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EdTech in Ghana: A Rapid Scan

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1. About this scan

EdTech Hub country scans explore factors that enable and hinder the use of technology in education. These factors include the policy or vision for EdTech, institutional capacity, private-sector partnerships and digital infrastructure. The scans are intended to be comprehensive but are by no means exhaustive. However, we hope they will serve as a useful starting point for more in-depth discussions about opportunities and barriers in EdTech in specific countries and, in this case, Ghana.

This report was originally written in June 2020. It is based primarily on desk research, with quality assurance provided by a country expert. Given how rapidly the educational technology landscape is evolving, the Hub plans to provide periodic updates. Table 1 provides a summary of the situation regarding EdTech in Ghana.

Table 1. EdTech in Ghana: A summary

Policies	• The Ghana ICT for Accelerated Development Policy, 2003[1] • ICT in Education Policy, 2015[2]
Infrastructure	• 25% of primary schools have electricity, compared to 79% of senior high schools (SHS) (UNESCO Institute for Statistics, 2018) • 8% of primary schools have internet access compared to 40% of SHS (UNESCO Institute for Statistics, 2018) • 92.5% of households own a mobile phone (Ghana Statistical Survey & UNICEF, 2018) • Disparities in access to ICT across urban and rural regions are highest for the internet and lowest for radio
Partners and initiatives	• Ghana Education Service (GES), the Center for National Distance Learning and Open Schooling (CENDLOS) and the Ghana Library Authority are among the Ministry of Education's (MoE) 22 agencies with a prime role in EdTech • The MoE has limited expertise in research, design and implementation of EdTech and is further hampered by weak coordination among its agencies • The MoE leads the implementation of EdTech initiatives alongside development partners and private sector organisations, however, government funding for EdTech is insufficient
Covid-19	• The Government of Ghana closed all schools on March 16, 2020, affecting approximately 9.2 million learners from kindergarten to senior high school and 500,000 tertiary learners • In April 2020, the MoE and GES launched the Covid-19 Coordinated

[1] The Republic of Ghana (2003), available at https://www.moc.gov.gh/sites/default/files/downloads/Ghana-ICTAD%20Policy-Master-final-2.pdf

[2] Ministry of Education, Ghana (2015), available at https://planipolis.iiep.unesco.org/sites/planipolis/files/ressources/ghana_ict_in_education_policy_august_2015.pdf

	Education Response Plan for Ghana[3]
	• On June 1 the President announced the following plan for school reopenings (Kokutse, 2020):
	  ○ June 15, 2020 – Final year tertiary students reopen
	  ○ June 22, 2020 – Final year senior secondaries reopen
	  ○ June 29, 2020 – Final year junior high schools reopen
	  ○ All continuing students will be home until further notice

2. Country overview

Ghana is a medium-sized country in West Africa. It has a population of 30 million, increasing at a rate of 2.2% per year. Close to 39% of the population is below the age of 15 (2016) (Demographic Dividend, 2020). 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, 2018a).

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. Ghana's HDI index for 2018 was 0.596, placing it in the medium human development category and positioning it at 142 out of 189 countries and territories (UNDP, 2019). The country has made substantial progress in reducing poverty, but this has slowed in recent years (World Bank, 2019a). 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, 2018a).

3. Education system overview

The 2008 Education Act[4] is the organising document for the education sector. It establishes the National Inspectorate Board, the National Teaching Council and the National Council for Curriculum and Assessment — each with a role in ensuring accountability in the education system. The Act sets out the three levels of the education system as basic, second cycle or secondary and tertiary education:

1. Basic education consists of two years of kindergarten, six years of primary and three years of junior high school.
2. Secondary education comprises three years of either academic programmes (senior high school), technical and vocational programmes or apprenticeship.
3. The tertiary level includes Colleges of Education (CoEs), universities, polytechnics (a number of which have been upgraded to technical universities) and other degree and diploma awarding institutions.

[3] Ministry of Education, Ghana (2020), as available at https://planipolis.iiep.unesco.org/sites/planipolis/files/ressources/education-response-plan-to-covid-19-in-ghana-april-2020-1.pdf
[4] Parliament of the Republic of Ghana (2008), as available at https://sapghana.com/data/documents/Education-Act-778.pdf

The MoE is responsible for planning, formulating and monitoring the policies that give overall direction to the education sector. Ghana Education Service (GES), the largest of 22 agencies under the MoE, is the lead implementer of pre-tertiary policies and programmes. The National Council for Tertiary Education (NCTE) — which oversees policies and programmes at the tertiary level, and the Complementary Education Agency (CEA), formerly the Non-Formal Education Division, also have a crucial role in education delivery (Ministry of Education, Ghana, 2003). Other agencies and divisions are responsible for administering sub-sectors such as inclusive and special education.

The government's proportionally high expenditures on education as a proportion of GDP (ranging between 6% and 8% between 2011 and 2015) exceed international benchmarks (Ministry of Education, Ghana, 2018a). In 2017, education expenditure as a percentage of total government expenditure was 28.9 per cent, signalling the government's strong commitment to education. Wages and salaries make up the bulk of the government's expenditures on education (95.4%), leaving less than 5 per cent for non-salary expenditures including instructional materials (World Bank, 2019a). Nearly all support for non-salary spending comes from outside of government (World Bank, 2019a; Ministry of Education, Ghana, 2018a).

3.1 Education sector progress and challenges

Ghana has made great strides in expanding access to education since the introduction of Free Compulsory Universal Basic Education (FCUBE). Enrollment rates are higher than 100% for kindergarten and the primary level and over 85% for junior high school (JHS) (Ministry of Education, Ghana, 2018b). At the secondary level, enrollment rates have also been rising and are expected to continue growing following the recently introduced free senior high school policy. In 2019, 430,000 students were enrolled in senior high schools, up from 308,000 in 2016 (Nir, 2019). There is gender parity in enrollment at the basic level that is close to being achieved at the secondary level.

Despite government efforts to increase access to basic and secondary education, low learning outcomes continue to limit students from gaining the skills they need to become productive adults. At the basic and secondary levels, learning outcomes are low for several reasons. These reasons range from inadequately targeted and structured teaching and learning materials to an ambitious curriculum and a shortage of textbooks and classrooms. Gaps in teacher knowledge and education, along with weak teacher management — absenteeism was as high as 14% in 2014 / 2015 — are also contributing factors (Ministry of Education, Ghana, 2018b). Compounding these issues is a lack of quality and timely data on student learning outcomes in the Education Management Information System (EMIS) (World Bank, 2019a).

Disparities in learning outcomes are high in poor and marginalised communities and among girls. The population of out-of-school children estimated at 450,000 is high, especially in the more impoverished northern regions of the country (Ministry of Education, Ghana, 2018b).

In particular, a lack of quality and complete data about students with special educational needs hampers the MoE's ability to serve students with special needs. In

addition to, or perhaps as a result of this, resources for addressing special education needs and disabilities are limited.

3.2 Education Sector Plan 2018–2030

Ghana's third Education Sector Strategy Plan 2018–2030[5] (ESP) provides an overall vision and roadmap for improving the quality of education. The ESP is structured around seven strategic programme goals:

1. Improved equitable access to, and participation in, quality basic education
2. Improved equitable access to, and participation in, quality SHS education
3. Strengthened competency-based skills development in technical and vocational training (TVET)
4. Improved opportunities for non-literate youth and adults to have free access to meaningful quality education and training
5. Improved access for persons with disability, the vulnerable and the talented
6. Improved equitable access to world-class tertiary education
7. Improved planning and management efficiency in the delivery of education

4. EdTech policy and strategy

In this section, we describe national and education ICT policies, considering the latter in greater detail, including long-term strategy.

4.1. National policy

In 2003, the Government of Ghana (GoG) introduced The Ghana ICT for Accelerated Development Policy (ICT4AD)[6]. The policy describes the government's vision for using ICT to achieve development objectives across 14 thematic priorities that include education, health, agriculture, e-governance and research and development capacity. Although the policy is now dated, it helps to position EdTech in the broader ICT context in Ghana and emphasises the cross-cutting nature of ICT efforts. While the ICT4AD plan identifies critical implementing partners for each priority, it does not set expectations for coordination across thematic areas to achieve development objectives.

4.2. ICT in education policy

The MoE's current ICT in Education Policy[7] was drafted in 2003, reviewed and updated in 2006 and 2009, before being finalised in 2015. The strategy guides seven priority areas:

[5] Ministry of Education, Ghana (2018b), as available at https://www.globalpartnership.org/sites/default/files/2019-05-education-strategic-plan-2018-2030.pdf
[6] The Republic of Ghana (2003), as available at https://www.moc.gov.gh/sites/default/files/downloads/Ghana-ICTAD%20Policy-Master-final-2.pdf
[7] Ministry of Education, Ghana (2015), as available at https://planipolis.iiep.unesco.org/sites/planipolis/files/ressources/ghana_ict_in_education_policy_august_2015.pdf

1. Education management
2. Capacity building
3. Infrastructure / e-readiness
4. Incorporating ICTs into the curriculum
5. Content development
6. Technical support, maintenance and sustainability
7. Monitoring and evaluation

The policy aims to address challenges that include the absence of a clear process for consulting with the MoE / GES on EdTech, which slows progress in achieving scale and MoE / GES dependency on unsustainable external funding sources. It also highlights the limited skill and knowledge of MoE staff to implement ICT interventions and of teachers to integrate ICT into learning effectively, as well as the lack of curriculum-aligned content and the weak infrastructure of schools.

The ICT in Education policy is designed to serve as a roadmap for implementing education-sector priorities outlined in the ICT4AD policy. In practice, the policy is rarely consulted both within the MoE (Expert 1, 2020) or by partners outside of government (Expert 4, 2020). And it lacks guidance on how best to address new developments in educational technology, such as the recent increase in mobile-phone ownership and questions surrounding its use in schools (Box 1). 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 (Expert 3, 2020).

Policies outside of the education sector that are relevant to EdTech include the Ministry of Communications' 2014 cybersecurity strategy. A quick scan of the plan reveals that it does not address potential security threats in the education sector — a concern identified in the ICT in Education Policy (p. 48). The Ministry of Communications has also recently announced plans to develop a new digital strategy (GhanaWeb, 2018).

The MoE recognises 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 in a coordinated way until the Covid-19 pandemic and unexpected closure of all schools. As a result of this, the MoE has been rapidly mobilising and coordinating partnerships and resources to develop a strategy that ensures learning for

all students 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" (Ministry of Education, Ghana, 2018b, p. 129). 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 particular attention to STEM. At the systems level, the MoE identifies three strategic priorities:

1. Strengthening the EdTech policy to make it more comprehensive.
2. Improving the EdTech infrastructure in schools.
3. Strengthening the Center for National Distance Learning and Open Schooling (CENDLOS).

Box 1. Are mobile phones banned in schools?

The policy on mobile phones is a source of confusion among school administrators, teachers, students and parents. There is no official policy regarding the use of mobile phones in schools, yet schools and teachers enforce strict rules banning mobile phone use in classrooms (Expert 5, 2020). Some news sources (Darkwa, 2020) suggest that the policy only applies to individual schools; others highlight the serious debate (Kaledzi, 2016) among educators, parents and students and the need for better guidance on the acceptable use of phones in schools. Government partners and educators articulate a shared concern that an outright ban limits the potential of mobile phones in teaching and learning, in a country with widespread usage of mobile phones (Expert 5, 2020).

5. ICT infrastructure

At the national level, household ownership of mobile phones is high (92%) but low for computers (15%) (Table 2). Smartphone ownership increased significantly between 2013 and 2017, with approximately one-third of adults owning a smartphone in 2017 (Silver and Johnson, 2018).

Households also have limited access to the internet (22%) (Table 2). Disparities in access to EdTech infrastructure across urban and rural regions are highest for the internet and lowest for radio (Table 3).

Only about 25% of primary schools have access to electricity at the school level compared to 79% of senior high schools (Table 4). The ICT infrastructure in schools is weak, but teachers also have limited knowledge and skill in using technology, often at the most basic level, making it a challenge for teachers to integrate technology in teaching and learning effectively.

Table 2. Percentage of households who own a radio, television, fixed-line telephone, mobile phone and computer and that have access to the internet at home. (Source: Ghana Statistical Survey & UNICEF, 2018)

Information and Communication Technology	Percentage
Radio	57.2
Television	60.4
Telephone — fixed line	0.9
Telephone — mobile	92.5
Computer	15.0
Access to the internet at home	22.4

Table 3. Percentage of urban and rural households with radio, mobile phone, computer or internet at home. (Source: Ghana Statistical Survey & UNICEF, 2018)

	Urban	Rural
Radio	59	55
Mobile	97	88
Computer	22	8
Internet	32	13

Table 4. EdTech infrastructure in schools. (Source: UNESCO Institute for Statistics, 2018)

Infrastructure	Percentage with access
Electricity	
Primary school	25.0
Junior high school	49.0
Senior high school	78.6
Internet for teaching and learning	
Primary school	8.4
Junior high school	18.7
Senior high school	39.4

Computers for teaching and learning	
Primary school	3.5
Junior high school	13.0
Senior high school	34.9

6. Key partners and initiatives in EdTech

This section looks at the work and roles and responsibilities of key partners with regard to EdTech in Ghana, including government and non-governmental agencies, as well as EdTech initiatives.

6.1. Government agencies

The Center for National Distance Learning and Open Schooling (CENDLOS), one of the MoE's 22 agencies, has an explicit mandate to integrate technology in teaching and learning. The Center began its work nearly 17 years ago with taped lessons and CDs. It has since developed a model for e-learning that includes lesson notes and videos, an interactive activity and a quiz (Expert 2, 2020). The initial vision for CENDLOS was a hub-like function — coordinating, advising, monitoring and tracking e-learning initiatives across the sector. However, for what it is expected to accomplish, CENDLOS is severely under-resourced, and with a staff of three people, limited in what it can achieve.

The MoE recently hired an Instructional Technologist to coordinate EdTech policies and initiatives across agencies in the near term and explore a longer-term strategy for strengthening the hub function of CENDLOS. Additionally, the MoE has established ICT in education as a priority reform of the newly created delivery unit known as the National Education Reform Secretariat (NERS) (Ministry of Education, Ghana, Reform Secretariat, 2019) to coordinate sector reform priorities, including ICT reforms. The stated objectives of the ICT reforms are to:

> "*develop early desire and competencies in children to use ICT, equip pre-tertiary learners with ICT skills, infuse ICTs into education management, and transform teacher development and tertiary education through technology-based training*" (Ministry of Education, Ghana, 2018b, p. 117).

Table 5 describes the roles of additional government partners in EdTech.

Table 5. Key government partners in EdTech

Ministry / Agency	Roles and responsibilities in EdTech
Center for National Distance Learning and Open Schooling[8]	• Developing technology-based teaching and learning programmes for pre-tertiary education

[8] Editor (2017), as available at https://comosaconnect.org/centre-for-national-distance-learning-and-open-schooling-cendlos/

Ghana Education Services[9]	• 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) [10]	• Establishing, managing and maintaining public libraries (individual, school and mobile lending programmes) • ICT training to assist users in searching and retrieving information
Ministry of Communications Ghana Investment Fund for Electronic Communications (GIVEC)[11] — funded by contributions from telecom companies	• 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)[12] (implementing arm of Ministry of Communications Ghana)	• Implementing policy • Providing IT solutions to Ministries, Departments and Agencies

6.2. Non-governmental agencies

The MoE has been implementing EdTech initiatives since 2014 with the support of the key development partners, namely DFID, UNICEF, USAID and the World Bank. Key Implementing NGO partners include the Varkey Foundation, Eneza and World Reader. Table 6 lists key funding and implementing partners alongside the initiatives they are supporting.

6.3. EdTech initiatives

Table 6 highlights recent, large-scale initiatives, for many of which GES is a core implementing partner. Several government initiatives introduced over the years have included an EdTech component. However, it has been difficult for the MoE to track and monitor these efforts because they typically are implemented on a small scale and there is a lack of coordination in the sector (Expert 1, 2020). Box 2 briefly describes how the MoE is quickly mobilising to use technology to support remote learning and distance education in response to Covid-19-related school closures.

[9] Ghana Education Service, as available at https://ges.gov.gh/
[10] Ghana Library Authority (2020a), as available at https://ghanalibrary.org/
[11] Ghana Investment Fund for Electronic Communications (2019), as available at https://gifec.gov.gh/
[12] National Information Technology Agency (2017), as available at https://nita.gov.gh/

Table 6. Recent EdTech initiatives in Ghana

Initiative	Details
Eneza Education[13]	**Overview:** Eneza offers a mobile-phone-based learning platform that allows users to access lesson programmes and ask teachers clarifying questions through SMS **Target group:** Primary and secondary students and teachers living in rural and marginalised communities where it can be a challenge to access teaching and learning resources that are aligned with the national curriculum **Technology:** Basic mobile phones are used to deliver supplementary learning and revision materials to students. **Reach / scale:** One million learners are using the Ghana Eneza platform and over 6,500 teachers have been trained to use the platform (MIT Solve, 2020.) **Implementing organisations:** Eneza Education **Government partners:** GES **Status of implementation:** Ongoing
e-Transform Ghana Project [14]	**Overview:** The overarching objective of the eTransform Project for Ghana is to improve the efficiency and coverage of government-service delivery using ICT. **Target group (for education component):** Senior high schools **Technology:** 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 and teaching and learning aids and to facilitate knowledge exchange. Additionally, the project will provide connectivity to 55 secondary schools with high need (World Bank, 2019b). **Reach / scale:** estimated target of 5,000 students and teachers using the portal (World Bank, 2019b) **Implementing organisations (for education component):** The World Bank. **Government partners: (for education component):** MoE / GES, Ministry of Communications **Status of implementation:** The project began in October 2013 and is expected to run through December 2020

[13] Eneza Education r2019), as available at https://enezaeducation.com/ghana/
[14] World Bank (2013), as available at http://documents1.worldbank.org/curated/en/233911468253466632/pdf/802930PAD0REVI00Box379839B00PUBLIC0.pdf

Ghana Accountability for Learning Outcomes Project (GALOP)[15]	**Overview:** The project has four components: 1. strengthening teaching and learning through support and resources for teachers; 2. strengthening school support, management, resourcing; 3. strengthening accountability systems for learning; 4. institutional strengthening, monitoring and research. GALOP builds on previous initiatives with EdTech components, including the UNICEF-supported Mobile School Report Card and the USAID-funded Partnership for Learning Project. **Target group:** KG (KG 1 and 2) and primary (P1 and P6) **Technology:** At 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 digitise 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 — part of what it calls Mezzanine solutions[16] — for reporting school-level data including student and teacher enrollment and attendance. **Reach / scale:** The project is expected to benefit 3.8 million people including, students, teachers, headteachers, circuit supervisors, regional education offices and district education offices. **Implementing organisations:** The project is led by the World Bank. It will build on and scale-up initiatives of other development partners including the USAID supported Learning Project, the UNICEF supported STARS project and the Worldreaders e-reading programme, among others. **Government partners:** MoE / GES, NACCA, NIB, NTC **Status of implementation:** The project was approved in October 2019 and is expected to run through 2025.
Instant Schools Network[17]	**Overview:** Instant Schools is providing access to global and local educational resources in subjects including maths and sciences. **Target group:** Primary to secondary-school level learners **Technology:** Through a partnership with Learning Equality,

[15] World Bank (2020b), as available at https://projects.worldbank.org/en/projects-operations/project-detail/P165557?lang=ru
[16] Mezzanine (2020), as available at https://www.vodacom.com.gh/solutions/iot/mezzanine/
[17] Instant Network Schools (2020), as available at https://www.vodafone.com/about/vodafone-foundation/focus-areas/instant-network-schools

	Instant Schools provides learners with open educational resource content that is sourced from platforms like Khan Academy and aligned with the local curriculum. The service is free for Vodafone subscribers and is designed for simple, low-cost devices with basic data connectivity (3G). **Reach / scale:** One year after launch, the Instant Schools online portal had been introduced in over 40 schools in five regions and accessed more than 1.8 million times (ITU Digital Inclusion Division, 2018). **Implementing organisations:** Learning Equality **Government partners:** MoE **Status of implementation:** Launched in 2016, the programme is expected to expand in reach and scale over time. To keep the learning going during Covid-19, Vodafone is making new educational resources including Udemy and Perlego (online library of academic textbooks) available to customers and employees for free.
Local Content for African Libraries (LOCAL)[18]	**Overview:** An initiative to bring more local language books to libraries. **Target group:** Ashanti, Central and Volta regions of the country **Technology:** The project distributed e-readers and tablets. **Reach / scale:** The project involved nine community libraries in the three regions. Twenty-four librarians were trained and 450 devices were distributed to the libraries, targeting children aged 0–12 (Ghana Library Authority, 2020b). **Implementing organisations:** Worldreader **Government partners:** Ghana Library Authority **Status of implementation:** The project ended in 2019.
Making Ghanaian Girls Great (MGCubed)[19]	**Overview:** MGCubed aimed to improve literacy and numeracy outcomes of girls and ease their transition from primary to secondary school. **Target group:** Primary, junior high and out-of-school girls **Technology:** Qualified trainers in studios in Accra used solar-powered and satellite-enabled technology to deliver live interactive lessons in maths, English and gender empowerment to remote classrooms. **Reach / scale**: The programme impacted over 36,000 students

[18] Local Content for African Libraries (2020), as available at https://www.worldreader.org/our-solution/programs/library-reading/local/
[19] Making Ghanaian Girls Great (2018), as available at https://www.varkeyfoundation.org/what-we-do/programmes/making-ghanaian-girls-great

	and trained and certified 932 instructional leaders. **Implementing organisations:** Varkey Foundation with support from DFID Girls' Education Challenge. Key partners include Aleutia, Everonn and Gems Technologies **Government partners:** Girls Education Unit within GES and District Directorates of GES **Status of implementation:** The project ran from December 2014–September 2019.
Mobile School Report Card (mSRC)[20]	**Overview:** A pilot initiative to test an android-based mobile phone application for collecting school-level data for decision making **Target group:** Basic education schools **Technology:** An android-based application for collecting data and a dashboard for aggregating and viewing data **Reach / Scale:** 20 districts covering 1,880 schools **Implementing partners:** GES with support from UNICEF **Government partners:** GES **Status:** The pilot ran from 2015–2018 and the initiative is now being rolled out nationally under GALOP
Ghana Reads[21]	**Overview:** A project to expand universal literacy by introducing new ways of learning 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. **Target group:** Basic education schools **Technology:** Low-cost android tablets and a Raspberry Pi server, that houses OLE's Basic eLearning Library (BeLL) **Reach / Scale:** Initially piloted in 28 schools but expanded to 50 schools with the support of World Vision, serving 6,000 K-6 students in 8 of Ghana's 16 regions. **Implementing partners:** Open Learning Exchange Ghana (OLE) with the support of All Children Reading Partners, namely USAID, Australia AID and World Vision **Government partners:** MoE **Status:** 2012–2014 (pilot); 2014 — (expansion with the support of World Vision)

[20] Mobile School Report Card (2020), as available at https://www.msrcghana.org/
[21] Ghana Reads (2017), as available at http://www.oleghana.org/index.php?option=com_sppagebuilder&view=page&id=21&Itemid=693

Secondary Education Improvement Program (SEIP)[22]	**Overview:** The project is supporting efforts to improve the quality of senior high schools and strengthen the implementation, management, research and monitoring and evaluation capacity of the MoE / GES. **Target group:** Low-performing senior high schools **Technology:** The project is supporting 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. **Reach / scale:** The project is expected to benefit 30,000 new students in secondary education programmes, 150,000 students in low performing schools and 2,000 senior-high-school teachers and headteachers, as well as other education officials. **Implementing organisations:** The project is led by the World Bank. **Government partners:** MoE / GES **Status of implementation:** The project began in May 2014 and is expected to run through November 2021.
Train for Tomorrow[23]	**Overview:** Interactive, activity-based training to improve pedagogical methods and subject knowledge of teachers **Target group:** Primary, junior-high-school and senior-high-school teachers in Ghana's Eastern Region **Technology:** Face-to-face training sessions are followed by distance-learning programmes conducted by master trainers in Accra and made possible by satellite link and solar-powered infrastructure. **Reach / scale:** The programme trained and certified 836 instructional leaders and had an impact on 423 schools through 40 satellite-connected school hubs. **Implementing organisations:** Varkey Foundation with funding from Dubai Cares. **Government partners:** MoE **Status of implementation:** The project ran from 2016–2018.
Transforming Teacher Education and Learning	**Overview:** A six-year programme aimed at strengthening pre-service teacher education in Ghana's colleges of public

[22] World Bank (2020a) https://projects.worldbank.org/en/projects-operations/project-detail/P145741?lang=en
[23] Train for Tomorrow, Ghana (2018), as available at https://www.varkeyfoundation.org/what-we-do/programmes/train-for-tomorrow-ghana/

(T-TEL)[24]	education (CoEs) **Target group:** Teachers entering the workforce **Technology:** There are plans to introduce a College Education Information Management System (CEMIS). However, a recent survey[25] indicates that presently CoEs have limited capacity (infrastructure, policy, human resources, access to infrastructure) to effectively engage with the system. **Reach / scale:** 46 Public Colleges of Education across the country **Implementing organisations**: The project is managed by Cambridge Education with support from UKAID. Other partners include UNICEF Ghana, World University Service of Canada and Voluntary Service Overseas (VSO). **Government partners:** MoE, GES, National Teaching Council (NTC), National Council for Tertiary Education (NCTE), National Accreditation Board (NAB) and National Inspectorate Board (NIB) Five university partners: University of Cape Coast (UCC), University of Education Winneba (UEW), University of Ghana (UG), the University of Development Studies (UDS) and Kwame Nkrumah University of Science and Technology (KNUST) **Status of implementation**: The project started in November 2014 and is expected to end in December 2020
USAID Partnership for Education: Learning[26]	**Overview:** An early-grade learning programme offered in 11 approved Ghanian languages for KG2–Primary 2 that shifts to English learning materials in Primary 2 to facilitate the transition to Primary 3 and grades beyond, where English is the primary medium of instruction. The project also piloted a learning and teaching model for maths in 60 primary schools. **Target group**: KG–Primary 2, early grade teachers and supervisors **Technology:** Tablets are used to monitor fidelity of implementation and monitor coaching and in-service school-based teacher education activities. This information is fed into dashboards that are used to monitor progress and inform iterative improvements in implementation. **Reach / scale:** The early-grade reading programme was scaled throughout Ghana from 2017–2019. It was implemented in over 7,000 schools in all 10 regions of Ghana, with instructional materials translated into 11 local languages. In total, more than

[24] Transforming Teacher Education and Learning (no date), as available at https://www.t-tel.org/home
[25] Cambridge Education (2017), as available at https://www.t-tel.org/files/docs/Learning%20Hub/Research%20and%20evidence%20-%20teacher%20education%20in%20Ghana/ICT%20Survey%20Report%20.pdf
[26] USAID (2020), as available at https://www.globalreadingnetwork.net/resources/usaid-partnership-education-learning

	700,000 students and 51,000 teachers and supervisors were enrolled in the programme (Social Impact, 2020). **Implementing organisations:** The project was led by FHI360 and supported by the following core partners: The Ghana Institute of Linguistics, Literacy and Bible Translation (GILLBT) and The Olinga Foundation for Human Development Resource partners: blueTree Group, School to School International (STS International), SIL LEAD, Varkey Foundation, Young Educators Foundation (YEF). **Government partners:** MoE / GES **Status of implementation**: The project ran from December 2014–September 2019.

Box 2. The Government of Ghana education sector response to Covid-19

On March 16, 2020, the Government of Ghana announced the closure of all schools, colleges and universities to prevent any further spread of Covid-19 following the identification of the country's first positive cases. The shutdown has affected approximately 9.2 million learners from KG–SHS and 500,000 tertiary learners. With the spread of Covid-19 and the closing of schools, in April 2020, the MoE and GES launched the Covid-19 Coordinated Education Response Plan for Ghana[27]to address immediate learning needs, ensure continued learning for students who were home from school, plan for the return of students to schools and build a long-term strategy to strengthen the education system's ability to respond to future crises. After a review of available infrastructure and constraints, the MoE and GES have identified radio, TV and the internet as the most appropriate platforms for delivering learning and teaching content to students and were approved for $15M in support from the Global Partnership for Education to implement the plan in May 2020. The MoE and GES have taken several measures to keep the learning going for students, including the following:

- Secured commitment from the Ghana Broadcasting Corporation to provide a production studio and technical assistance in developing radio and TV content; launched TV learning for senior high schools on April 3, 2020 (Mohammed, 2020). On May 6, 2020, GES Ghana Learning TV launched lessons for KG, primary and junior high school (Avenuegh Online Portal, 2020).
- Rolled out of the icampus portal with teaching and learning content in core subjects;
- Established a partnership with MTN and Vodafone to zero-rate digital content.

[27] Ministry of Education, Ghana (2020), as available at https://planipolis.iiep.unesco.org/sites/planipolis/files/ressources/education-response-plan-to-covid-19-in-ghana-april-2020-1.pdf

7. Looking Ahead

The MoE's 2018–2030 Education Sector Strategic Plan outlines strategies for improving EdTech at a systems level that also align with the findings in this survey. This rapid scan suggests that there would be value in revisiting the 2015 ICT in Education policy to address the lack of coordination in EdTech programmes and provide a structure for private-sector partnerships. Limited government resources, weak infrastructure and low teacher capacity to use technology in teaching and learning also pose significant constraints. There is also the need for stronger collaboration between the MoE and partners in relevant sectors like the Ministry of Communication. However, there is a high level of commitment to addressing these issues in the MoE and many encouraging signs, including the planned ICT reforms; these signal a promising path forward in building a strong foundation for the appropriate and effective use of technology to improve learning outcomes in Ghana.

8. Further reading

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10. List of interviews with key informants

Key Informant Interview. Expert 1. (March 10, 2020)

Key Informant Interview. Expert 2. (March 10, 2020)

Key Informant Interview. Expert 3. (March 11, 2020)

Key Informant Interview. Expert 4. (March 20, 2020)

Key Informant Interview. Expert 5. (March 26, 2020)