of this is funded by DFID, UNESCO or USAID. There is very little patronage of local EdTech tools
Partnerships	Mutually beneficial, public and private sector partnerships that support access to, use of, and impact of EdTech products and services	No	2	Although there is great opportunity for publish private partnerships, there are not enough opportunities for local EdTech providers to participate in this. Most of the work is housed with donor agencies who have their preferred EdTech solutions that are not Ghanaian. Mobile operators also roll out their own education initiatives and do not include EdTech players; this pushes most EdTech solutions into stealth mode or die without ever being discovered because of the lack in partnerships
Non-Government Initiatives	Nongovernment coalitions and advocacy groups support quality EdTech scale up.	No	2	There is generally not a lot of this. NGOs that come into the country bring along their own tech solutions. Edify is a foreign NGO that has its own tech solution for schools in Ghana. Vodafone Foundation rolled out Instant schools with Learning Equality which is another foreign entity. Local edtech startups are not supported to deliver on some of these amazing projects
	Local and visionary leaders emerge to coalesce stakeholders around a bold common goal	Yes	3	There are local visionaries like founders of eCampus and revo that have a bold and common goal.

Ratings: 1 = Poor 2 = Fair 3 = Good 4 = Very Good 5 = Excellent

Elements	Components	Available	Rating	Comment
Investments	EdTech entrepreneurs have access to capital through appropriate channels, allowing them to survive and thrive. These channels include; accelerator programs, angel networks, venture capital, Nongovernment organization etc.	No	1	There are very little to no capital for local EdTech startups. Most of the funding sources are for fintech and agritech startups. Majority of the startups either bootstrap or work on consultancy projects to fund their EdTech activities
Market Efficiencies	There is an objective and simple way for users to select Edtech products that meet their needs.	No	2	There is not simple and clear way for users to select EdTech products. Unlike other sectors where there are easy points of collaboration, EdTech products need to acquire users on their own by leading the marketing and market education process themselves
	Businesses have a cost-efficient marketing, sales and distribution mechanism for reaching customers, whether B2B, B2C and B2G.	No	2	Marketing costs are expensive, and it is very erratic in nature. B2B marketing is somewhat easier to do since the groups are more organized but the decision-making process is long and tedious
	Communication of product effectiveness research, evaluation and user experience.	Yes	4	Most of the startups do extensive research and build it into their user experience
	Everyone that requires Edtech services has access to it.	No	1	Not everyone that requires service has access to it. In addition to not even knowing about the solution or understanding that they need such a solution, there is also limitation to internet access
	Incubator programs that nurture promising Edtech start-ups exist	No	1	Incubators and startups focus on other sectors. If Ghana had a program like Injini for EdTech startups, that worked with startups to improve their business model and opened resources to them to run an efficient model, the space would be extremely different
	Edtech startup have opportunities to improve that leadership and services.	Yes	2	There are opportunities for startups to improve their leadership, expertise and services in the market. But there are a lot of barriers to scale and deliver their services in a cost-effective way.
	Startups can afford an efficient, experienced and effective team.	No	2	It is expensive to maintain a team to run an edtech solution. The major cost is with software engineers. With organizations like Andela coming in, the cost of developers have spiked up as they want to be paid more. Most edtech startups rely on contract developers or consultants who work on a case-by-case basis
Social Media	Social Media platforms are used to market to potential EdTech users, deliver EdTech services and measure learning experience effectively	No	2	Direct and high touch marketing is the preferred marketing choice of EdTech startups. Although there is some potential in social media marketing, the market will need a couple of years for this to change. Not a lot of conversations are happening on social media as against direct sales and word-of-mouth
Learning Outcomes	Do the EdTech solution providers measure their impact on learning outcomes?	Yes	2	Only test prep companies measure their impact on users learning outcomes. This is intuitive for them because the solution they proffer is for students to pass their tests/exams, therefore, they must evaluate the performance of students against the material provided.



COUNTRY OVERVIEW

INTRODUCTION

After a decade (2002-2011) of socio-political instability marked by low economic growth, the Côte d'Ivoire economy is now making gains. GDP growth was 7.4% in 2018 and 2019 and was set to remain above 7.0% during 2020-21, assuming good rainfall and favorable terms of trade. However, due to COVID-19, GDP growth is expected to slow down to 2.7% and pick up to 8.7% in 2021.

Poverty is high in Cote d'Ivoire. In 2015, 46.3 percent of Ivoirians were living below the national poverty line. In 2017, Gross Domestic Product (GDP) per capita was US\$1,537 close to the average \$1,636 for Sub-Saharan Africa (SSA).

Following the end of the sociopolitical crisis in 2011, there has been significant improvement in the business environment and in development of the private sector, heightening the country's competitiveness. Côte d'Ivoire moved up from 168th in the 2010 World Bank Doing Business ranking to 122nd in 2019. In addition to making the business environment more attractive, the country has also improved its infrastructure. The 2016 Global Competitiveness Report ranked Côte d'Ivoire among the top ten reformers in 2015, when it moved from 115th (already up from 129th in 2011) to 99th. It is now the eighth most competitive economy in Africa. Côte d'Ivoire has considerably improved the environment for the private sector.

Despite its recent macroeconomic achievements, the country's human development and other social outcomes are still below those of most countries with comparable per capita income. In the 2018 United Nations Development Programme (UNDP) Human Development Index, Côte d'Ivoire ranked 170th of 189 countries. Average years of schooling are 7.68; whereas the regional average is 8.2. Under-5 mortality rate is 88.8 deaths per 1,000 births (2017), against the SSA average of 83.2 and the lower-middle-income average of 52.8. Ivoirian life expectancy at birth is 53.5 years (2016), compared to 58.1 in SSA and 67 in lower-middle-income countries. Côte d'Ivoire's Human Capital Index is 0.35, below the average of 0.40 in SSA.

27.4M

Population
2019

0.516

HDI
2018

\$58.7B

GDP
2019

58.74%

Of population
between 0 - 24 years

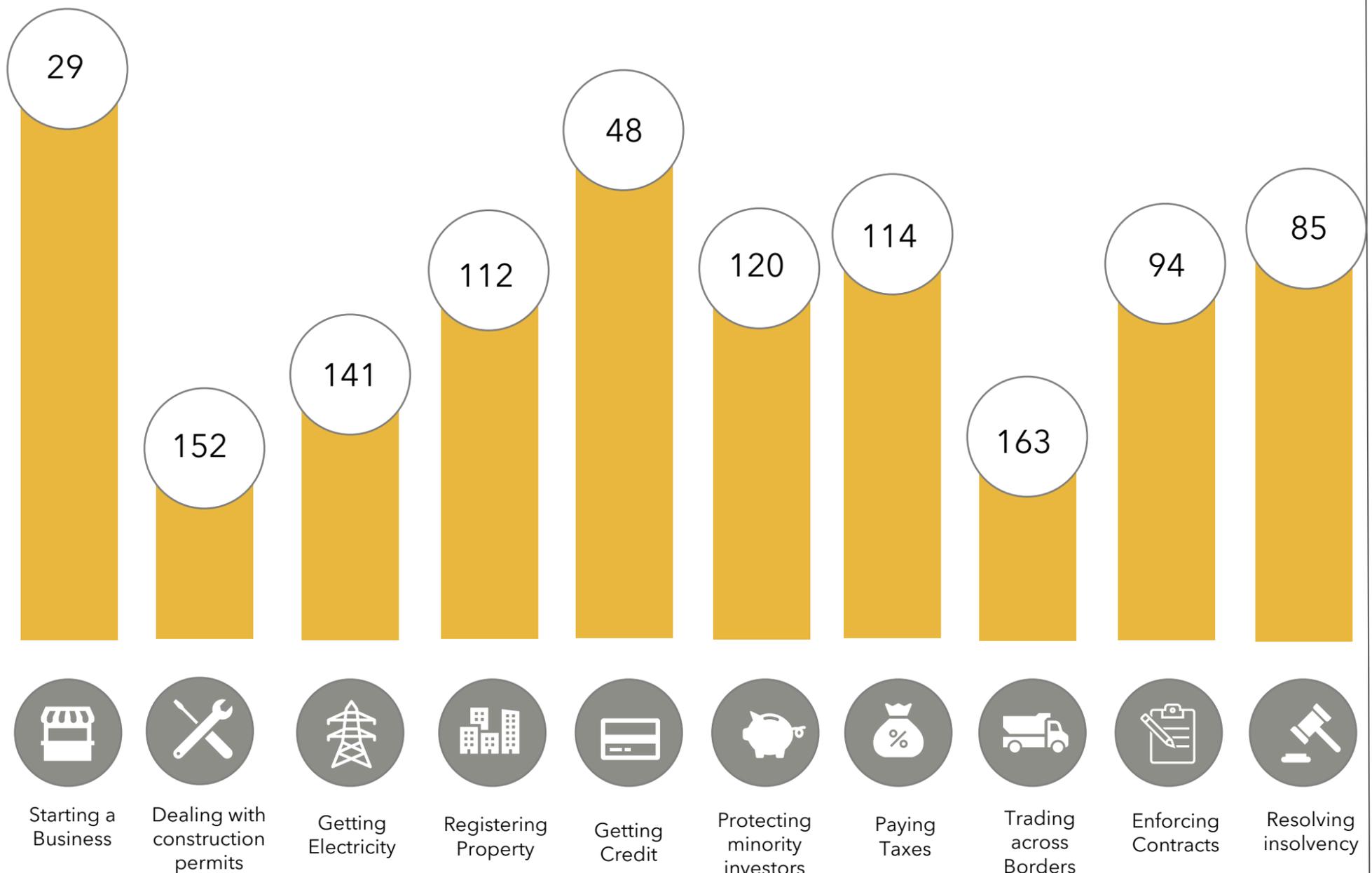
ECONOMY

For the last 5 years Cote d'Ivoire's growth rate has been among the highest in the world. Cote d'Ivoire is heavily dependent on agriculture and related activities, which engage roughly two-thirds of the population. Cote d'Ivoire is the world's largest producer and exporter of cocoa beans and a significant producer and exporter of coffee and palm oil. Consequently, the economy is highly sensitive to fluctuations in international prices for these products and to climatic conditions. Cocoa, oil, and coffee are the country's top export revenue earners, but the country has targeted agricultural processing of cocoa, cashews, mangoes, and other commodities as a high priority. Cote d'Ivoire is the largest exporter of cashew nut in the world. Mining gold and exporting electricity are growing industries outside agriculture.

COUNTRY OVERVIEW

Half of the Ivoirian workforce are employed in agriculture, and the majority are from rural areas. About 60 percent of families headed by an agriculture employee are poor. Women account for 40 percent of agricultural workers, and more than half of all the workers are unschooled. Improving the business and regulatory environment for agriculture, which accounted for one-fourth of the growth in 2017, would help boost inclusive growth. The government is working on improving market access for crops by upgrading transportation infrastructure, extending electricity provision, and developing strategies to enhance value-added from cocoa and cashews.

Global Rankings on Doing Business topics - Côte d'Ivoire





CIV

Population (July 2020)

27,481,086

Age structure

0-14 years: 38.53%
15-24 years: 20.21%
25-54 years: 34.88%
55-64 years: 3.53%
65 years and over: 2.85% (2020 est.)

Dependency Ratio

Total dependency ratio: 79.8
Youth dependency ratio: 74.6
Elderly dependency ratio: 5.2
Potential support ratio: 19.3 (2020 est.)

Median age

Total: 20.3 years
male: 20.3 years
female: 20.3 years (2020 est.)

Population growth rate

2.26% (2020 est.)

Urbanization

Urban population: 51.7% of total population (2020)
rate of urbanization: 3.38% annual rate of change (2015-20 est.)

Literacy (age 15 and over can read and write)

Total population: 47.2%
Male: 53.7%
Female: 40.5% (2018)

School life expectancy (Primary to Tertiary):

The school life expectancy is the number of years a child of school entrance age can expect to spend in the education system

Total: 10 years
Male: 11 years
Female: 9 years (2016)

EDUCATION SYSTEM

The education system in Cote d'Ivoire has a (2)-6-4-3 structure. Pre-school is not compulsory. Children enter primary school at age 6 and this level lasts six years. At the end of primary school children take an examination, called Certificat d'études primaires élémentaires, which allows them to access the second level, lower secondary school. Lower secondary school lasts four years, but after the first two years, pupils have the option to continue with the general curriculum or to select a vocational curriculum. After 4 years of general lower secondary, pupils are awarded the BEPC (Brevet d'Etudes du Premier Cycle), allowing them to enroll to general upper secondary school or to enter a teacher training institution (CAFOP). At the end of the upper secondary school, pupils pass the general BAC (Baccalaureat). Lower technical secondary education is delivered in Vocational Training Centres (Centres de Formation Professionnelles) or in Technical Education Lower Secondary Schools (Colleges d'Enseignement Techniques) and it ends with the award of the CAP (Certificat d'Aptitude Professionnelle). CAP only gives access to the technical and professional senior secondary schools, which deliver either the technical BAC, the BEP (Brevet d'Etudes Professionnel), or the BT (Brevet technique). Only students who have passed the BAC can enroll in Universities.

In September 2015, the Government adopted a law on compulsory education for children aged 6 to 16 to address the situation of the nearly 2 million children and adolescents of this age group who remain out of school and those at risk of dropping out. This policy also provided a holistic framework for the girl's education national strategy and aimed at mobilizing partners to create an enabling environment for girls' education and protection. Although the policy is enlarging opportunities for excluded children and adolescents out of school, its implementation is facing **major challenges including infrastructure, education quality, and the leveraging of resources through national budget, private sector and Donors.**

The operationalization of this law on compulsory education and the ten-year(2016-2025) Education sector plan will contribute to change in the long-term attitudes and behaviors of families, of communities and of the entire population on basic education in Cote d'Ivoire. This plan is supposed to be supported by national communication, social mobilization and a sensitization strategy but this is only on paper and has not been executed.

Although many parents wish to send their children to school, the opportunity costs of formal schooling is too high when their incomes are low. Another reason is the lack of awareness among parents about the importance of education, especially when schools are located far away from the villages and not easy to access, for young children, girls and children with disabilities. In such circumstances, parents will opt to keep them at home.

On the supply side, education outcomes are affected by lack of schools, shortage of qualified teachers, and lack of basic school facilities, such as water and separated toilets or the fact that schools are located far away or do not exist at all. Furthermore, schools are not adequately equipped to facilitate the education of children with disabilities.



THE CURRENT
STATE OF
COTE D'IVOIRE
EDTECH
ECOSYSTEM



INFRASTRUCTURE

The development of the ICT sector in Côte d'Ivoire has been led mostly by the fast expansion of telecommunication services and mobile activity. As with many frontier markets, the IT segment of the sector, which includes hardware and software development, cloud computing and networking, has lagged somewhat behind.

Although this reality is equally visible in many other West African economies, consumer and business usage in the country continue to evolve at a slower pace, hampered by the lack of sufficient human resources and the still incipient emergence of a domestic IT cluster. Progress in this segment is something the government is hoping to achieve through an aggressive infrastructure programme, new regulatory frameworks and proposals for e-commerce and e-government services.



Mobile Penetration: 131% (2020)



Internet: 47% (2020)



Electricity: 67% (2018)

Size and Scope

When telecommunication activity is included, the ICT sector becomes an important contributor to the country's economy, accounting for some 8% of Côte d'Ivoire's GDP, according to government figures. In its 2016 "Global Information Technology" report, the World Economic Forum's annual networked readiness index ranked Côte d'Ivoire 106th out of 139 countries for the development of its IT sector, a considerable improvement on its previous ranking of 115th. Although the country still fared better than some regional players like Nigeria (119th), Senegal (107th) and Gabon (125th), Côte d'Ivoire is nonetheless ranked behind neighboring Ghana, which is 102nd.

In 2016 the country's efforts to improve connectivity have started to see significant progress. The total number of connections in the country reached 7.6m in the third quarter of 2016, according to figures from the Telecommunications/ICT Regulation Authority of Côte d'Ivoire (Autorité de Regulation des Telecommunications/TIC de Côte d'Ivoire, ARTCI). Sector authorities hope that by 2020 some 90% of the population will have internet access and that 50% of Ivorians will utilize a high-speed broadband connection. Unfortunately, this is not the case.

In 2017, the political and regulatory environment was ranked 51th, while the level of business usage and governmental usage of IT reached the 65th and 80th positions, respectively, underlining the positive results from government efforts to align the sector with the country's economic expansion.

One of the key challenges confronting the sector and a common problem throughout the region is the affordability of IT access, for which Côte d'Ivoire was ranked 127th. In terms of overall IT skills, the country was in the 123rd position, while for infrastructure and digital content it was ranked 110th. These segments are also considered important barriers to the sector's expansion.

GOVERNMENT INITIATIVES

Fostering the growth of startups is a key government strategy. Through the Ministry of Trade, Handicrafts and Promotion of SMEs the government supports tech startups with a national incubator: Dream Factory - Dream Factory is the first national incubator of Côte d'Ivoire initiated by the government and is intended to spread all over the country. The incubator provides support to startups from various industries.

The activity of Dream Factory is established around 3 strategic prongs:

- First, development of incubation and acceleration programs in traditional sectors of the economy and on innovative technologies such as Fintech, Smart city, EdTech, E-health .
- Second, organize training sessions with the goal of building advanced technologies.
- Third, build co-working spaces for collaboration.

The process of joining the incubator is through a call for projects, which leads to an assessment of business models and then the identification of selected start-ups. The different stages of incubation are the pre-incubation which lasts 3 to 6 months; incubation which will see the implementation of support programs (6 to 24 months) and acceleration (3 to 6 months)

There is no public information on successful startups from this incubator and the amount of funding provided.

Another important government initiative is the Fondation Jeunesse Numérique. The organization mission is to:

- Raise awareness among Ivorian youth about digital entrepreneurship.
- Identify young people with innovative projects.
- Support selected young entrepreneurs (training, coaching, provision of workspaces, mentoring, strategic relationships, help in finding funding).
- Contribute to the consolidation and improvement of the support ecosystem for startups in Côte d'Ivoire.

GOVERNMENT INITIATIVES

The government is also promoting two EdTech products across the country. First is “Mon école à la maison” and second one is “Université virtuelle” (virtual university). Mon école à la maison is part of the COVID-19 government response program intended for primary and secondary school students. It is an online platform which brings together the different curriculum the students' study in class so that even if they are not in school, they can learn from home.

Second is Université Virtuel, a virtual university where students take classes online. Their target audience are recent high school graduates and adults who don't have a university degree.

Apart from these initiatives, the government does not have a clear EdTech strategy for the country.

COVID-19 Government Response

The government created national committees for pedagogical continuity at the national level and the constitution of working groups at the sub-national level bringing together all the education and training sub-sectors

The Ministry of Education, Technical and Professional Training broadcasts courses using its own website, social media channels, and on national television and radio from Monday to Friday, according to set time slots.

The ongoing experience of learners from Bouaké in Cote d'Ivoire, who follow the scheduled national education programs broadcast on small TV screens, brings to the fore the challenge with learning national television. Although praised by the learners and their respective parents, these courses on television are considered too fast to be assimilated. To overcome this difficulty, students are sometimes forced to record some of the broadcasted lessons on their mobile phones to listen or watch again later for a better understanding. The learners also find it difficult to pose questions to the lesson presenters (educators) and are sometimes forced to ask their parents for explanations, with some aspects not obvious even for literate parents and completely impossible for those who have never set foot in a classroom. The learners who do not have televisions or mobile phones with internet access are further disadvantaged.

GOVERNMENT INITIATIVES

The Relationship Between EdTech Companies And Ivorian Government

While landscaping this ecosystem, we set out to understand the dynamics in the relationship between EdTech companies and the Ivorian Ministry of Education.

Education in Cote d'Ivoire is highly regulated by the government. This means, most, if not all EdTech companies in Cote d'Ivoire have engaged with the Government at some point in their bid to drive change in the Education Sector. We spoke to 5 EdTech companies. Highlighted below are key points from our discussion with them.

- **Unending Sales Cycle:** Two of the startups we spoke to, said, dealing with the government is an unending sales cycle. "We give them proposals and don't get any concrete feedback despite repeat calls and follow-ups. We always get a vague response like; the technical team will get back to you" This is the same response they get on proposals requested for by the government herself. Therefore, they have never closed a deal with the Ministry of Education. Additionally, school strikes contributes to the unending sales cycle. One of startups said they were working on digitizing learning contents produced by university lecturers in public universities. However, each time they make progress in the sales process, a school strikes happens, and discussions start from beginning again. Eventually, they gave up on the project.
- **Lack of recognition:** Two of the startups said, despite their good relationship with the Ministry of Education and the Ministry's understanding of their capabilities, the Ministry will rather engage international companies to provide EdTech services for Government sponsored education programmes. Both startups stated that, during the COVID-19 crisis, there were a lot of international organizations that wanted to support access to education for children in Cote d'Ivoire. Education service providers, operating outside Cote d'Ivoire were brought in to support these organizations. However, there are EdTech companies in Cote d'Ivoire capable of supporting these international organizations. One of the start ups said, "The Government should insist on using the services of Ivorian EdTech companies as the first port of call for government and international organization-sponsored education programmes."
- **Incompetent middle managers:** Two of the startup stated that, while they had good contacts in the highest hierarchy of the Ministry of Higher Education, the strong chain of command at the Ministry meant that they still needed to go through the middle level managers. However, these managers are known to be difficult and can block the execution of plans. One of the startups stated that "these managers are not motivated to drive change but keep the status quo".

GOVERNMENT INITIATIVES

- **Bureaucracy:** A startups stated that, “the Ivorian Ministry of Education is characterized by bureaucracy, so it is important to have a contact person in the ministry who has leverage and can advocate on your behalf”. They added, “while the Ministry might be enthusiastic about new education ideas, it takes time to see real progress.”
- **Support:** A startup shared that, the department in the Ministry of Education, that gives permission to businesses to showcase their education products to schools are helpful if they believe the product will help develop the kids. However, this process often takes time. They added that some of the administrative departments are faster than others and have learnt to work more with the ones that are more responsive while following up with the other departments.

Final Thoughts

Highlighted below are the startups concluding thoughts.

- “To be successful in dealing with the Ministry, it is important to know the decision makers in the Education space and deal with them directly.”
- “Allocating a significant amount of time for stakeholder’s management is key when working with the Ministry of Education.”
- “For government relationship with EdTech companies to improve, product and services of Startups that have been approved by the Ministry should be given a certificate, a note or put on a list so they can get recognition for their work.”

PARTNERSHIPS INVESTMENTS

With funding received by local tech start-ups in 2019 according to VC firm Partech, Cote d'Ivoire remains a nascent tech ecosystem only now entering the top 20 African markets in terms of funding.

The number of support organizations local start-ups can leverage is increasing . While there were only 5 active tech hubs in Cote d'Ivoire back in 2016, our 2020 mapping of the ecosystem shows that there are now at least 17 accelerators, incubators and co-working spaces active in the country. Secondly, although not all local start-ups have the visibility(network and popularity) to attract international venture capital investors, the talents, innovative solutions and opportunities to invest in local start-ups are there for those ready to come meet them and understand the ecosystem.

PRIVATE INVESTMENTS

Private sector support also contributes to enhancing the EdTech sector over the coming years. Ivorian firm Investisseurs et Partenaires announced in November 2017 a partnership with the Switzerland-based Jacobs Foundation, geared towards youth development, to establish the Education Impact Fund (EIF) in Côte d'Ivoire.

As at the third quarter of 2019, EIF had invested in 6 Ivorian companies including:

- Vallesse - A publishing house.
- Etudesk - An Ed-tech company providing online courses and an LMS.
- Studio K - An animation studio creating education cartoons for children.
- IMGH - A hospitality, catering management school located in a popular neighborhood of Abidjan (Yopougon).
- Coccinelle - A preschool (ECD - from 3 to 6 years old) located in a residential area of Abidjan (Bingerville).
- Michèle Yakice school - A training institute for hairdressers and seamstresses.



COTE D'IVOIRE
EDTECH
ECOSYSTEM
STAKEHOLDERS

EDTECH PRODUCT CATEGORIZATION

Learning Management Systems: The EdTech companies in this category primarily develop and provide software solutions that improve parent-teacher-student communications, monitor student performance and progress, track assignments, share educational content, help teacher auto-generate reports and provide facilities for collaboration amongst teachers and students.

Career Development: EdTech companies that provide enterprises and individuals with educational content for professional advancement, including financial training.

Early Childhood Education: Early childhood education startups focus on creating educational games and educational toys for children, including interactive storybooks and educational mobile apps. They focus on providing game based and blended learning to provide playful experiences to early childhood learners.

Language Learning: Companies in this category facilitate language learning for non-native speakers either by providing pre-developed content or by connecting the learners with native speakers. Such platforms cater to learners across the age spectrum, whether they are in school or adults looking to develop new language skills.

Tech Learning: These platforms provide combination of offline and online learning solutions that cater specifically to teaching programming and other engineering disciplines.

Study Tools: Companies that provide study tools that use technology to solidify and/or expedite the learning process.

Course Materials: Companies in this category operate online marketplaces for textbooks and other course materials.

School Management: Companies in this category provide software-based solutions to simplify the administrative tasks of schools, such as digitizing transcripts, school fee management and online payments, facilitating school-wide communication, online examination and assignments and admissions support, online registration and application tracking.

Next-Gen School: Companies that offer alternatives to traditional education experiences.

Test Prep: Companies that focus on providing solutions to students preparing for standardized tests such as the SAT, GRE, and GMAT.

Classroom Engagement: Classroom technology and tools help teachers to implement interactive teaching methods and make the lessons more engaging. Such tools can improve thinking skills while improving student engagement and learning retention. Such products may offer features such as live lectures, discussion forums, cloud-based student response tools and other classroom communication tools

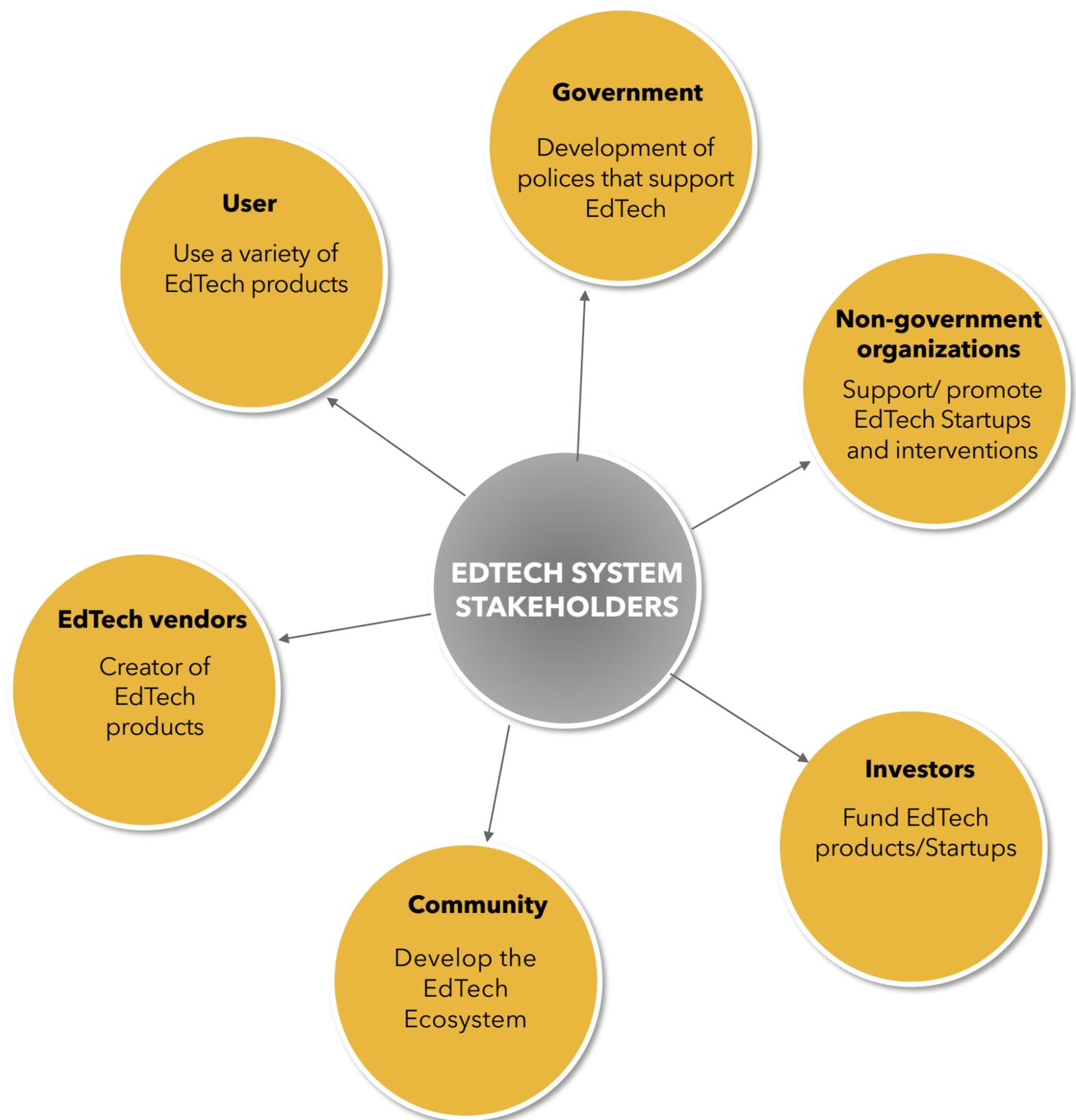
Online to Offline: These products offer platforms for learners or students to find face-to-face or offline tutoring, classes or workshops.

Differentiated Instruction: Providing different students with different avenues to learning in the same classroom (or same application) in terms of acquiring content; processing, constructing, or making sense of ideas; and developing teaching materials and assessment measures so that all students within a classroom (using the same platform) can learn effectively, regardless of differences in ability.

STAKEHOLDERS

The Edtech system stakeholders are:

- Edtech vendors - Start-ups and companies
- User - Educational Institutions, Students, companies
- Investors:
- Community
- Government
- Nongovernment organizations



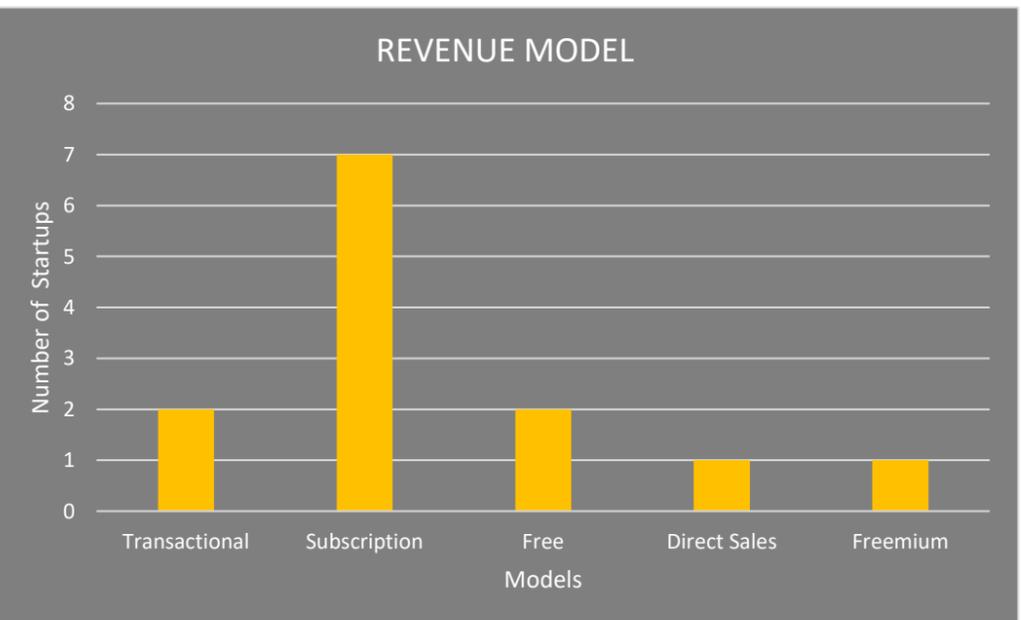
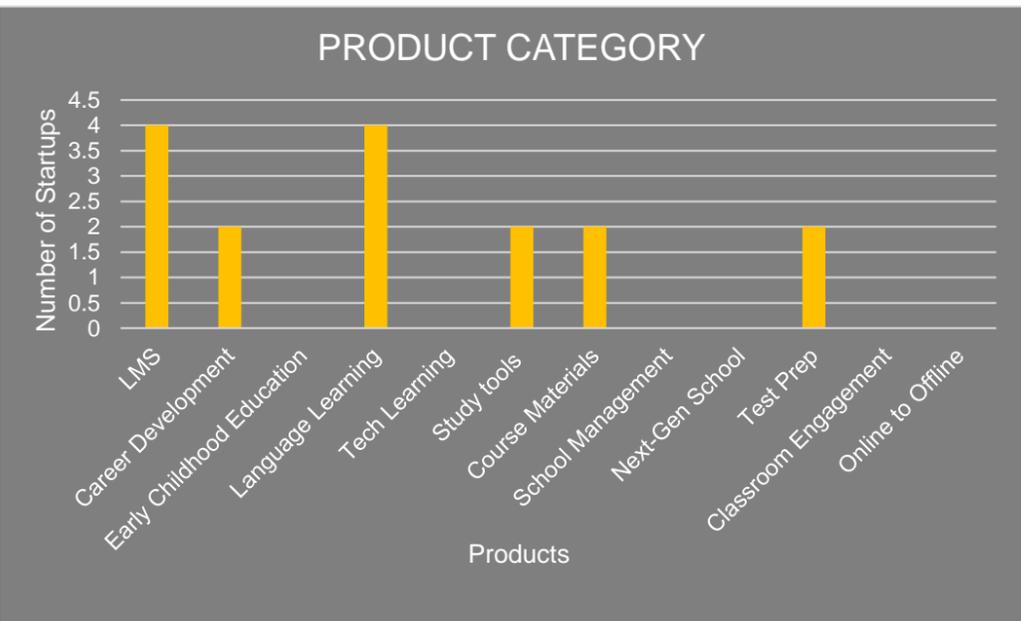
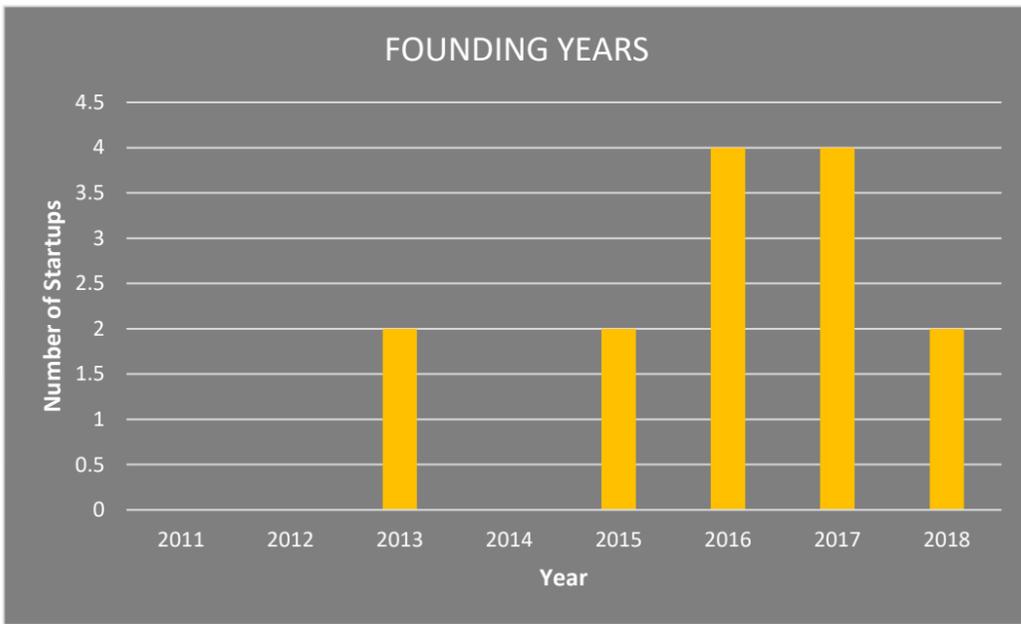
THE STARTUPS



THE STARTUPS



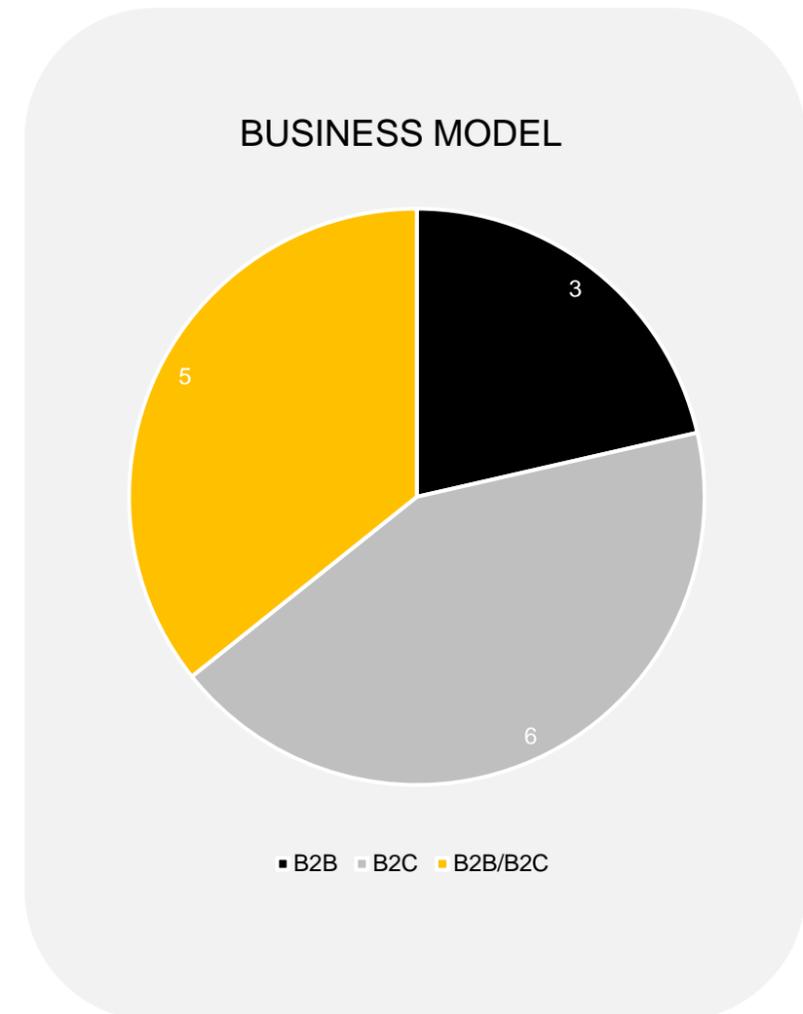
STARTUPS SNAPSHOT



Investors

Identified - 6 **Not Available - 8**

- JACOBS FOUNDATION
Our Promise to Youth
- MTN
- seedstars
- FasterCapital
- COMOÉ CAPITAL
PARTENAIRE D'IIIP
- THE TONY ELUMELU FOUNDATION



THE STARTUPS - CIV



Study Tools, Test Prep & Course Materials



Founder:	Ange Armel Kévin Koffi	Founded:	2013
Other Countries:	N/A	Product Category:	Study tools/Testprep
Headquarters:	Ivory Coast	Business model:	B2C
Investor:	Fondation MTN Côte d'Ivoire	Revenue model:	Free

Description: Succès-Assuré offers a learning platform for primary school and secondary school students where they can find courses and past exam subjects. Content available on the platform is free thanks to a partnership with MTN Foundation and the Magic System Foundation



Founder:	N/A	Founded:	2017
Other Countries:	N/A	Product Category:	Test Prep
Headquarters:	Ivory Coast	Business model:	B2C
Investor:	N/A	Revenue model:	Subscription model

Description: BacPrep is an exam preparation platform with offers training to final year high school students to get prepared to the final exam. The startup was founded in 2017 and is present in Côte d'Ivoire. They charge 15.000 XOF/month for the service.



Founder:	Kago Kagichiri and Toni Maraviglia	Founded:	2011/2018(CI)
Other Countries:	Ghana, Ivory Coast(CI)	Product Category:	Study Tools/Course materials
Headquarters:	Kenya	Business model:	B2C
Investor:	Jacobs Foundation, Sorenson, Safaricom, and others	Revenue model:	Subscription model: Daily, weekly and monthly subscription plans

Description: Eneza Education runs a subscription-based service providing SMS-based educational content (including lessons and assessments) for primary and secondary school students on any mobile phone. Eneza CI was founded in 2018.



Founder:	Thierry N'Doufou	Founded:	2013
Other Countries:	Senegal, Niger, Morocco	Product Category:	Course Material
Headquarters:	Ivory Coast	Business model:	B2B / B2C
Investor:	N/A	Revenue model:	Direct sales

Description: Qelasy is an educational tablet offered by Siregex, an Ivorian EdTech startup. The tablet contains digitized government approved schoolbooks for primary and secondary school students. Thierry got the idea after seeing local school kids suffering under the weight of their backpacks full of textbooks. A Qelasy tablet cost about 274 euros.



Language Learning



Founder:	N/A	Founded:	2018
Other Countries:	N/A	Product Category:	Language Learning
Headquarters:	Ivory Coast	Business model:	B2C
Investor:	N/A	Revenue model:	N/A

Description: ETHNOlab is a startup at the idea stage. They plan to launch a mobile language learning app.



Founder:	Lamine Azinakou	Founded:	2017
Other Countries:	N/A	Product Category:	Language Learning
Headquarters:	Ivory Coast	Business model:	B2C
Investor:	N/A	Revenue model:	Free

Description: Lulla is a free mobile African language learning application. It was created to promote and protect African languages and cultures.

THE STARTUPS - CIV



Founder: Raissa Yao **Founded:** 2017
Other Countries: No **Product Category:** Language Learning
Headquarters: Ivory Coast **Business model:** B2B / B2C
Investor: Seedstars **Revenue model:** Transactional

Description: They offer a language learning product giving both individuals and companies the opportunity to learn English and French online through the video conference app, Zoom. The courses price range from 40,000 XOF to 80,000 XOF for individuals but vary per company.



Founder: Raissa Banhoro **Founded:** 2016
Other Countries: N/A **Product Category:** Language Learning
Headquarters: Ivory Coast **Business model:** B2C
Investor: N/A **Revenue model:** Freemium

Description: Lucie is a language learning app primarily targeted at illiterate women. It enables people to learn French language with a smartphone. In 2017, Raissa won the "RFI Challenge App Africa" prize for the app and was awarded 15,000 euros.



Learning Management System



Founder: Lamine Barro **Founded:** 2016
Other Countries: N/A **Product Category:** LMS
Headquarters: Ivory Coast **Business model:** B2B
Investor: Comoe' Capital **Revenue model:** Subscription model

Description: Etudesk is an online learning platform that allows academic institutions and businesses to create their training programs online



Founder: Adrien Bouillot **Founded:** 2015
Other Countries: Ivory Coast **Product Category:** LMS
Headquarters: Ghana **Business model:** B2B
Investor: Jacobs Foundation **Revenue model:** License/Subscription/Transactional

Description: Chalkboard offers an easy to use mobile-based learning management and measurement evaluation system. The system is designed for organization whose services are tailored to underserved learners and communities. Chalkboard LMS allows organisations to make their existing content mobile-friendly. It works on all phones and without the Internet. Additionally, Chalkboard offers content digitisation and instructional design services, integration to third-party dashboards, and soon AI-Enhanced adaptive learning and auto-grading.



Founder: N/A **Founded:** 2015
Other Countries: No **Product Category:** Learning
Headquarters: Cote d'Ivoire **Business model:** B2B/B2C
Investor: N/A **Revenue model:** N/A

Description: Educas Consulting develops learning tools and online tutorials for educational and professional environments, adapting service offering to different learning needs.



Founder: David Yao **Founded:** 2016
Other Countries: N/A **Product Category:** LMS
Headquarters: Ivory Coast **Business model:** B2B/B2C
Investor: N/A **Revenue model:** Subscription

Description: Oschool is an online training platform focused on digital, business and photography courses. It offers individuals the opportunity to pursue diplomas and certificates 100% online, at universities across Africa.

THE STARTUPS - CIV



Career Development



Founder:	Henri Brou	Founded:	2017
Other Countries:	N/A	Product Category:	Career Development
Headquarters:	Ivory Coast	Business model:	B2B/B2C
Investor:	N/A	Revenue model:	Subscription

Description: Yefa aims to bring together all opportunities available to young people to one platform to optimize the research process. Opportunities including Job placements and study opportunities. The startup benefited from a grant from the Tony Elumelu foundation. The product is yet to realise its potential.



Founder:	Foua Bi Touvolly	Founded:	2016
Other Countries:	N/A	Product Category:	Career Development
Headquarters:	Ivory Coast	Business model:	B2B / B2C
Investor:	Faster Capital	Revenue model:	Subscription model

Description: Kaléjob is a social platform for publishing and sharing of job offers, courses and online support. Candidates can search for full time as well as part time (odd) jobs and apply through SMS. Additionally, they help candidates with resume and cover letter writing. They offer three subscription plans: Bronze (103 XOF/Week), Gold (155 XOF/Week) & Diamond (295 XOF/Week).

Non-EdTech companies that provide EdTech products.

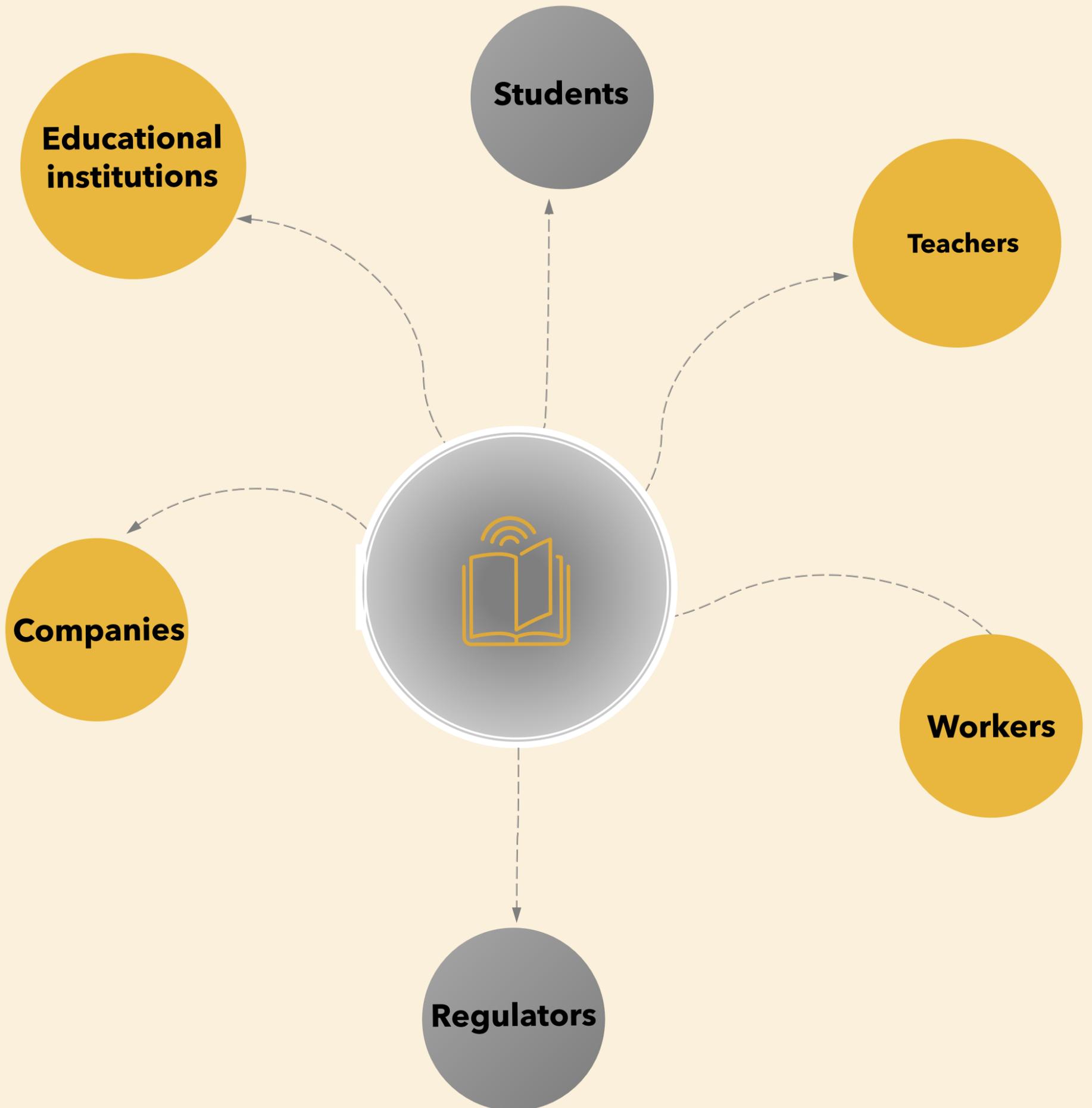
While mapping out the space. It was realized that some non-EdTech companies offer EdTech products as part of their product offering. We identified two in the Ivorian Space.

- **Agence Merci Sarl:** A marketing and communication company founded by Christelle Hien-Kouame. One of the products they offered was Prenezlesfeuilles. Prenezlesfeuilles was created to offer students a revision toolbox, a digital collection of homework and exams from the best schools in Côte d'Ivoire. In August 2019, Eneza Education acquired Prenezlesfeuilles.
- **Global Business Link Group:** Founded in 2011, the company provides trade, consulting, finance, technology, and education services to businesses. They have and use a Learning Management System(LMS) to train corporate workers.

THE USERS



> Users of EdTech products services



POTENTIAL MARKET SIZE

The calculation of the market size is based on expected penetration rate of EdTech products and the effective demand of the Ivorian population. Expected penetration rate should be at least 70% because education is a universal good. However, due to how nascent the Ivorian EdTech ecosystem is, we worked with a penetration rate of 60%.

The effective demand is based on income bracket: **Students** - \$2 for urban users and \$1 for rural users. The price(\$1) is based on Eneza's monthly subscription. Eneza is an EdTech company focused on rural communities. We assume urban users can pay double this. A premium.

Career development - \$1 for both urban and rural dwellers. This is based on the assumption that NGO's/Government will pay for career development trainings for them to secure employment. Organization capacity - Based on a minimum of \$4.99 (cheapest course available on Udemy) and \$1 for rural based.

Educational Institutions - \$3 per student per term for Urban dwellers while rural will be at a 50% discount. Ikolilu, a school management company in Ghana charges her clients slightly above \$3. We used Ikolilu as a benchmark for Cote d'Ivoire because we did not identify any school management EdTech company in the country.

	Pupils		Students		Career development	Organizations - Capacity development	Educational Institutions
Key driver of market size	No of Pre-Primary Pupils	No of Primary Pupils	No of Secondary Students	No. of Tertiary Students	Unemployed population	Employed population	No of educational institutions
Market Size	2,196,117.00	3,991,298.00	4,078,046.00	2,332,784.00	3,747,595.94	4,789,069.07	22,709.00
Penetration rate	60%	60%	60%	60%	60%	60%	60%
Addressable market	1,317,670.20	2,394,778.80	2,446,827.60	1,399,670.40	2,248,557.56	2,873,441.44	13,625.40
Rural distribution	49%	49%	49%	49%	49%	49%	49%
Urban distribution	51%	51%	51%	51%	51%	51%	51%
Rural market size	645,658.40	1,173,441.61	1,198,945.52	685,838.50	1,101,793.20	1,407,986.31	6,676.45
Urban market size	672,011.80	1,221,337.19	1,247,882.08	713,831.90	1,146,764.36	1,465,455.13	6,948.95
No. Rural students							554.77
No. Urban students							554.77
Rural - Target price/Month	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.50
Urban - Target price/Month	\$2.00	\$2.00	\$2.00	\$2.00	\$1.00	\$4.99	\$3.00
No. of subscription/Year	12	12	12	12	6	1	3
Rural Market value	\$7,747,900.78	\$14,081,299.34	\$14,387,346.29	\$8,230,061.95	\$6,610,759.23	\$1,407,986.31	\$16,667,478.14
Urban Market Value	\$16,128,283.25	\$29,312,092.51	\$29,949,169.82	\$17,131,965.70	\$6,880,586.14	\$7,312,621.12	\$34,695,566.73
Total Value	\$23,876,184.02	\$43,393,391.86	\$44,336,516.11	\$25,362,027.65	\$13,491,345.37	\$8,720,607.42	\$51,363,044.87

Potential Market Value \$210,543,117.29

Please note:

Educational Institution means pre-primary to university, including vocational and technical training.

THE COMMUNITY



THE COMMUNITY

Technology startups specifically, are rapidly increasing in number, with many “tech hubs”, incubators, accelerators and innovation hubs emerging in the country and mainly in Abidjan, the capital city. A couple of these hubs that have been established in the past 4 years are CO.LAB, Impact Hub (previously i-hub) and Seedspace Abidjan, which both serve as startup communities, where technology entrepreneurs meet for co-working, innovating, getting access to seed funding, product testing and prototyping.

A hub is per definition a physical space that plays a “facilitator” role as they facilitate access to three critical resources for startups: skills, funding and network. They exist in the form of incubators, accelerators, co-working spaces, hacker spaces and other innovation spaces.

In relation to their impact on start-ups, hubs are hybrid organizations. They build relationships, networks, enhance capabilities and serve as intermediaries.

Hubs as hybrid organizations: Hubs serve multiple purposes, assume many forms, transcend boundaries and combine the institutional norms associated with different structures. Key elements of a hub reflect their hybrid nature, such as core purpose, business models, funding and partnerships. For example, hubs aim to have a social impact as they aspire to be (and create) profitable businesses. They also have assorted functions, offering activities as diverse as providing co-working space, hosting events, offering trainings and incubating start-ups. Hubs assume different forms - incubators, accelerators, non-governmental organizations (NGOs) and social enterprises - if/when these models align with their goals.

Hubs as network and relationship facilitators: As hub members, entrepreneurs can find one another and join forces to exploit opportunities and overcome challenges. Hubs also help entrepreneurs connect to stakeholders outside the hub, such as investors and educational institutions. Finally, hubs help stimulate innovation by creating proximity, which leads to collaboration, as well as social proximity, which gives entrepreneurs a sense of shared identity that encourages knowledge exchange and learning.

Hubs as capacity builders: Hubs offer formal training to start-ups to build skills and enable managers to exchange expertise. They help to cultivate core business skills, technical skills and ‘soft’ skills related to management and leadership.

Hubs as intermediaries: Intermediaries are institutions that bridge system gaps or institutional voids. Examples include:

- Product market voids affect the relationships of firms with their suppliers and customers.
- Labour market voids make it difficult for companies to find qualified employees and partners.
- Capital market voids characterize the lack of financial capital that start-ups need to grow.
- Institutional voids indicate the degree to which the basic enabling environment conducive to supporting growing businesses is absent.

Hubs address these gaps by building networks, increasing the pool of human capital, creating trust to encourage business dealings and serving as the foundations of ecosystem growth.

Tech & EdTech Community Overview

Community

Code School

Co-working spaces

Incubation/Pre-acceleration/Training

Events & Conferences

Media & Blogs

She is the code (2015)



10.000 Codeurs (2015)



Simplon (2018)



Coding for Employment (2019)



DYNEXAFRICA (2018)

Jokkolabs (2014)



OVillage (2012)



Colab (2016)



Seedspace (2018)



Vitib (2009)



Orange Corners (2018)



THE ANDREW YOUNG CENTER FOR ENTREPRENEURSHIP - **MakerSpace**



Inovis (2014)



AND Factory (2015)



Founder Institute (2016)



Incub'Ivoir (2016)



Y'ello Startup(MTN) (2017)



Seedtars academy (2016)



MEST (2019)



Edith Brou Island
EDITH BROU ISLAND

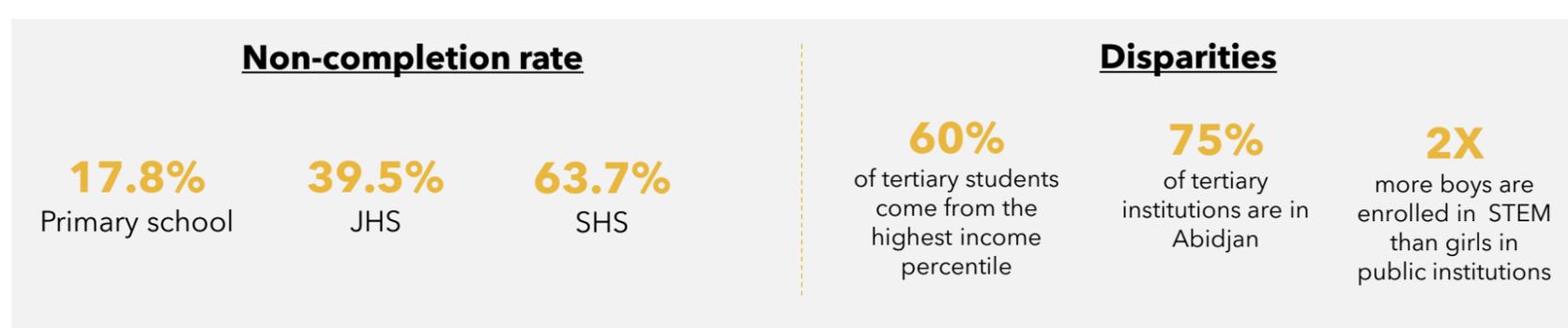
Three pencils are arranged diagonally across the page. The top pencil is on the left, the middle one is in the center, and the bottom one is on the right. They are all light-colored with silver-colored eraser bands. A large white circle is positioned in the bottom right corner, containing the text.

COTE D'IVOIRE
EDTECH
ECOSYSTEM
GAPS

GAPS IN THE EDUCATION SYSTEM

ACCESS AND EQUITY

- **The percentage of out-of-school children of primary school age has declined significantly, from 1,136,993, (31%) in 2013 to 241,575 (6%) in 2018 (UNESCO).** Despite these improvements to access, the rural communities are left behind as out of school children are mostly concentrated among the lower income population in rural areas in the North and South West regions.



- **Completion rates in primary and secondary education remain challenging:** 17.8% of pupils did not complete the primary level in 2019/20, while 39.5% did not complete lower secondary education and 63.7% did not complete upper secondary (DSPS). Weak secondary school completion rates can largely be explained by notable geographic gaps in the public-school network. "Côte d'Ivoire is greatly lacking educational institutions at the secondary level, which covers education for 12- to 16-year-olds and 16- to 18-year-olds," Kabran Assoumou, Cabinet director of the MENETFP, Told Oxford Business Group, "For children to continue their education after primary school, they need to go to the city. But many are too young to survive on their own and end up having to return to their villages without finishing their studies
- **Year repeat rates remain quite high:** national averages were 9.45% (2019/20) in primary school and 11.9% in secondary schools in 2017/18, but the proportion of repeaters is far higher for the last grade of lower secondary, where it is 39% (DSPS, 2018). Repeat rates in the public sector are on average twice as high as in the private sector in general education. (MENET-FP et al. 2017).
- **Gender disparity in secondary schools;** In private and public schools, female pupils as a percentage of total pupils at secondary level is 43%(World Bank, 2018). Gender parity index for gross enrollment ratio in secondary education is 0.77(2018). That is the ratio of girls to boys enrolled at secondary level in public and private schools.

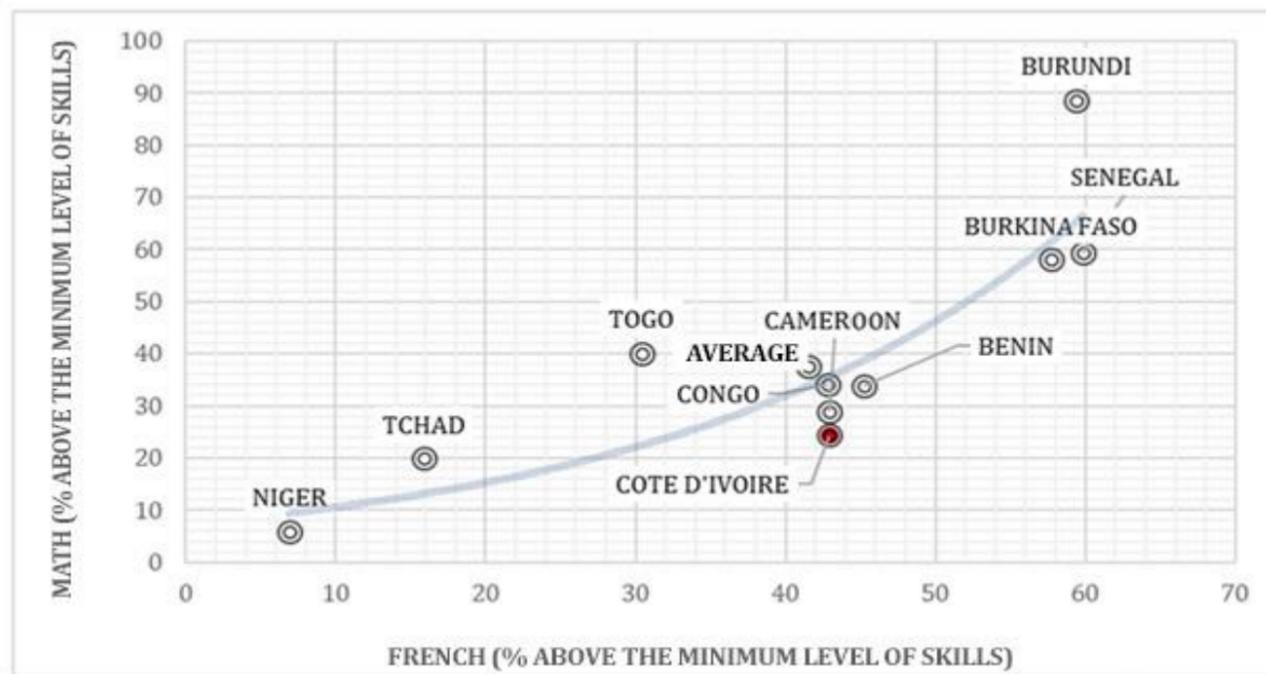
GAPS IN THE EDUCATION SYSTEM

- **Participation in tertiary education in Côte d'Ivoire is not only low but there are significant disparities by gender, income and regions.** Between 2005 and 2016 the number of enrollments per 100,000 inhabitants dropped from 808 to 774, pushing down the gross tertiary enrollment rate from 9.3 to 8.3 percent. In SSA, Côte d'Ivoire's tertiary education statistics are about average (the range of the number of enrollments per 100,000 inhabitants is about 700 to 900), but they are below the middle-income country average (about 3,500). Moreover, the gender and income inequalities seen among primary and secondary students are exacerbated in higher education. At 10.1 percent, male enrollment is significantly higher than female, which is just 6.7 percent. The proportion of girls ranges from 33 percent in public universities to 51.4 percent in private. As for income-based disparities, 2015 data shows tertiary enrollment of just 7 percent for the poorest students versus 41 percent for the richest. Between 2008 and 2015, tertiary enrollment rose by 2.4 percent for the former group and 2.3 percent for the latter, which meant virtually no change in the access gap. An estimated 60 percent of the students come from the highest income quintile. In terms of regional disparities, tertiary education is highly concentrated geographically: 218 of the 288 tertiary institutions are in Abidjan, with far fewer options for students in other regions.
- **Gender disparities are clear in several aspects of tertiary education.** Girls seem to have better access to tertiary education than boys if they could survive and complete the secondary education. About 76 percent of girls completing secondary education continue to the tertiary education, in comparison to 65 percent of boys. Hence, the low enrollment of girls in tertiary education is a combined result of their low enrollment and completion of secondary education and higher drop-outs in tertiary. The probability for girls to drop out in tertiary education is 8 percentage points higher than for boys. There are also disparities in the fields of study: in public institutions, only 14 percent of girls are enrolled in sciences, technology, engineering and mathematics (STEM) against 29 percent of boys.

QUALITY AND RELEVANCE

Low learning Outcomes: Although a child who starts school at age 5 can expect to complete 9.6 years of school by his/her 18th birthday, factoring in what children learn and holidays, expected years of school is only 4.21 years. As if this wasn't worrisome enough, studies show that this gap has widened over time and that the quality of education has deteriorated. At the end of the primary school cycle, less than half of Ivorian students have the required reading or mathematics skills, as evidenced in the graph in the next page

GAPS IN THE EDUCATION SYSTEM



This graph presents a regional comparison of the acquisition of mathematics and French skills at the end of the primary school cycle. (Source: World Bank, Côte d'Ivoire: Employment Benchmark, 2016.)

- **Pupils who attend public school often do so in less-than-ideal circumstances.** Data from the World Bank put the average teacher-to-pupil ratio for primary school at 1:42 in 2015. In 2016 39% of public primary schools had drinking water stations, 35% had canteens, 41% had working toilets and 22% had adequate hand-washing facilities. Access to primary education remains imbalanced between urban and rural areas, with the north and north-west being particularly underserved. Additional challenges to the primary education system include recurring strikes by both teachers and students over issues such as pay, benefits and grants.
- **Both the quality and relevance of tertiary education are of major concern.** Data on efficiency, quality, and relevance are fragmented or lacking, but the data that do exist paint a dismal picture. Because the academic year is still truncated for many faculties, many three-year undergraduate programs take five to six years. Based on available data, in public universities about 40 percent of students have been in the system for more than 10 years. For private institutions, one quality measure is the pass rate for the *BTS* exam, which is just 25 percent.

GAPS IN THE EDUCATION SYSTEM

- **Despite government efforts to recover from the impact of the political crisis, conditions for improving the learning environment are still not in place.** Most public universities still have a truncated academic calendar and many faculties and departments have yet to return to the regular academic year (October to June). Aligning the school calendar for all universities and departments with the official academic year is a prerequisite for the major reforms that are part of the transition to the License-Master-Doctorate system. This would require investing in labs and financing operational costs for the delivery of practical courses. The digital infrastructure is inadequate, and many institutions have no access to broadband. This undermines the quality of teaching and learning and prevents universities from ramping up research activities.
- **Research is central to the quality of a comprehensive tertiary education sector, but the scientific production of Ivoirian universities is low and of poor quality.** The country has no more than 400 scientific articles published in international journals each year, which puts Côte d'Ivoire among the least productive African nations per capita. With 8 million fewer people, Senegal produces twice the number of scientific articles. It is also worrisome to observe that the research gap between Côte d'Ivoire and its comparators has widened in recent years. In a new measure of progress in scientific production, developed by a team working for the journal Nature, Côte d'Ivoire is absent from the African scientific map.

"Côte d'Ivoire's funding for primary education at 43% of the education budget is comparatively low, especially considering the country has yet to achieve its objective of universal primary education" - World Bank

- **The high proportion of qualified lecturers suggests that quality in tertiary education could be improved by enhancing pedagogical practices and revising the content of most programs.** While finding academically qualified faculty does not appear to be a problem – 97 percent of lecturers in public universities and 77 percent in private universities have a PhD or master's degree – program content and pedagogical practices need to be modernized. Traditional lectures and rote memorization still tend to be the norm. This leaves little room for developing inquisitive minds, critical thinking, and the analytical competencies needed in today's global economy. In addition, since many courses emphasize theory rather than real-life application, graduates often finish their studies with few professional and relevant skills for the labor market needs.

GAPS IN THE EDUCATION SYSTEM

- **Current programs are not responsive to labor market demand.** Most tertiary students (78 percent) are specializing in humanities or social sciences; only 15 percent seek a STEM degree; 5.2 percent are in agricultural sciences; and just 0.6 percent are in health sciences. Reversing the current trend will require time because fewer than 3 percent of secondary students pass the Baccalauréat science and math examination.
- **Besides the low percentage of tertiary STEM programs, there is a severe disconnect between what the graduates of most tertiary institutions have learned and what the economy is demanding.** This is probably because employers are insufficiently involved in the design and revision of curricula to prepare students, especially students of humanities and the social scientists, for the job market. Similarly, university research and development (R&D) activities are rarely linked to the industry. The 2017 World Economic Forum Global Innovation Index ranks Côte d'Ivoire 86th out of 140 countries on collaboration between universities and industry—and 107th on registering new patents and licenses.

GOVERNANCE AND FINANCING

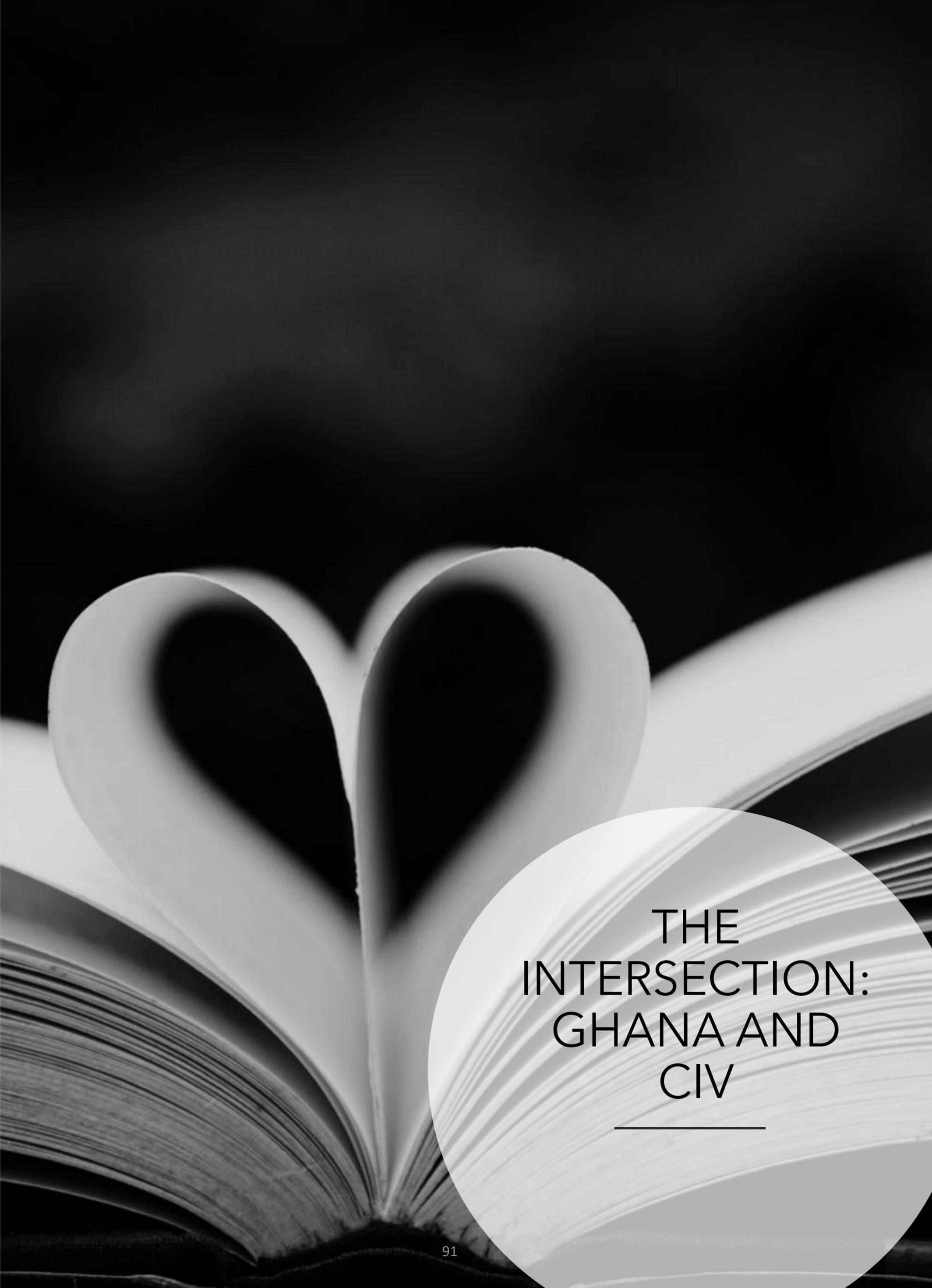
- **There is a need for more appropriate governance systems in order to improve the performance of Ivoirian tertiary education.** Public institutions have little institutional autonomy, performance-based management instruments and processes are lacking, and there are no follow-up mechanisms to monitor how well graduates are integrating into the labor market. Public universities have no control over the number of students they must enroll, the tuition fees they may set, or the use of self-generated income. As for modern management practices, the first performance-based contracts (PBCs), signed a few years ago, could not be honored because the Ministry of Higher Education and Scientific Research (the Ministry or MESRS) was unable to commit the additional resources PBCs call for.
- **The share of domestic resources devoted to higher education is above the SSA average.** Côte d'Ivoire allocates about 20 percent of its domestic resources to education, equivalent of 5 percent of GDP. Allocation to secondary and tertiary education is relatively high at 57 percent of the education budget, although they represent only 33 percent of total enrollments. Tertiary education, with only 4 percent of total enrollment, accounts for about 25 percent of the education budget. In SSA countries, the tertiary share of the education budget averages 19 percent. Thus, Côte d'Ivoire's funding for primary education at 43 percent of the education budget is comparatively low, especially considering the country has yet to achieve its objective of universal primary education. Capital spending in higher education has risen slightly in recent years to address reconstruction after the political troubles; from 2008 to 2010 it grew from 6 to 8 percent and from 2012 to 2015 from 10 to 28 percent.

EDTECH ECOSYSTEM GAPS

Elements	Components	Available	Rating	Comment
Infrastructure	Individuals have personal devices and mobile services at home and in their communities.	Yes	4	Mobile penetration rate is high in Côte d'Ivoire (131%). With a relatively good network coverage, people can easily use basic phone features such as SMS and USSD and this is a great advantage for startups which uses those channels to offer their services.
	There is a universal access to internet throughout the population through wireless, wired or other means.	No	2	Internet penetration rate is low (47%) meaning that only a few part of the population can easily access internet. Additionally, mobile data and optical fiber cost is expensive
	There are school-specific networking infrastructure initiatives for affordable, reliable school connectivity	No	2	Most of the school networking infrastructures are donations mostly from organizations such as the MTN Foundation or the Orange Foundation. These infrastructures are very few and located in schools in big cities such as Abidjan and Korhogo.
Government Initiatives	A clear vision and strategy for Edtech from the highest level of the education system serves as a collective roadmap	No	1	While the CIV government has not set a clear strategy for EdTech, The Government of Côte d'Ivoire has made digitization of education a top priority. The creation of a Virtual University, the distribution of digital health cards and vaccination records, as well as the creation of the Digital Youth Foundation to fight youth unemployment, are examples of major new ICT initiatives.
	Performance standards set high expectations that incentivize improved performance and legitimize Edtech content development.	Yes	2	There are no government policy guiding the performance of EdTech companies. Each company/startup set its performance evaluation method based on the contract they are executing. For example, Banhoro and Bora digital set performance evaluation methods for their contract with UNESCO and IRC respectively.
	Equitable opportunity sources of funding exist for Edtech purchases and implementation support.	No	1	No dedicated financing and implementation support is set for Edtech solutions by the government. Has a result of COVID-19, the government relied heavily on her platform, Mon Ecole a la maison to educate her students.
Partnerships	Mutually beneficial, public and private sector partnerships that support access to, use of, and impact of EdTech products and services	No	2	Startups, especially revenue making startups can enter partnerships with institutions such as Mobile Network Operators (MNO) which allows them to easily market their product or access 3rd party APIs they need for their product. However, the relationships are not always mutually beneficial as the MNO can take up to 45% of revenue generated by the start up through their platform.
Non-Government Initiatives	Nongovernment coalitions and advocacy groups support quality EdTech scale up.	Yes	1	Incubators like Seedstars and Investors like Jacobs foundation support EdTech development in Cote d'Ivoire.

Ratings: 1 = Poor 2 = Fair 3 = Good 4 = Very Good 5 = Excellent

Elements	Components	Available	Rating	Comment
Non-Government Initiatives	Local and visionary leaders emerge to coalesce stakeholders around a bold common goal	Yes	2	Few local leaders (Such as Lamine Baro) emerge in the local EdTech industry which helps to attract stakeholders on to the sector.
Investments	EdTech entrepreneurs have access to capital through appropriate channels, allowing them to survive and thrive. These channels include; accelerator programs, angel networks, venture capital, Nongovernment organization etc.	No	1	It is very difficult for EdTech startups to get funding within the Ivorian ecosystem. Most of them operate with their personal funds or with small grants not sufficient to run and grow their activities.
Market Efficiencies	There is an objective and simple way for users to select EdTech products that meet their needs.	No	2	There is not simple and clear way for users to select EdTech products. Unlike other sectors where there are easy points of collaboration, EdTech products need to acquire users on their own by leading the marketing and market education process themselves
	Businesses have a cost-efficient marketing, sales and distribution mechanism for reaching customers, whether B2B, B2C and B2G.	No	2	Marketing costs are expensive, and it is very erratic in nature. B2B marketing is somewhat easier to do since the groups are more organized but the decision-making process is long and tedious
	Communication of product effectiveness research, evaluation and user experience.	Yes	3	Most of the startups do extensive research and build it into their user experience. However, aggressive marketing is required to change users' behaviors.
	Everyone that requires Edtech services has access to it.	No	1	Not everyone that requires service has access to it. In addition to not even knowing about the solution or understanding that they need such a solution, there is also limitation to internet access
	Incubator programs that nurture promising Edtech start-ups exist	No	1	Incubators and startups focus on other sectors. If CIV had a program like Injini for EdTech startups, that worked with startups to improve their business model and opened resources to them to run an efficient model, the space would be extremely different
	Edtech startup have opportunities to improve their leadership and services.	Yes	2	There are opportunities for startups to improve their leadership, expertise and services in the market. But there are a lot of barriers to scale and deliver their services in a cost-effective way.
	Startups can afford an efficient, experienced and effective team.	No	2	It is expensive to maintain a team to run an edtech solution. The major cost is with software engineers. With organizations like Andela coming in, the cost of developers have spiked up as they want to be paid more. Most edtech startups rely on contract developers or consultants who work on a case-by-case basis
Social Media	Social Media platforms are used to market to potential EdTech users, deliver EdTech services and measure learning experience effectively	No	2	Direct and high touch marketing is the preferred marketing choice of EdTech startups. Although there is some potential in social media marketing, the market will need a couple of years for this to change. Not a lot of conversations are happening on social media as against direct sales and word-of-mouth
Learning Outcomes	Do the EdTech solution providers measure their impact on learning outcomes?	Yes	2	Only test prep companies measure their impact on users learning outcomes. This is intuitive for them because the solution they proffer is for students to pass their tests/exams, therefore, they must evaluate the performance of students against the material provided.



THE
INTERSECTION:
GHANA AND
CIV

While mapping out the EdTech ecosystem of Ghana and Cote d'Ivoire, some similarities in their ecosystem were discovered.

The similarities are clustered into five parts

Part 1: Impact measurement

Part 2: Startup Challenges

Part 3: The Investors

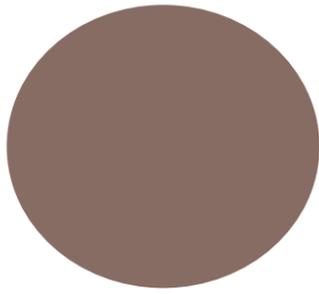
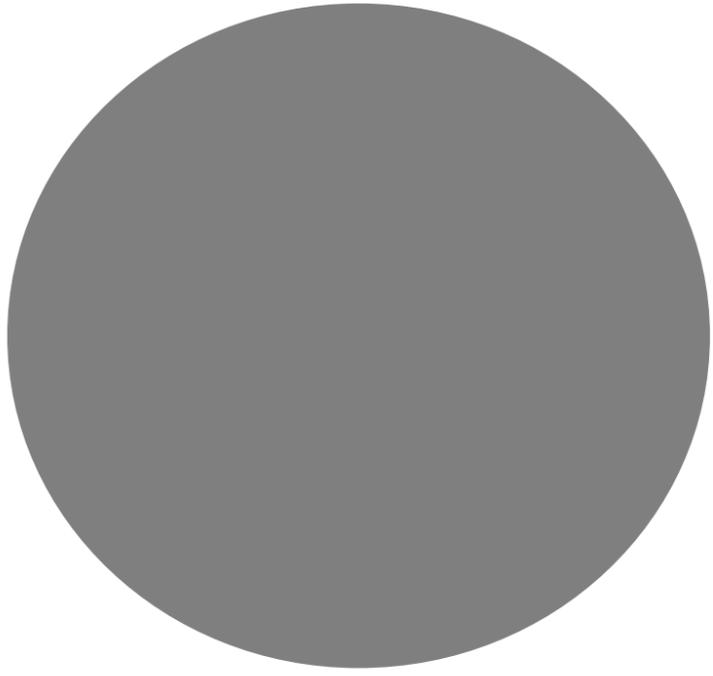
Part 4 : Ecosystem Metrics

Part 5: Ecosystem Recommendations

IMPACT MEASUREMENT

Highlighted below are metrics EdTech companies in Ghana and Cote d'Ivoire use to measure their impact.

Metrics	Example
Pass rate	This is mostly used by test Prep companies to evaluate the performance of students who take courses on their platform in preparation for national/regional exam.
Ratings	This is used by EdTech companies that offer courses on their platform. For them, good ratings means they are making a difference.
Reviews	Reviews left on the platform by people engaging with the product, act as an evaluator of the impact of EdTech products.
Number of users	This is a very important metric for the startups in this space because the sector is nascent. Therefore, growing numbers means people are not only buying into their product, but also EdTech.
User engagement	This is usually measured by number of active and inactive users. Increased number of active users means, the learning objective of the product is being achieved.
Paid Subscriptions	EdTech companies believe that, if people are willing to pay for their products, they are making an impact.
Number of Courses	By offering a large range of diverse courses, EdTech can expand their user base allowing them to reach more people. For them, this means they are making an impact.
Number of Quizzes taken	An increase in the number of Quizzes taken means high user engagement.
Number of hours spent on the platform	Increase in the number of hours spent on a platform means, the user objective for engaging with the platform is being achieved.



STARTUP CHALLENGES

STARTUP CHALLENGES

Limited Capital Supply Across the Risk-Return Spectrum

The EdTech companies in these two countries struggle to access funding in a format that is appropriate for their stage of development, and that is most suitable for their needs. There is a critical gap in funding for enterprises in their early stages of growth; investors display a low appetite for risk in the EdTech space, with reluctance to invest in early-stage enterprises. This gap in funding contributes to a low volume of established EdTech companies in these countries. There is a reluctance to provide debt financing to seed and early-stage ventures due to their limited track records and often unproven business models. For early-stage start-ups this is particularly key; institutional investors and often commercial banks stipulate interest rates that are higher than for established businesses due to the risk profile of early-stage ventures and as such debt financing tends to be prohibitively expensive. There is also insufficient data on EdTech returns, both financial and non-financial, making it difficult for investors to thoroughly assess the viability of a potential investment and consider an appropriate rate of return. The EdTech in these countries is still nascent and as such, many ventures have not had time to mature and demonstrate results; similarly, there is lack of public information against which to benchmark any such data.

No proper market data backing product development.

During the interviews conducted for this report, an investor stated that, in low trust insular societies like Ghana and CIV, insight is institutional. A lot of information needed to build something valuable is sitting with a few people. There is not a wealth of market specific research that goes deep and broad that is available for startups to tap into easily. Therefore, an EdTech startup with no pedagogical experience trying to build products for the education sector will most likely struggle to get veterans in the industry to provide guidance as they engineer their products except if the veterans believe there will be a direct benefit for them. Therefore, most of these startups are building in the dark and are taking a bet that their intuition will work

Limited availability of capacity building services

EdTech startups often pioneer new business models that are tailored to the needs (and constraints) of underserved markets. For many this means selling to customers who are difficult to reach and to influence, have a low resource base and can be volatile in their patterns of consumption. These startups require intensive support - from business plan development through to expert advice on operational and scaling issues - the results of which will often determine the nature (and amount) of investment that they should attract.

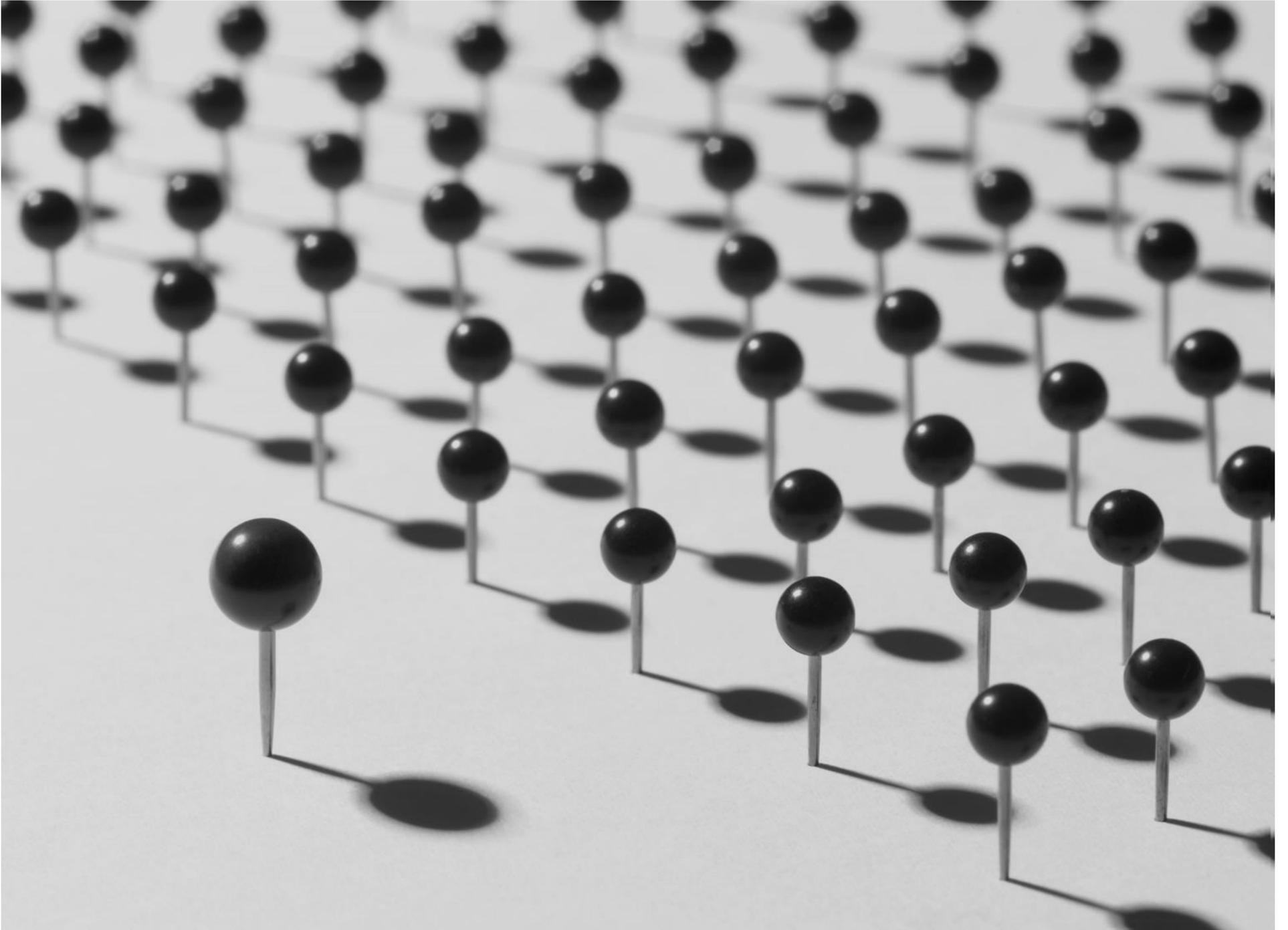
Low willingness and/or lack of ability to pay for EdTech products and services is a major challenge for the all the EdTech firms.

None of the firms that were interviewed are profitable and from further investigation into the ecosystem, none of the startups are profitable. Users (both educators and students) tend to actively use products and services that are free. Many EdTech firms have tried unsuccessfully so far to change users' behavior and to change their willingness to pay by offering free trial periods. The lack of data (even among EdTech firms) means that it is difficult to distinguish between users' unwillingness and inability to pay.

STARTUP CHALLENGES

High operational costs act as a barrier to growth.

High and recurrent operational costs were identified as a considerable burden for EdTech firms. The recurrent nature of the operational expenses means that variable costs are high for most firms in the EdTech space. Many EdTech firms consider customer acquisition to be most challenging, as the sales cycles are particularly long. Targeting schools and other education institutions requires overcoming multiple challenges - changes in people's behavior and perceptions through direct intervention leading to high human-resource requirements. High and variable customer acquisition costs are a significant ongoing challenge for EdTech firms. Low digital technology infrastructure requires a physical presence to sell products and services to education providers and users. Having to acquire customers in the education services provision sector using offline, labor-intensive methods adds to costs in an already capital-constrained environment, where funding is difficult to acquire and retain.



THE INVESTORS

INVESTORS

EdTech firms do not feature highly in sectors that Investors are currently involved in. Investors are heavily focused on fintech and e-commerce, investing a total of \$1.1m and \$13.4m in CIV and Ghana, respectively. The EdTech sector also does not yet feature heavily in the short- to medium-term future of Investors in the space. Interviews indicate that part of the reason for this is that EdTech firms are still seen as more of a charitable endeavor than profit-making.

The general perception among investors regarding the EdTech sector in Ghana and CIV is that there is huge market potential. However, despite many EdTech firms existing since 2014, the sector has not seen much growth. **According to investors, despite the huge potential and large potential market size, the main challenge for the EdTech sector is that there has not yet been a locally proven business model that can create a balance between seemingly mutually exclusive objectives of social impact and profitability. While interviewing for this report, there was consensus that once a model proved profitable at scale, investment would flood into the EdTech sector in Ghana and CIV.**

There is also no existing industry benchmark to gauge sustainability and scalability of the monetization potential of existing business models. This is a deterrent for investors looking for investment opportunities that provide them with high returns, or a clear path to profitability in the medium to long term. Unlike other technology-based sectors, EdTech firms have a greater focus on social impact and, therefore, their market is not inherently a high profit-generating sector. This naturally then poses a challenge for EdTech firms in terms of attracting potential investors. **Therefore, one of the biggest challenges that EdTech firms face is how to market and package themselves—as a social enterprise or as a traditional technology startup.** The main implication of being categorized as a pure social enterprise would be more realistic expectations among the investors regarding the return on investment, because of the firm's greater focus on social returns vs. commercial returns. This strategy could also discourage investors whose focus is solely on commercial returns. On the other hand, marketing EdTech firms as traditional technology startups may not be able to justify the relatively lower returns.

EdTech Investors Due Diligence Process

Highlighted below are key decision points for investors in Ghana and Cote d'Ivoire EdTech space.

- **Associated cost of providing the service/product and the target audience ability to afford it:** EdTech products/services usually require hardware infrastructure(phones) and software infrastructure(internet). Chanzo Capital's operating partner, Ian Ziddah, said their investment in e-campus was driven by the start-up having corporate organizations has one of their target markets as these organizations have the resources to pay premium for their services.
- **The market size for the product/service:** The potential user base of the product.
- **Expected returns on investment:** At what multiple will the investor exit the market?
- **Purchasing Power of the target audience:** Can the target audience afford to consistently pay for the services?
- **The EdTech product/platform:** Does the technology platform provide the startup with a competitive edge in the market?

“The investor landscape revealed that, investors do not consider impact on learning outcomes when making EdTech related investment decisions”.

INVESTORS

Potential investors with a focus on Africa and Education

Investor	Overview	Investor type	Investment instruments	Sector(s) of Focus	Investments in GH and CIV?	Country Focus	Notable EdTech investments
Chanzo Capital	Chanzo Capital is a venture and growth capital firm, investing Capital, Capacity and Community in high-tech Startups and Scaleups in Kenya, Ivory Coast, Nigeria, Ghana and South Africa (KINGS) - these countries make up the "KINGS" of Africa's digital economy. - Hence our fund is called the "KINGS FUND."	Venture Capital	Equity	Tech	Both		eCampus
Ghana Innovation hub	The hub average ticket size is \$1k - \$10k. It offers physical working space, as well as business development services, investment matchmaking and ecosystem support.	Incubator/ Accelerator	Grant	Tech	GH	Ghana	N/A
Innohub Accelerator	Its is a Business Accelerator and Impact Investment Platform that helps SMEs with high growth and high impact potential to become investment ready, sustainable and scalable in order to achieve profitability and social impact. Average ticket size is \$1k - \$50k	Accelerator	Grant, Equity, mezzanine, convertible note	Tech	GH	Ghana	None
MEST Seed	MEST was founded in Ghana in 2008. MEST provides critical skills training, funding, and support in software development, business, and communications to Africa's tech entrepreneurs. Average ticket size is between \$50k - \$250k	Incubator	Equity	Tech	Both	Africa	Leti Arts
The Baobab Network	The Baobab Network is a tech accelerator focused on early stage tech start-ups in Sub Saharan Africa. Average ticket size \$25k	Tech Accelerator	Equity	Tech	GH	Africa	Beblocky
Accra Angels Network	Accra Angels Network provides the platform for 'mid-to high' net worth individuals or institutions to invest their funds and resources in Ghanaian based early stage businesses, which have a significant growth potential, a latent ability to generate disproportionate returns, and demonstrable social and economic impact. Average ticket size \$20 - \$250k.	Angel investment	Equity, convertible notes	Agriculture, fashion, education, Real estate/housing, health	GH	Ghana	Revo Education
Acumen Fund	Acumen goal is to transform the world of philanthropy by looking at all human beings as members of a single, global community where everyone had the opportunity to build a life of dignity. The organization invest "Patient Capital," capital that bridges the gap between the efficiency and scale of market-based approaches and the social impact of pure philanthropy, in entrepreneurs bringing sustainable solutions to big problems of poverty. Average investment size \$750k	Impact Investment Fund	Equity, loans, and mezzanine	Agriculture, financial inclusion, education, energy, health, housing, water	GH	Developing Economies	Crehana

INVESTORS

Investor	Overview	Investor type	Investment instruments	Sector(s) of Focus	Investments in GH and CIV?	Country Focus	Notable Edtech investments
Comoe Capital	Comoé Capital, the first impact investment fund dedicated to financing and supporting Ivorian SMEs and start-ups. Comoé Capital is aimed at SMEs and start-ups with high growth potential from all sectors of activity and regions of Côte d'Ivoire, whose financing needs are between 20 million and 300 million FCFA	Impact investment fund	Equity	Edtech	CIV	CIV	Etudesk
Jacobs Foundation	The Jacobs Foundation funds research projects and intervention programs and supports scientific institutions to bring about social changes in the area of child and youth development.	Impact investment fund	Equity and convertible debt	EdTech	Both	Switzerland and CIV	Eneza, Chalkboard
IFC Venture Capital Group	IFC supports early-stage ventures in developing countries that are creating new markets, transforming industries, and driving inclusive growth while realizing strong returns. By investing in best-in-class entrepreneurs and partnering with top-tier venture capital (VC) funds, we support the creation of a tech-enabled venture asset class across emerging markets that fosters private sector growth.	Venture Capital	Equity and debt	Digital health, ecommerce, e-logistics, e-supply chain, EdTech and Agtech	Both	Global	Andela, Coursera, Revelo, Solo learn, SpringBoard, Bridge International Academies
Seedspace	Seedstars is a Swiss-based private group of companies with a mission to impact people's lives in emerging markets through technology and entrepreneurship.	Venture Capital	Equity	Fin Tech, EdTech, Agri Tech, Health Tech, Clean Tech & Energy, Retail	CIV	Emerging markets	Bora Teacher and Bora Digital
Proparco	Proparco - a subsidiary of the Agence Française de Développement (AFD) devoted to private sector funding - has been supporting sustainable development for more than 40 years. It helps finance and support financial institutions and corporate private-sector projects.	Development Finance Institution	Equity and Debt	Renewable energy-based Infrastructure, Agribusiness, Financial sector, Health and Education	Both	Africa, Asia, Latin America and Middle East	None
Learn Capital	LearnCapital is a venture capital firm focused exclusively on funding entrepreneurs with a vision for better and smarter learning.	Venture Capital	Equity	EdTech	None	Global	Andela, Couseira
Omidyar Network	The Omidyar Network seeks to advance entrepreneurship for creating social good. It operates as an active impact investor, providing both financial and non-financial support to emerging businesses as well as not for profit ventures..	Philanthropic Investment Firm	The Network employs a flexible capital model that includes impact investments as well as grants	Consumer internet and mobile, Education, Financial Inclusion, Governance and citizen engagement, Property rights	N/A	Global	Geekie

INVESTORS

Investor	Overview	Investor type	Investment instruments	Sector(s) of Focus	Investments in GH and CIV?	Country Focus	Notable Edtech investments
Savannah Fund	Savannah Fund is a seed capital fund specializing in US\$50,000–US\$1,000,000 investments in early stage high growth technology startups in sub-Saharan Africa.	Venture Capital	Equity	Tech	GH	Sub-Saharan Africa	Eneza, Moringa School
500 Start ups	500 Startups is on a mission to discover and back the world's most talented entrepreneurs, help them create successful companies at scale, and build thriving global ecosystems. It is one of the most active venture capital firms in the world. Since its inception, the company has invested in over 2,300 companies via its 5 global funds, and 15 thematic funds dedicated to either specific geographic markets or verticals.	Venture Capital	Equity	-	Both	Global	Udemy
Africa Tech Ventures	Founded in 2016. ATV, aim to provide both capital and support in areas of HR, partnerships, sales, strategy and expansion, helping to build scalable businesses and number 1-3 players in their niche, and thereby creating superior financial returns and real impact through increased access of affordable essential goods and services and job creation. Average ticket size \$100k - \$5m	Venture Capital	Equity	Tech enabled in sectors of agriculture, education, employment, financial inclusion, healthcare and infrastructure	No	Africa	Eneza Education
Afvest	Founded in 2008. The firm's goal is to back companies with a differentiated value proposition, strong and highly-accountable management teams with a passion to grow their businesses using innovative models that disrupt incumbents. Average ticket size is \$100k	Private Investment Firm	Equity	Sector Agnostic	No	Africa	N/A
Sorenson Impact Foundation	The Sorenson Impact Foundation invests in early stage start-ups that are developing innovative, scalable solutions to some of the world's most pressing needs.	Venture Capital	Equity	Agriculture, Education, Energy, Finance, Manufacturing & Trade, Health, Housing, Tech	Ghana	Global	Eneza

INVESTORS CHALLENGES

Investors in Ghana and Cote d'Ivoire face similar problems when investing in nascent sectors like EdTech.

DIFFICULTY EXITING INVESTMENTS

There are few conventional exit options for equity investments in Ghana and Cote d'Ivoire. This acts as a critical deterrent for investment in sustainable social enterprises like EdTech and consequently hinders the supply of capital to impact investees. This limited number of profitable and varied exit options for impact investments is primarily a result of the incipient state of capital markets - and the impact investment industry in Africa.

Impact investments tend to be relatively illiquid, as most investments are made in the form of private equity or private debt. Typically, at the end of an initial investment period in traditional markets, private equity and venture capital investments seek to gain value by selling their stakes in an enterprise, which can be done through Initial Public Offerings (IPOs); however, this option is scarcely available to investors in these markets especially the EdTech space that is nascent.

The exit of impact investments in these countries is also constrained by a limited number of successful exit examples; without successful exit track records, it can be a challenge for impact investors to continue to raise funding. Inadequate exit options and a limited number of successful exit examples are a considerable challenge for investors as they often must operate under the terms of their own investors, who offer funding with specific time periods.

POOR LINKAGES BETWEEN EDTECH STARTUPS, INVESTORS AND INNOVATION NETWORKS

A significant challenge for the EdTech sector in Ghana and CIV lies in an inadequate network of services that connect and inform EdTech startups, investors and other actors in the ecosystem. The EdTech ecosystem is generally fragmented and underdeveloped with no established, central spaces for connecting investors and investees.

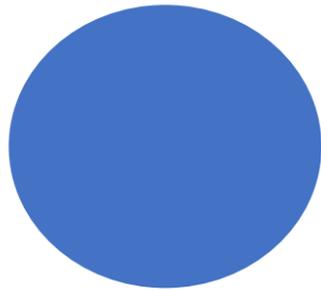
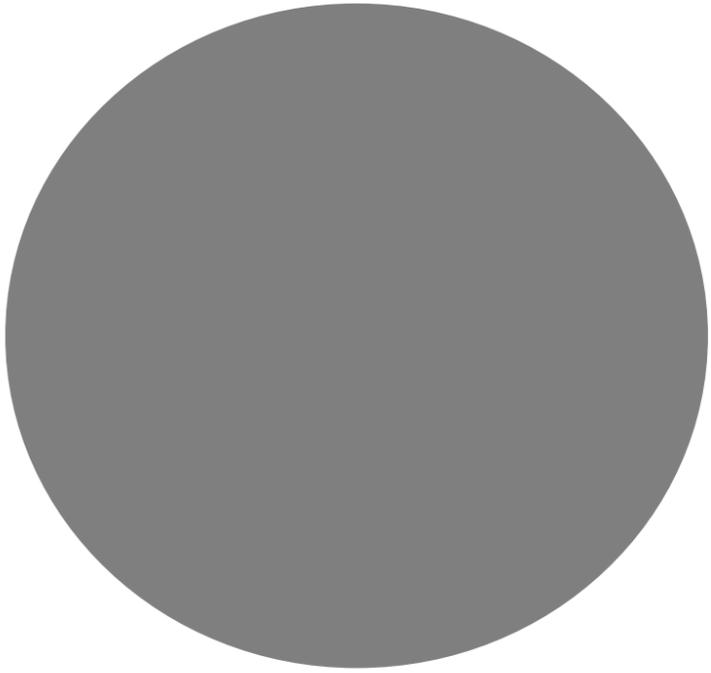
For investors, this is problematic in that it complicates the search for viable investment opportunities. Without adequate professional associations and formal networks for EdTech companies, comprehensive databases of potential investees are difficult to find. As such, investors or intermediaries must dedicate significant time and resources to identifying and vetting potential investments; these search and transaction expenses can be costly. This lack of data and intelligence on the EdTech industry is slowly beginning to change as institutions such as Briter Bridges have begun to produce more research and studies on EdTech activities in these countries.

IMPACT INVESTORS CHALLENGES

LACK OF INNOVATIVE PRODUCTS/POOR PRODUCT DEVELOPMENT

Investors in Ghana and CIV have stated that there is no deep industry insights backing product development. Startups see products used in other countries and immediately think of creating a local context version of it, but this is not always effective.

Lack of innovative products is shown by how most EdTech companies in Ghana and CIV focus on a particular area (digitizing past questions) and are not reimagining the solutions EdTech can provide. These start-ups should look for uncontested markets and build a blue ocean around it.



ECOSYSTEM METRICS

ECOSYSTEM METRICS

This section discusses the indicators that seem most relevant in monitoring and evaluating the performance, cost-effectiveness, and equity of educational services in the education ecosystem. The main aim is to provide a guidance on the use of indicators. Performance indicators can facilitate improvements in the design and implementation of educational policies. Information was provided about prevailing problems and hint at some of the causes of the problems. However, indicators are "indicative" and cannot be a substitute for in-depth analysis and evaluative work. Indicators tend to be classified depending on whether they reflect the means, the process, or the end in achieving the objective of a particular set of development policies, programs or projects. **In this case, the objective is to improve of learning outcomes.**

Good monitoring and evaluation should make use of an appropriate balance between different types of indicators that can establish the link between means and ends.

FOUR TYPES OF INDICATORS

- **Input Indicators:**

It measure the means, or the resources employed to facilitate the satisfaction of needs and, hence, improvement of learning outcomes.

Examples would include:

- Number of teachers,
- Educational polices promoting EdTech
- Number of EdTech solutions
- School buildings
- Teaching materials supplies
- The cost and level of expenditures (public and private) on education.

Since absolute numbers may not be very indicative for policy decisions, input indicators are often specified as some match of supply and demand variables.

Examples would include:

- pupil/teacher ratios
- average cost per pupil.
- number tech devices per student.

- **Access indicators:**

Demand factors of potential users that comprises of variables that determine the use and accessibility of the supplied services.

Examples would include:

- Geographical distance to school facilities,
- Affordability of Tech products/ICT infrastructure
- Family and cultural background of students
- Opportunity cost: foregone earnings of individuals and households,
- Direct private costs of education (fees, utensils, uniforms, etc.)

ECOSYSTEM METRICS

- **Output and Outcome indicators:**

measure the impact of a particular set of policies or a project on learning outcomes. Improvement in these types of indicators should determine the success of policies and projects as they try to measure the impact on education outcomes. Output and outcomes should relate to objectives, but there may be different levels of objectives, hence the distinction between output and outcome.

Output:

The immediate objective of educational policies may be to:

- raise coverage of the educational system: measured through enrollment rates.
- improve its internal efficiency: measured through retention rates.
- raise the skills and knowledge of graduates: measured through achievement tests.

Output indicators, as defined here, try to measure to what extent such immediate objectives are achieved.

- **Outcome:**

Better education may serve broader development goals, such as:

- higher labor productivity,
- better health
- enhanced capabilities of individuals to participate in modern society. Such 'higher' goals

On the quality of schooling: While debatable, student's learning maybe measured through achievement tests of knowledge and skills. National assessment systems may help to identify effective inputs and processes to achieve measurable gains in student learning.

To assess improvements in educational quality, it is important to establish a baseline measurement of learning, maybe through CIV and Ghana national assessment system and criterion-referenced tests (i.e. which relate to the educational objectives of the country's educational system).

Assessing educational achievement as an output indicator is very important because of the quality of education, i.e. the type of skills and knowledge, are eventually the key to understanding links between education and income earning capacity, education and productivity, education and health, education and social participation, and so on.

On costs:

Unit costs per student arguably forms the first fundamental indicator for decisions in education, while current and expected enrollment will form the key variable in the budgetary planning process. **Such cost must be decomposed by:**

- schooling level and curriculum type (i.e. primary, secondary, university, etc. and type of secondary education, faculty in higher education, etc.)
- sector (private versus public schools)
- region (e.g. unit costs may differ between urban and rural areas)
- expenditure and input type (teacher salaries, rental-cost equivalent of school buildings, teaching materials, etc.).

ECOSYSTEM METRICS

The breakdown between private and public costs of schooling is also important. Note that there are two concepts of private costs of schooling;

The first is the unit cost of the delivery of educational services through privately run schools or universities.

The second is the direct cost of the individual or household to enroll into the educational system (either public or private) and relate to the fees, books, uniforms, transportation, etc. This is under the access indicators.

LEARNING OUTCOMES METRICS

“Extent to which the learner improves knowledge and skills levels”

Learning outcomes can be varied, including knowledge, motor skills, logical reasoning, problem solving, critical thinking, creativity, and social and emotional skills.

In assessing whether learning occurs in an institution, the gold standard is to measure improvement of individuals or a cohort over time and ideally against a control group. However, this is can challenging and time-consuming and costly in most instances. As such, investors rely on proxy indicators, including both inputs and outputs.

Quality of teachers

- Education level and experience of teachers.
- Churn of teachers.
- How regularly teachers are observed and data on teacher quality from observations.
- Attendance data of teachers.

Quality of learning materials and infrastructure

- Quality of learning materials and evidence of testing and improving learning materials.
- Content creation team (size of team, qualifications, experience) and amount of money invested in content creation.
- Quality of, and amount of money invested in, other infrastructure that is relevant for learning (such as laboratories, libraries, equipment).
- Partnerships that speak to quality of learning materials and infrastructure.

Time spent on learning

- Number of contact hours with teachers per week for each student and/or student-teacher ratio.
- Attendance data of students.
- When assessing a learning product (such as an Edtech app), how many hours per week a product is used for?

ECOSYSTEM METRICS

Learner performance

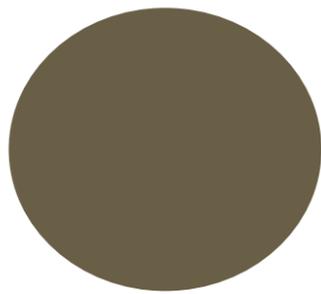
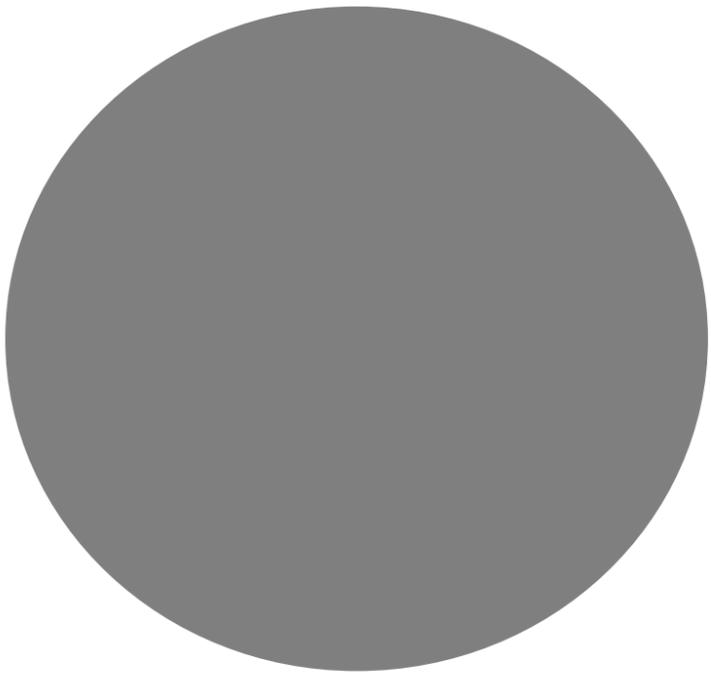
- Performance of students on internal and national exams and how this has changed over time. National exams include:
 - Ghana** - Basic Education Certificate Examination (BECE), Early Grade Math Assessment (EGMA) and Early Grade Reading Assessment (EGRA)
 - Cote d'Ivoire** - National exams relating to - certificat d'étude primaires élémentaires– (CEPE), brevet d'étude du premier cycle–(BEPC)
- Value add to students through education (measured by assessing trajectory on entry, then progress against this over time.)
- Performance of students and/or value add to students compared with a control group.

Student feedback

- How regularly student surveys are administered and participation rate.
- Net promoter score and other survey data.
- Other student feedback (such as likes or rating on 'app stores').
- Renewal and retention rates.

Governance

- Quality of system in place to govern and systematically improve quality of learning.
- Evidence from external and internal inspections, regulatory approvals or certification.



ECOSYSTEM RECOMMENDATIONS

GOVERNMENT STAKEHOLDERS

1 **Establish, communicate, and sustain a vision for transformative, Equitable EdTech use.**

- Create a long-term vision, embodied in written policy, and (if applicable) supported by strong legislation so that the vision can survive changes in administrations. It should be a well-branded initiative that can be easily communicated to and by parents and school leaders.
- Describe what technology is recommended, for whom, why, and how it should be implemented.
- Ensure the vision aligns with funding opportunities for implementation. Also ensure it is integrated into teacher preparation programs and is updated regularly based on evidence of past practice, horizon scanning of current local and global innovations, and future thinking.

2 **Build and maintain infrastructure.**

- Continue to strive for universal access to basic infrastructure, including internet connectivity. Although connectivity is not always necessary during product use, it has the benefit of creating opportunities for teacher professional development around product use, more efficient distribution and support for EdTech products, research and evaluation, product selection, and opportunities for more transformative use of EdTech through communication and collaboration among learners.
- Explore Universal Service Funds, block grants, flexible decentralized funding, and public-private partnerships with telecom companies. These examples are strategies used outside of basic government funding for infrastructure.

3 **Support local innovation through early stage risk capital.**

- Encourage local innovations to support the development of products and services that are more relevant in the environment.
- Support EdTech businesses at the early stages through seed funding geared toward evidence creation, innovation hubs, competitions, and partnerships. Most countries that have scaled equitable access to EdTech have had this government support. For example, USA.

1 **Raise awareness around EdTech benefits**

- Advocate for evidence-based government policy, strategy, and resource allocation benefiting appropriate EdTech.
- Bridge the gaps between users, decentralized education authorities, and central policy build common understanding of policies that help or prevent EdTech scale-up..
- Engage in visioning exercises, planning, resource allocation, and major procurement decisions.

2 **Build the capacity among stakeholders**

- Engage teachers and other stakeholders in understanding and implementing models of transformative use of technology (as opposed to simple replacement of regular resources with digital ones).
- Provide training on adapting and adjusting implementation models to the needs of groups in the form of organized training, virtual communities of practice, or guidelines for implementation and performance monitoring.

3 **Focus on research and communications**

- Produce unbiased product reviews and regular communication about the realities of EdTech implementation - both positive and negative.
- Research finding should be integrated into tool development.
- Sponsor or participate in school-based product pilots or engage in rigorous experimental research and evaluation. Ensure findings feed back into advocacy and capacity-building efforts.

IMPACT INVESTORS, FOUNDATIONS, VC FIRMS

1 **Support the growth of innovators, coalitions, and advocacy organizations**

- Invest through philanthropic funding, strategic grants, impact investment, or other incentivized financing. Investment is essential for innovations to grow and sustain through the challenging early phases. Additionally, it is crucial for evidence creation and improving the effectiveness of learning outcomes.

2 **Product research, evaluation, and communication**

- Support high-quality, unbiased product evaluations carried out by independent organizations.
- Contribute to convenings of EdTech users and stakeholders to share lessons and stimulate user-based design.
- Sponsor development and maintenance of platforms for selecting and comparing features and evidence of good EdTech practice.
- Fund or provide thought leadership and best practice on important issues that are perhaps under-addressed (because they are not revenue-generating), such as privacy, data security and internet safety.

3 **Support EdTech business models that reach the most marginalized with both capital and counsel**

- Support EdTech entrepreneurs with patient capital, opportunities for stop-gap research and development funding, and grants for product development or adaptation for the needs of the most marginalized.
- Identify diverse sources of revenue, establish efficient sales and product distribution strategies that promote equitable access to EdTech.

THE COMMUNITY

1 **Create Objective Evidence and Platforms for Selection**

Stimulate demand for quality EdTech by sponsoring rigorous evidence and platforms for selecting quality products or services.

- Establish a rigorous standards-based product and service catalogue for objective review of products and services.
- Invest in communication platforms that share evidence in accessible ways with relevant stakeholders, such as school and district managers.
- Provide objective evaluation of EdTech products; sponsor events to disseminate good practice; and facilitate communities of practice.

2 **Sustain Change with Human Capacity and Long-Term Policy**

Promote the importance of pairing infrastructure investments with interventions in policy, business models, and capacity building.

- Support and advocate for strategic, long-term planning based on a vision for EdTech use.
- Support advocacy groups and cross-sector coalitions to develop action plans and monitoring systems that address all four categories of the ecosystem.

3 **Enable Business Models**

Identify, support, and promote sustainable and responsible EdTech business models.

- Develop public goods and platforms that facilitate government and school purchase of EdTech solutions at scale. X Identify creative, multi-year financing strategies that help bridge startup gaps; incentivize designing products for smaller, underserved markets. Help operationalize longer-term partnerships with schools, combining sales and training in order to have more predictable long-term revenue.

QUOTES FROM INDUSTRY ACTORS

"There is no deep insight and market data backing product development"

"There are a lot of barriers EdTech companies need to scale to gain traction. For example, Government legacy systems."

- William Senyo, **Co-Founder & CEO Impact Hub Accra.**

"When investing in EdTech companies we think "how many people in the market can afford this product?"

"Using EdTech everyday as a teaching aid is not viable because of the associated infrastructure costs; internet and devices like smart phone"

Advice for EdTech entrepreneurs: "Have a good idea of the market you are servicing and numbers that drive it. Effectively articulate how you will maximize the opportunity. Find an investor that meet your needs. Look for a mentor that understands the market"

~ Ian Ziddah, **Operating Partner Chanzo Capital**

"EdTech companies need to invest heavily on marketing to change the habit and culture of teachers because parents and students rely heavily on their advice with regards to EdTech."

"Teachers are unwilling to promote EdTech products because it threatens the kick-backs they get from publishing houses."

:The EdTech space is fragmented. Startups need to come together and operate has one unity to promote PR and marketing for the ecosystem".

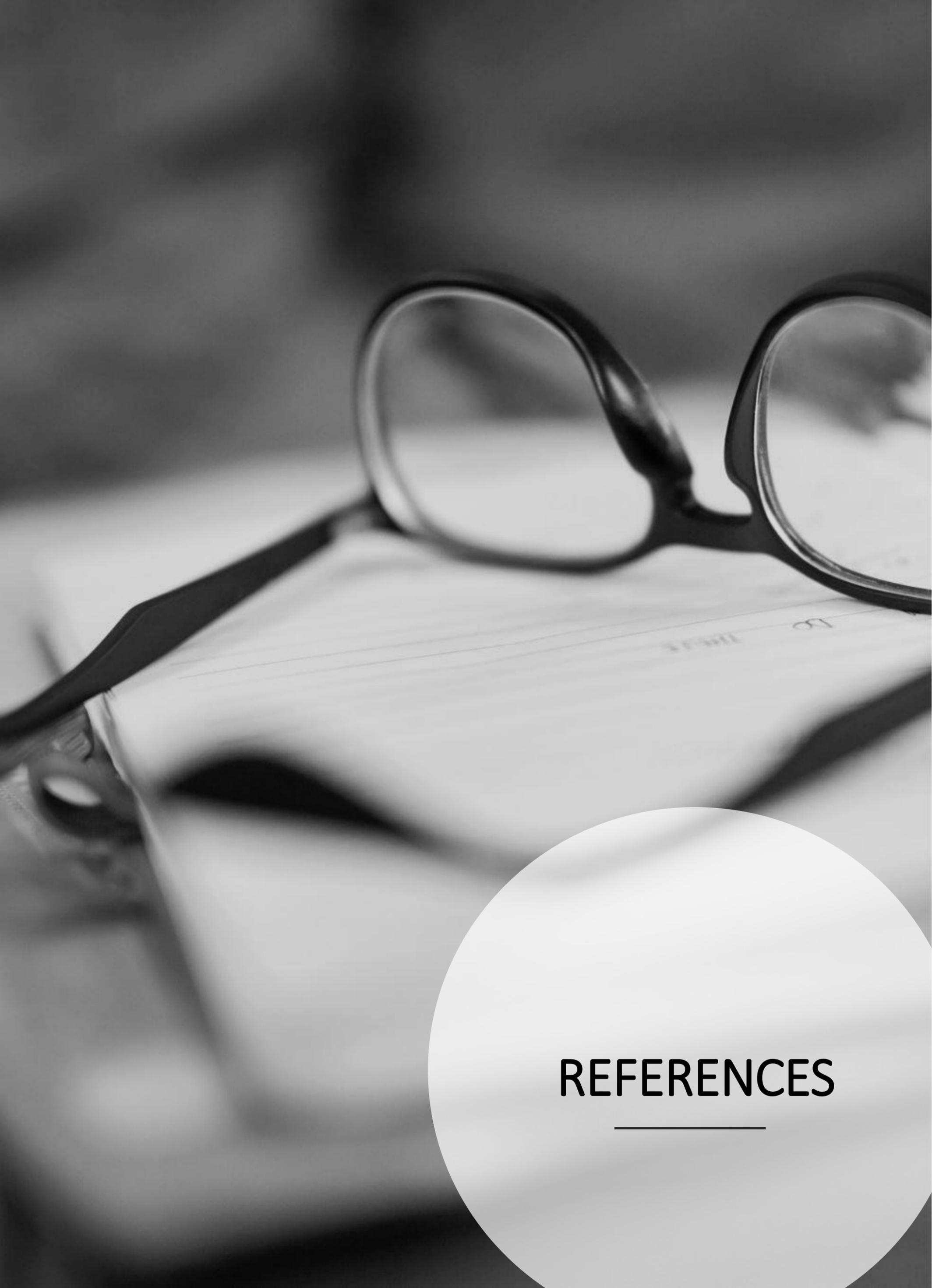
Archibald Annan, **CEO Revo Education**

CONCLUSION

The main goal of mapping out the EdTech ecosystem of Ghana and Cote d'Ivoire was to:

- Understand the gaps in these countries' Education system and EdTech ecosystem
- Highlight the key actors in the Ecosystem.
- Provide recommendations to improve EdTech ecosystem.

The main objective of this research is to gather scientific evidence of the impact of EdTech solutions on learning outcome in Ghana and Cote d'Ivoire.



REFERENCES



REFERENCES

- (ADEA), A. f. (2020). *Delivering education at home in African Member States amid the Covid-19 Pandemic: Country Status report*. Retrieved from http://www.adeanet.org/sites/default/files/report_education_at_home_covid-19.pdf
- (2019). *Africa's Funding landscape*. Briter Bridges. Retrieved from <https://static1.squarespace.com/static/5ab2a4d655b02c29746fc58c/t/5e09b86a41180e2960fb0c54/1577695342984/Africa%27s+2019+Funding+Landscape+PDF-comp.pdf>
- (2019). *Cote d'Ivoire Higher Education Development Support Project*. The World Bank. Retrieved from <http://documents1.worldbank.org/curated/en/915091553558343307/pdf/Cote-d-Ivoire-Higher-Education-Development-Support-Project.pdf>
- (n.d.). *CPD 2017 - 2020: Strategic Note ECD and Basic Education*. UNICEF. Retrieved from http://files.unicef.org/transparency/documents/Cote%20D'Ivoire_CPD2017-2020_StratgicNote_Education-24%20May%202016.pdf
- (2019). *Entrepreneurs' Guide to Investment in Ghana*. Make-IT in Africa. Retrieved from https://make-it-initiative.org/africa/wp-content/uploads/sites/2/2019/11/Ghana_Investment_Guide.pdf
- Escueta, M., Quan, V., Nickow, A. J., & Oreopoulos, P. (2017). *Education Technology: An Evidence-Based Review*. NBER. Retrieved from <https://www.nber.org/papers/w23744.pdf>
- (2018). *Ghana Accountability for Learning Outcomes Project*. The World Bank. Retrieved from <http://documents1.worldbank.org/curated/en/612671545310563888/pdf/Concept-Project-Information-Documents-PID-Ghana-Accountability-for-Learning-Outcomes-Project-P165557.pdf>
- Group, C. (2019). *Maximizing the Impact of Education Investments*. Retrieved from <https://assets.cdcgroup.com/wp-content/uploads/2020/01/10140708/Maximising-the-impact-of-education-investments.pdf>
- (2016). *Impact Investment in Africa: Trends, Constraints and Opportunities*. United Nations Development Programme (UNDP),. Retrieved from <https://impactatafrica.org/sites/default/files/publications/undp-impact-investing-in-africa.pdf>
- (2014). *Investing for Impact: A Strategy of Choice for African Policymakers*. Bridges Ventures. Retrieved from <https://www.avca-africa.org/media/1114/final-investing-for-impact-report-apr-20141.pdf>
- Johnson, N. B. (2018). *Facilitating Innovation in Technology Startups in Ghana*. Retrieved from <https://www.diva-portal.org/smash/get/diva2:1259431/FULLTEXT01.pdf>

REFERENCES

- Network, O. (2019). *Scaling, Access & Impact: Realizing the Power of EdTech*.
- Rodriguez-Segura, D. (2020). *Educational Technology in Developing Countries: A Systematic Review*. EdPolicyWorks. Retrieved from https://curry.virginia.edu/sites/default/files/uploads/epw/72_Edtech_in_Developing_Countries.pdf
- Taddese, A. (2020). EdTech in Ghana: A Rapid Scan. Retrieved from <https://docs.edtechhub.org/lib/4TKSDH2I/download/CQ8TQKWB/Taddese%20-%202020%20-%20EdTech%20in%20Ghana%20A%20Rapid%20Scan.pdf>
- (2019). Tech Hubs In Africa: How can they support Startups across the continent? International Trade Centre (ITC). Retrieved from <https://www.intracen.org/publication/tech-hubs-africa/>
- Van der Biest , A., & Wyss, M. (2019). Startup Ecosystem Report Accra. enpact data lab. Retrieved from <https://www.enpact.org/wp-content/uploads/2019/08/accra-print.pdf>
- Vos, R. (1996). Educational Indicators: What's to be measured? Retrieved from <https://publications.iadb.org/publications/english/document/Educational-Indicators-What-to-Be-Measured.pdf>