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EdTech in Pakistan: A Rapid Scan

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Country 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. This includes policies, government leadership, private-sector partnerships, and digital infrastructure for education. The scans are intended to be comprehensive but are by no means exhaustive; nonetheless, we hope they will serve as a useful starting point for more in-depth discussions about opportunities and barriers in EdTech in specific countries, in this case, Pakistan. Although the scans mainly explore national-level EdTech policies, in this case, we also examine education sector plans and EdTech in two provinces — Punjab and Sindh, as they are home to 75% of the country's population. Further, Pakistan's decentralised education system, introduced with the 18th Amendment is largely managed at the provincial level, with some guidance and direction from the federal government.

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 Pakistan.

Table 1. EdTech in Pakistan

Policies	• National Information and Communication Technology Strategy for Education in Pakistan, 2004–05 • Digital Pakistan Policy 2018 • Punjab IT Policy 2018
Infrastructure	• 62% of primary schools have electricity, compared to 79% of middle schools, 91% of high schools and 97% of higher secondary schools (Pakistan Education Statistics 2016–2017). • 91% of households (PSLM 2018–2019) have grid electricity while 34% have solar electricity (ASER, 2019). • 34% of households have internet connectivity (PSLM 2018–2019). • 95% of households own a mobile phone (PSLM 2018–2019). • At the national level, household ownership of computers (14%) (PSLM 2018–2019) and radios (6%) is low (Pakistan DHS 2017–2018).
Partners and initiatives	• The Ministry of Information Technology and Telecommunication is responsible for creating an enabling environment for the use of educational technology. • The Punjab Information and Technology Board has a key role in EdTech in Punjab province. • Similarly, in Sindh province, the Information Science and Technology Department plays a key role in EdTech.

	• USAID, DFID, World Bank and GIZ have played a key role in supporting EdTech initiatives in Pakistan.
Covid-19	• Pakistan was the fifth country in the world to close schools from the last week of February 2020. Forty million students have been affected by the school closures. • On May 4, 2020, the Federal Ministry of Education and Professional Training announced Pakistan's National Education Response and Resilience Plan (K-12) for Covid-19 developed through a rapid consultative process.

2. Country overview

Pakistan has a federal government system consisting of seven federating units — four provinces, two autonomous regions and one capital territory.

For the last four decades, the country has witnessed several natural and human-made calamities, including massive floods, hurricanes, a powerful earthquake that caused nearly 100,000 deaths, political instability and terrorism and extreme violence associated with the 'war on terror'. All of this has severely affected Pakistan's economy, but it has also had a devastating impact on social, political and educational institutions. According to the World Economic Forum Global Competitiveness Report 2019, Pakistan is ranked 110 out of the 141 in the Global Competitiveness Index (GCI) while UNDP's Human Development Report 2019, ranks Pakistan 152 out of 189 countries.

3. Education system overview

Article 25-A of the constitution (right to education) states: "The State shall provide free and compulsory education to all children of the age of five to sixteen years in such manner as may be determined by law." The Constitution further states that "The State shall remove illiteracy and provide free and compulsory secondary education within [the] minimum possible period" (Article 37-B).

The 18th constitutional amendment passed by the parliament of Pakistan in 2010, made education a provincial issue. The provinces of Sindh and Punjab have translated this legal responsibility into the Free and Compulsory Education Act, passed in 2013 and 2014, respectively.

In terms of curricula and syllabuses, Pakistan has three main education systems that function in parallel. There are public and private schools implementing the national curricula, private schools that follow the Cambridge Examination system, and Deeni Madrassas (religious seminaries) that teach the curriculum mainly produced by Wifaq-Ul-Madaris, the largest federation of Islamic Seminaries in Pakistan.

The education system has four levels that are defined at the national level and implemented at the provincial level (Table 2).

Table 2. Structure of the public sector education system

School level	Age group	Certificate types	Certificate issuing authorities
Primary ([1]K–5)	5–10	Primary school certificate	School / District Education Department
Middle	11–13	Middle School Certificate	School / District Education Department
Secondary	14–15	Matric / Secondary School Certificate	Board of Intermediate and Secondary Education
Higher Secondary	16–17	Intermediate / Higher Secondary School Certificate	Board of Intermediate and Secondary Education

Pakistan is a signatory to several international treaties and instruments concerning free and compulsory education for all citizens. For example, the Universal Declaration of

Human Rights (1948), UNCRC (1989) ratified in 1990, the Dakar Framework of Action (2000), and UN Sustainable Development Goals.

3.1. Education sector progress and challenges

Pakistan has made serious efforts to improve access to and the quality of education with reforms happening at a pace that has been described as "frenetic". The Pakistan economic survey (2019) and the PLMS-HIES (2019) report an increase in enrollment, the number of teachers and schools. However, in light of the magnitude of challenges that Pakistan's education sector faces, progress has been marginal. Learning poverty in Pakistan or the inability to read and understand a short age-appropriate text by the age of ten is 16.3 percentage points worse than the average for the South Asia region and 19.5 percentage points worse than the average for lower-middle-income countries. Insufficient funding, inadequate or non-existent infrastructure, ill-equipped teachers, and poor governance have slowed the country's progress and reform efforts. Table 3 highlights key education statistics that give an overview of the sector.

According to the 2017 I-SAPS report cited in the Asian Development Bank Education Sector Assessment Report (2019), budget allocations for education in Punjab and Sindh in 2016–17 had limited financial space for education departments to invest in capacity-building and systems-strengthening activities. The report describes the composition of the budget allocation for primary education in Punjab as 96% salary, 2% non-salary and 2% development. At the secondary education level, 54% of the allocated budget is for salaries, 34% for development and 12% for non-salary expenditures. In Sindh, the composition of the budget allocation for primary and secondary education was 93% salary and 7% non-salary. Historically, development partners have had a significant role in supporting Pakistan's education portfolio (Asian Development Bank 2019, School Education in Pakistan: A Sector Assessment). Large donors such as DFID, the EU, GIZ and the World Bank provide general or sector budget support while smaller donors provide support to local and international NGOs.

The Asian Development Bank sector assessment report recommends targeted investments and programmes to improve completion rates and learning levels in both provinces. In addition to ensuring appropriate funding levels, it is equally important that education budgets are better spent (Naviwala, 2015).

Table 3.[1] Education statistics: key indicators (national data)

GDP on education	2.2%
Population — children aged 5–16	51,530,105
Number of children enrolled (urban)	14,975,711
Number of children enrolled (rural)	25,709,408

[1] The statistics in this table come from the Pakistan Education Statistics 2016–17 by the Academy for Education Planning and Management and Annual Status of Education Report, ASER 2019; Pakistan Economic Survey 2018–19; Human Rights Watch 2018

Total number enrolled (urban and rural)	40,685,119
Total number enrolled (Gross)	34,205,220
Total number enrolled (Net)	28,685,802
aNER (adjusted net enrolment rate)	56%
Total number of out-of school children (aged 5–16)	22,844,303
Out-of-school children (boys)	10,683,206
Out-of-school children (girls)	12,161,097
Children who have never attended school	17,513,966
Children who have dropped out	5,330,337
Literacy score	At grade five, 59% of children can read a simple story in Urdu and 50% in English
Numeracy	At grade five, 57% of children can do 2-digit division in arithmetic
Gender Disparity	32% of primary-school-age girls are out of school as compared to 21% of boys
Pupil–teacher ratio	primary 32, middle 21 and secondary and higher secondary 23
Pupil–classroom ratio	primary 38, middle 33 and secondary and higher secondary 43
Number of schools using multi-grade teaching	46% of primary schools and 18% schools
Ratio of primary schools to middle schools	3
Attendance in government schools	Teachers 87%, Students 84%

3.1.2 Data on children with disabilities

According to the Annual Status of Education Report (ASER) 2019, at the national level, 22.2% of the surveyed government schools served children with disabilities compared to 16.6% of private schools. The number of children with disabilities in government schools as reported by the head teacher / school in-charge was 2,315, compared to 1,212 in private schools. These numbers are likely to be underreported given that

household and school-level questionnaires in Pakistan do not probe beyond a yes / no question on disability and fail to capture different types of disabilities.

3.2. Education Sector Plan

The Education Sector Assessment Report 2019 developed by the Asian Development Bank found that Sindh and Punjab provinces largely use technology to monitor teacher attendance and student results for accountability purposes, and to communicate management decisions. Current sector plans in both provinces prioritise key actions for integrating the use of technology in education.

3.2.1 Sindh Education Sector Plan and Roadmap

Sindh's Education Sector Plan and Roadmap 2019–2024 is a follow-on to the School Education Sector Plan 2014–2018 that targeted early childhood education as a reform priority but made slow progress in implementation (Asian Development Bank 2019, School Education in Pakistan: A Sector Assessment). The sector plan and roadmap sets out a long-term strategic vision for the government, focusing on:

- Ensuring inclusive and equitable access to quality education through various formal and non-formal educational modalities;
- Achieving effective learning outcomes through child-friendly and quality learning environments;
- Improving effective governance in the education sector through strong accountability systems, adequate resources and strong capacities at all levels, without political interference and with effective political will.

The strategic vision outlines three thematic goals and a set of priorities and objectives for each goal.

Table 4. Sindh province: education sector goals, priorities and objectives

Goal	Priorities	Objectives
Access	Increase equitable enrollment and ensure retention for children and adolescents at all levels, including provision of literacy for youths.	• Reach out-of-school children and youth • Equitable and adequate provision of school infrastructure • Equitable enrollment and retention
Quality	Improve capacity of quality delivery systems at provincial and district levels, including meritorious teacher recruitment, teacher training and professional development; curriculum, textbook and learning materials;	• Merit-based recruitment, qualification and professional development • Quality inputs and processes

	student learning outcomes and quality assurance.	
Governance	More effective and accountable use of resources at all levels.	• Professional educational leadership and management • Improved resources allocation and utilisation • Effective strategic planning and monitoring and education

3.2.2 EdTech priorities in Sindh's school education sector

The Sindh School Education Sector Roadmap (2019–2024) outlines the following priorities for EdTech in the region:

- Digitise the teaching / learning resources and assessment practices in public schools;
- Enable students and teachers to use technology and improve learning outcomes;
- Establish an e-assessment system;
- Seek services of organisations developing EdTech to make the content child friendly and more engaging for all learners, especially those in rural areas.

3.2.3 Punjab's Education Sector Plan

The Punjab Education Sector Plan 2019 / 20–2023 / 2024 updates the Punjab Education Sector Plan 2013–2017. It identifies three overarching strategic areas for advancing education sector reforms in Punjab, including:

1. Quality and learning outcomes
2. Access and equity
3. Governance and management

The plan also identifies five priority programmes that align with these three areas:

1. Improve teacher and learning practices to achieve better learning outcomes.
2. Provide adequate and sufficient access to education for children from pre-primary to secondary, including marginalised children and those with special needs.
3. Promote quality education in a safe, inclusive environment for children.

4. Strengthen good governance of the education sector for equitable access and high-quality education.
5. Promote effective leadership and management of the education sector for better service delivery.

3.2.4 EdTech priorities in the Punjab school education sector plan

The Punjab School Education Sector Plan (2019 / 20–2023 / 2024) outlines the following priorities for EdTech in the regions:

- Introduce a strong focus on science, technology, engineering, arts and mathematics (STEAM) with a focus on secondary grade and technical vocational programmes;
- Leverage technology to improve teacher continuous development programmes.

4. EdTech policy and strategy

In this section, we describe Pakistan's national ICT policy and include a brief look at the ICT in education policy.

4.1. National Policy

Pakistan formulated its first ever National Information & Communication Technology (NICT) Strategy for Education through a consultative process in 2004–2005.The NICT strategy acknowledges the potential for ICT in education to improve the quality and accessibility of education, strengthen teacher education and contribute to gains in learning. The strategy outlines the following actions for ministries, education departments and district education offices:

- Establish an online educational portal with appropriate content for students;
- Collect and adapt international open resources;
- Maximise opportunities for professional development through different ICT platforms such as interactive radio instruction (IRI), television, open distance learning and online resources that are context-specific and geographically appropriate;
- Adapt international ICT standards for education;
- Provide distance learning to a large number of individuals by establishing virtual classroom education programmes using online, internet and / or video facilities.
- Establish a national educational intranet (linked to the internet) to enable sharing of electronic libraries of teaching and research materials among educational institutions and faculty;
- Enhance ICT infrastructure of schools with a focus on schools above grade 8.

4.2. ICT in Education Policy

The National Education Policy (2009) adopted by all federating units emphasises the use of ICT in education. The policy promotes the use of ICTs in line with the 2004–2005 NICT Strategy. It provides guidelines for integrating ICTs into education and strengthening non-formal education systems. The policy highlights that "ICTs shall be utilised creatively to assist teachers and students with a wide range of abilities and from varied socio-economic backgrounds." Given the decentralised nature of the education system, Pakistan requires a unique and differentiated approach to work with the provinces.

In 2018, the Federal Ministry of Education and Professional Training published the National Education Policy Framework, as guidance for the provinces and to re-emphasise the importance of using technology in education, specifically to:

- enhance teacher and student content knowledge;
- improve access to free education content;
- provide offline content solutions and options in remote areas;

- strengthen education management systems.

The Pakistan Economic Survey Report 2018–19 recognises the importance of digital solutions for the economic growth and transformation of under-served populations. The report describes how, with the advancement of technologies and the proliferation of digital platforms and enabling apps, user behaviour is shifting from voice- and data-centric services to app-centric services. Under Vision Pakistan 2025, the Ministry of Information and Technology has planned to increase broadband spectrum currently at 3% to 30% by 2025, across the country. Finally, the guiding framework for the recently introduced Single National Curriculum also mentions the use of ICT.

5. ICT infrastructure

The government of Pakistan recognises the economic benefits that ICT brings to all sectors and strives to build a strong digital ecosystem (Digital Pakistan 2018). The Telecom sector in Pakistan is deregulated and provides a level playing field for the telecom companies operating in Pakistan for increasing connectivity and quality of services across Pakistan. Likewise, the Universal Service Fund is increasingly expanding ICT infrastructure in hard-to-access geographical areas on a priority basis.

At the household level, ownership of TV is high in Pakistan (74%), as is ownership of mobile phones (76%) (Table 5). In contrast, only 6% of households own a radio. Similarly, ownership of computers (14%) and access to the internet (25%) are both low. According to the Pakistan Telecommunication Authority (PTA 2019) and the Techjuice report (2020), 76% of the population possess basic feature mobile phones and 56% of the population own smartphones. The ASER (2019) and PTA (2019) reports reveal that 91% of households use WhatsApp and 70% use SMS. Access to WhatsApp is similar across urban and rural households (93% and 90%), while access to SMS services is more prevalent among urban (80%) than rural households (59%).

Table 5.[2] Percentage of households with a television, radio, computer, mobile phone and smartphone and that have access to the internet at home and to SMS and WhatsApp

	Rural	Urban	National
TV	60	88	74
Radio	7	5	6
Computer	7	21	14
Internet connectivity	15	36	25
Basic feature mobile phone	66	85	76
Smartphone	38	73	56
SMS service	59	80	70
WhatsApp service	90	93	91

The PSLM (2019) survey report discloses that individuals mostly commonly use computers / laptops / tablets for entertainment and to perform basic functions — 65% use it for copying–moving, 56% copying–pasting, 47% for sending an e-mail, 19% for

[2] To accelerate digital transformation in Pakistan (2019) GSM Association, Pakistan Social and Living Standards Measurements (PSLM), 2018–19, https://www.pta.gov.pk/en/telecom-indicators; Annual Report 2019, Pakistan Telecommunication Authority; DHS, 2017–18 — Final Report; Potential benefits from sub-700 MHz spectrum in Pakistan: A report by GSMA 2015 https://www.techjuice.pk/mobile-phone-users-in-pakistan-crosses-161-million-mark/

connecting–installing, 31% for finding–downloading, 32% for transferring files, 43% for social media and 59% for entertainment. Only 26% of individuals use these tools for more advanced activities like working on spreadsheets, preparing powerpoint presentations (18%) or programming (17%).

Table 6.[3] National Data on ICT Skills: Percentage of individuals with use of computer / laptop / tablet and by type of ICT Skill

ICT Skill	Percentage
Copy–move	65
Copy–paste	56
Send e-mail	47
Spreadsheets	26
Connecting–installing	19
Finding–downloading	31
Electronic presentation	18
Transferring files	32
Programming	17
Social Media	43
Entertainment	59

[3] Pakistan Social and Living Standards Measurements (PSLM), 2018–19

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 Pakistan, including government and non-governmental agencies, as well as EdTech initiatives.

6.1. Government agencies

Table 7. Government partners in EdTech

Ministry / Agency	Roles and responsibilities in EdTech
Federal Ministry of Education and Professional Training	• Ensure national cohesion on education policies and reforms, including ICT • Foster international cooperation and coordination on education matters • Collect, analyse and disseminate information on key education indicators
Ministry of Information Technology and Telecommunication	• Formulate the national policy for the development and improvement of Information Technology and Telecommunications, including related infrastructure • Promote information technology applications • Develop guidelines for the standardisation of software for use within the government
In the province of Punjab	
School Education Department-Government of Punjab	• Legislation, policy formulation and planning for school education; including ICT • Formulation of curricula, syllabuses, production and publication of textbooks and teaching and learning materials (print and digital) for grades K–12 • Monitoring, assessment, examination and evaluation of school systems • Development of education workforce (pre-service and in-service teacher education programme) • Planning, provision, management and monitoring of school infrastructure and grants to students

	• The Programme Monitoring and Implementation Unit supervises and manages monthly school monitoring activities and the annual school census; data are collected by monitoring and evaluation assistants who digitally submit forms as they are conducting spot visits to schools, giving it access to real-time data
Punjab Information Technology Board	• Maintaining the foundational information Technology (IT) infrastructure and system of Punjab • Provide IT system solutions and standardisation for all departments of the government of Punjab
In the province of Sindh	
Sindh Education and Literacy Department	• Legislation, policy formulation and planning for school education; including ICT • Formulation of curricula, syllabuses, production and publication of textbooks and teaching and learning materials (print and digital) for grades K–12 • Monitoring, assessment, examination and evaluation of school systems; the Sindh School Monitoring System collects, analyses and disseminates real-time data on key school-level indicators • Development of education workforce (pre-service and in-service teacher education programme) • Planning, provision, management and monitoring of school infrastructure and grants to students
Sindh Education Foundation (SEF)	• A semi-government organisation established in 1992 that has been supporting the use of educational technology in teaching and learning, including, through the provision of tablets for students and training, to help teachers supplement their teaching with ICTs in Sindh province

Information Science and Technology Department	• Maintain the foundational IT infrastructure and system • Provide IT system solutions and standardisation for all government departments.

6.2. Non-governmental agencies

USAID, DFID, World Bank, Asian Development Bank, Islamic Development Bank, GIZ, JICA, CIDA and the European Commission have a long history of supporting the education system in Pakistan. The China International Development Cooperation Agency and the Bill and Melinda Gates Foundation are recent additions to the list. UN Agencies have also been long-term official partners with the government of Pakistan. Of these partners, USAID, DFID, World Bank and GIZ have played a key role in supporting EdTech initiatives. DFID funding supports initiatives that include Ilm IDEA2 which awards grants to local, social EdTech entrepreneurs for developing customised EdTech products / solutions for the education sector in Pakistan. One of the entrepreneurs, SABAQ / MUSE, described in greater detail in Table 7, has partnered with the federal and provincial ministries of education to provide distance-learning solutions to children and families during school closures in response to Covid-19.

In 2015, the government introduced an INGO Policy that outlines the rules and regulations for international NGOs working in Pakistan, including a requirement to sign an MOU in advance of any operations. This restriction has limited the participation of INGOs working in the education sector.

National NGOs supporting EdTech initiatives in Pakistan include, the Aga Khan Foundation, Pakistan, The Citizens Foundation, READ Foundation, Idara-e-Taleem-oAagahi, Sabaq and Development in Literacy.

Further, the National Incubation Center, a public–private partnership between the Ministry of Information Technology and Telecommunication, Ignite – National Technology Fund, Jazz and Teamup plays a catalytic role in facilitating innovative EdTech startups. The Jazz Foundation's Make Your Mark Programme has launched the Jazz Smart School Programme in collaboration with Knowledge Platform, a blended-learning solution that uses technology to help teachers fill gaps in knowledge, this is described in greater detail in Table 8. Other organisations that are broadly supporting entrepreneurship in technology include Invest2Innovate and the Social Innovation Lab at LUMS. Lastly and notably, the Ilm Association is a newly formed association that has been established to represent the education innovation industry in Pakistan.

6.3. EdTech initiatives

Although we have focused our scoping activities on initiatives in primary and secondary education, it is worth highlighting Pakistan's two technology-based higher education institutions. The first is the Virtual University, a public-sector, not-for-profit institution that has been using TV broadcasts and the internet to deliver courses to students across Pakistan since 2002. The other, Allama Iqbal Open University opened its doors in

1974 with the aim of providing education opportunities for students who cannot leave their homes and jobs, including women and learners in remote areas of the country.

Table 8 presents information about selected local EdTech initiatives in Pakistan. The descriptions of the initiatives are based on information available on the internet. We used the following criteria to determine which initiatives to include or exclude:

1. The initiative is developing and promoting teaching and learning using EdTech for learners in the 5–16 age group.
2. The initiative has national reach or is implemented in the provinces of Sindh or Punjab.
3. Preference is given to initiatives that are owned by the government or have developed a partnership with the government.

Table 8. Key EdTech initiatives in Pakistan

Initiative	Details
Aahung Pakistan	**Overview:** A Karachi-based NGO with national outreach. Since 2010, it has aimed to improve the sexual and reproductive health and rights (SRHR) of men, women and adolescent girls across Pakistan. Aahung Pakistan has a long history of successfully implementing life-skills-based education for young girls in Pakistan especially in slums and the remotest areas. **Target Group:** Adolescent girls (for life-skills-based education). **Technology:** AR (augmented reality) Videos / audios hosted on their official website for online access. **Reach / Scale:** Punjab, Sindh and nationally **Implementing organisation:** Aahung Pakistan **Government Partner:** Ministry of Human Rights, Health and Provincial Women's Development Departments, Population Welfare, Health and Education **Status of Implementation: 2010 –**
Bolo (Read Along App by Google)	On May 8, 2020, Google Pakistan launched a local version of Read Along Bolo (*bolo* means speak) as an educational response to Covid-19.
KarMuqabla	**Overview:** KarMuqabla is a product of Houndbyte Technologies accessible through the website. **Target Group:** Grades 5–10

	Technology: digitisation of textbooks (interactive pdfs), gamification of the content (children play educational games). **Reach / Scale:** n/a **Implementing organisation:** Houndbyte Technologies **Government Partner:** n/a **Status of Implementation:** Ongoing
Knowledge Platform	**Overview:** Knowledge Platform is a Singapore-based, global company founded in 2000, focusing on a number of countries in Asia including Pakistan. In Pakistan, Knowledge Platform is implementing two initiatives: Learn Smart Pakistan (a free, cloud platform for students) and Learn Smart Classroom (in-school, blended-learning system platform). **Target Group:** K–12, teachers and educational institutions / systems. **Technology:** In-school blended-learning solution. Laptops are pre-loaded with digital lessons containing videos, class activities and assessments. Teachers are empowered to blend these digital lessons with their traditional teaching. Mobile data is transferred to a cloud based learning management system (LMS), data / files can be retrieved by teachers and students at home. **Reach / Scale:** The app is available on Google Play and used in government schools in Islamabad Capital Territory and private schools in other parts of Pakistan. **Implementing organisation:** Knowledge Platform **Government Partner:** Federal directorate of education, Islamabad, School Education Department, Punjab, Federal Ministry of Education **Status of Implementation:** Ongoing
SABAQ Foundation	**Overview:** Sabaq Foundation Trust commonly known as Sabaq Foundation or 'Sabaq' founded in 2012. **Target Group:** Grades 6–12 **Technology:** Pre-built Sabaq Lite consists of a Raspberry Pi computer with 128GB SD Card, a Wi-Fi Router, Clickers and Uninterruptible Power Supply (UPS) with 6–8 hours

	of battery backup. **Sabaq Lite** is being provided to schools as an offline solution, and the videos and practice tests do not require an internet connection. Online materials are also accessible on their website. **Reach / Scale:** National **Implementing organisation:** Sabaq Foundation **Government Partner:** Federal Ministry of Education **Status of Implementation:** Ongoing
SABAQ&MUSE	**Overview:** SABAQ is an EdTech organisation promoting the use of technology in education and is a subsidiary of Multinet Pakistan, a leading provider of information and communication solutions. **Target Group:** Primary grades. The content covers Urdu, maths, science and Sindhi **Technology:** SABAQ Tab, a 7" Android tablet containing Kindergarten to Grade 5 content; the SMART Kit, a device to convert any LED and projector display into a SABAQ teaching resource; gamified apps and the SMART monitoring and evaluation portal. Muse is an e-learning app developed by SABAQ that is available on Google Play **Reach / Scale:** SABAQ's digital content is being used in government and foundation schools across Pakistan as well as in Citizens Foundations schools, one of the country's largest education not-for-profit organisations. To ensure learners can access its content, SABAQ has established 509 SABAQ Centers in three districts of the province of Sindh with an outreach of 21,369 children (2018). **Implementing organisation:** SABAQ Foundation **Government Partner:** Federal Ministry of Education, Government of Sindh, State of Azad Jammu and Kashmir, and Gilgit-Baltistan **Status of Implementation:** Ongoing
Taleemabad	**Overview:** Taleemabad platform is a project of Orenda Private Limited, a local social entrepreneurial initiative launched in 2017. The platform initially produced Khan Academy-like videos for young children, but after learning from experience switched to developing

	animated cartoon series called 'Taleemabad'. Taleemabad receives support from the Malala Fund. **Target Group:** Primary and middle grades **Technology:** Digital content is produced with VR (virtual reality), AVR (augmented virtual reality) and animations. In addition to an Android app Taleemabad uses closed data loops, has offline availability and is integrated with Google firebase products. **Reach / Scale:** National, with 179,000 beneficiaries reached **Implementing organisation:** Orenda Private Limited **Government Partner:** n/a **Status of Implementation:** Ongoing
TeleTaleem	**Overview:** TeleTaleem (T2), a social enterprise, has been leveraging ICT to connect users with quality learning opportunities across all boundaries since 2010. **Target Group:** Pre-primary up to higher secondary grades, teachers, school and district educational leadership. Technology: • T2 Mobile Van (with satellite based internet connectivity, an Uninterruptible Power Supply and tablets that children can use and return) • Management: (registration, scheduler, course design, assignments and lesson plans) • Content Management: (training videos, animated content, activity projects and e-textbooks) • Live Virtual Class: (ICT-assisted instruction, tools, audio / video interactivity and whiteboard) • Collaboration: (groups, forums, discussion board, chat) • Assessment: (grading tools, item bank) • Reporting: (teacher / learner attendance and teacher / learner performance) **Reach / Scale:** Country-wide **Implementing organisation:** A subsidiary of Comsat (pvt) ltd

	Government Partner: Federal and Provincial governments **Status of Implementation:** Ongoing
TEXT Private Ltd	**Overview:** Established in 2013, TEXT offers a low-cost, mobile-phone-based integrated learning and accountability system for teachers, parents and management. **Target Group:** Teachers, parents and management. **Technology**: Basic mobile phone with GSM enabled SIM. TEXT also runs data analytics to provide customised support and information to clients. **Reach / Scale:** TEXT implemented the ILMI and Sitarey model in government schools in Sindh (a cloud-based SMS service which connects teachers, parents, school-leaders and students to the Department of Education). The Sindh government also benefited from the TEXT platform by using it to monitor the fidelity of teacher attendance and system accountability. TEXT intends to expand the model in Balochistan province and Azad Jammu and Kashmir. **Implementing organisation:** TEXT Private Limited **Government Partner:** TEXT has partnered with various public-sector institutions which also include the Education and Health Department, Government of Sindh. **Status of Implementation:** Ongoing
toffeetv	**Overview:** toffee tv first went online in 2011. toffee TV is focused on promoting Urdu by producing videos of Urdu songs from storybooks that are / were popular among kids of a relatively older generation. **Target Group:** Primary and middle-grade children **Technology:** Animated videos. Videos are mainly hosted on their YouTube channel. **Reach / Scale:** Information not available **Implementing organisation:** toffeetv **Government Partner:** Federal Ministry of Education and Professional Training

	Status of Implementation: Ongoing
USAID funded Pakistan Reading Project (PRP)	**Overview:** The USAID-funded Pakistan Reading Project (PRP) initiated in 2013, developed early-grade reading learning materials in Urdu, Sindhi, Pashto, Balochi and Brahui in collaboration with federal and provincial education departments. **Target Group:** Grades 1 and 2 **(**PRP followed a research based approach for developing the reading learning material – a detailed framework for teaching reading) **Technology:** PRP has digitised most of its material in PDF format. They also have teaching and learning materials available in audio and video format. PRP rendered their digital content on tablets distributed by the project to the partner schools. **Reach/Scale:** 2,000,000+ **Implementing organisation:** International Rescue Committee **Government Partner:** Federal and all federating units (except for the Government of Punjab) **Status of Implementation:** Ongoing
Wondertree	**Overview:** Wondertree is a local EdTech start-up founded in 2015. It's mission is to design, develop and provide affordable education and therapeutic solutions to parents, children, families and teachers for children / persons with special educational needs and disabilities (SEND), especially those living in the under-served and rural areas of Pakistan. **Target Group:** children with SEND, parents and teachers **Technology:** augmented reality games for therapy and education. **Implementing organisation:** Wondertree.co **Government Partner:** n/a **Status of Implementation:** Ongoing
Family Education Services Foundation (FESF) Technology-Based Deaf	**Overview:** A project that aims to improve the quality of education for deaf children in Pakistan. The project provides schools and communities across the country who work with deaf children with a full repository of

Education Programme (TBDE)	digital learning resources in Pakistan Sign Language (PSL), free of cost. **Target Group:** Deaf children from K–12. **Technology:** Online portal with learning tutorials, life skills, stories and literacy programmes. **Implementing organisation:** Family Education Services Foundation **Government Partner:** The programme has been pilot-tested in numerous locations and integrated into FESF's five Deaf Reach Schools in the province of Sindh. **Status of Implementation:** Ongoing

7. Pakistan's national education response and resilience plan for Covid-19

Pakistan was the fifth country in the world, to close schools during the last week of February 2020. The government's priority was to ensure the wellbeing of teachers, students and families. The closure of educational institutions impacted more than 50 million learners from pre-primary up to university level. Federal, provincial and regional governments have been working hard to design and implement innovative strategies and solutions to ensure learning continues during school closures.

The Federal Ministry of Education and Professional Training with assistance from the Federal Ministry of Information and Broadcasting, and in partnership with private sector partners including the Sabaq Foundation and Taleemabad, responded to this challenge in a timely manner by launching distance learning initiatives such as Teleschool. Teleschool broadcasts teaching and learning content for different subjects for grades K–12 from 8 am to 6 pm daily. The provincial governments have also adopted innovative approaches to reach students and their families. The Punjab School Education Department launched TaleemGhar, a cable TV programme, and an online digital app called e-learn Punjab. The Taleem Ghar website has registered more than 700,000 visits since its launch. The Sindh Education and Literacy Department partnered with SABAQ/MUSE a local digital-content provider to make teaching and learning content available to children, teachers and parents through distance-learning platforms.

On May 4, 2020 the Federal Ministry of Education and Professional Training announced Pakistan's National Education Response and Resilience Plan (K-12) for Covid-19 developed in a rapid consultative process.

8. Looking Ahead

Pakistan's education sector is receptive and eager to test and trial EdTech solutions to advance learning outcomes in schools but many provinces have limited scope for setting up public–private partnerships in education. Further, although ICT-related legal provisions, policies, strategies and implementation frameworks introduced over the years by federal and provincial governments are helping to strengthen the ICT ecosystem, access to infrastructure, like computers and the internet, remains low and prohibitively expensive for most of the population. In the last five years, there has been a significant increase in local EdTech entrepreneurs, a positive and promising development for the country's education sector. However, the majority of these initiatives are pilot activities that have not yet reached scale and that require mentoring and financial resources to improve quality and better target tools and platforms to marginalised learners living in poverty and rural areas. The public education system also needs technical guidance and resources to leverage the available ICT options within the country and to adopt available open-distance learning resources from around the globe.

Going forward, it will be critical for the education sector to address these challenges and harness the full potential of educational technology, to eliminate learning poverty for all students in Pakistan.

9. Further reading

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[1] K is generally referred as Katchi which is a pre-primary grade, aimed at readiness for schooling. So, it is not counted for primary schooling years.

[2] Authentic source of National Data on radio listeners is not available; therefore, the data are not applicable for urban and rural areas