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POLICY BRIEF

Using EdTech in Response to Climate Emergencies in Pakistan

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Abbreviations and acronyms

MIS	Management Information System
NIETE	National Institute of Excellence in Teacher Education
NODP	National Open Data Portal
POHA	Participatory Online Home Learning Alternative
SEL	Social and emotional learning
TLC	Temporary learning centre
TIP	Targeted Instruction Programme

1. Introduction

Pakistan faces recurring climate-induced disasters that continue to disrupt education. This year's ongoing monsoon season, which began in June 2025, has already resulted in the deaths of more than 650 people, with several hundred injured and missing as a result of flash floods and cloudbursts (↑Ali, 2025). While northern and northwestern Pakistan, including regions in Khyber Pakhtunkhwa (KP), and some areas across Punjab have been impacted the most, devastation from floods is not unprecedented. Following a highly documented nationwide flood that hit Pakistan in 2022, the Climate Risk Index (CRI) for 2025 (↑Germanwatch, 2025) ranked Pakistan as the country most vulnerable to climate change. Climate emergencies have repeatedly impacted learning continuity. In 2024 alone, climate-induced floods in Sindh destroyed 1,348 schools and 181 Temporary Learning Centres (TLCs), affecting over 230,000 children (↑ReliefWeb, 2024). According to recent stakeholder consultation sessions conducted by EdTech Hub, responses to the educational impact of the climate emergencies largely focus on climate education rather than climate resilience. Further, post-disaster recovery appears to focus on restoring physical infrastructure, which alone cannot support learning continuity (↑Sarwar, 2023).

As education disruptions grow more frequent and deepen learning poverty, building system resilience by leveraging the potential of educational technology (EdTech) is increasingly essential. EdTech Hub's research on learning continuity in response to Pakistan's 2022 floods (↑Mazari et al., 2023) found that **EdTech has the potential to help address some of the documented limitations in existing flood responses to support the educational needs of flood-affected communities — if used equitably, feasibly, and with a consideration of scalability.**

While some research findings have informed strategic development at the federal level, most notably the Ministry of Federal Education and Professional Development's *National Distance Education Strategy (2023–2026)*, there was a need to validate these findings through engagement with key government and development partner stakeholders. Provincial consultations were particularly important to the development of this brief. While provincial-specific needs and contextual realities may differ, all education sector plans currently prioritise student retention and access to education for marginalised youth — ambitions that are increasingly threatened by climate emergencies. With national-level

policies related to climate change, increased fiscal allocations, and a sophisticated EdTech ecosystem in place, **Pakistan has an opportunity to consider embedding EdTech to support a climate-resilient education system** (↑Greenfield, 2025; ↑Naeem, 2025).

1.1 Methodology

This policy brief was developed in three phases:

1 Primary research during Pakistan's 2022 floods

2 Updated desk review to inform policy brief draft in 2024

3 Stakeholder consultation: January to May 2025

During the 2022 floods, EdTech Hub conducted primary research to assess the role of EdTech in supporting learning continuity. Qualitative data was collected in two phases from parents, teachers, government officials, and international and local humanitarian response experts, allowing time-based analysis of feasible and scalable solutions. In 2024, a rapid desk review updated the evidence base and mapped new interventions. This was followed by consultations with federal and provincial government officials and development partners to validate findings and inform practical, context-aligned recommendations.

2. Bolstering responses through the use of technology

This policy brief uses Pakistan's 2022 floods as a reference point to highlight key gaps in existing educational responses to climate emergencies and identify feasible opportunities for EdTech to help address these gaps with attention to scale. While the humanitarian response addressed immediate survival needs, educational recovery has been noted as uneven, particularly for children in remote and marginalised localities (↑Baron et al., 2022; ↑Mazari et al., 2023; ↑Sarwar, 2023). These key challenges have been echoed by government stakeholders and development partners through consultations, as well as by the voices of flood-affected communities themselves in EdTech Hub's primary research (↑Mazari et al., 2023).

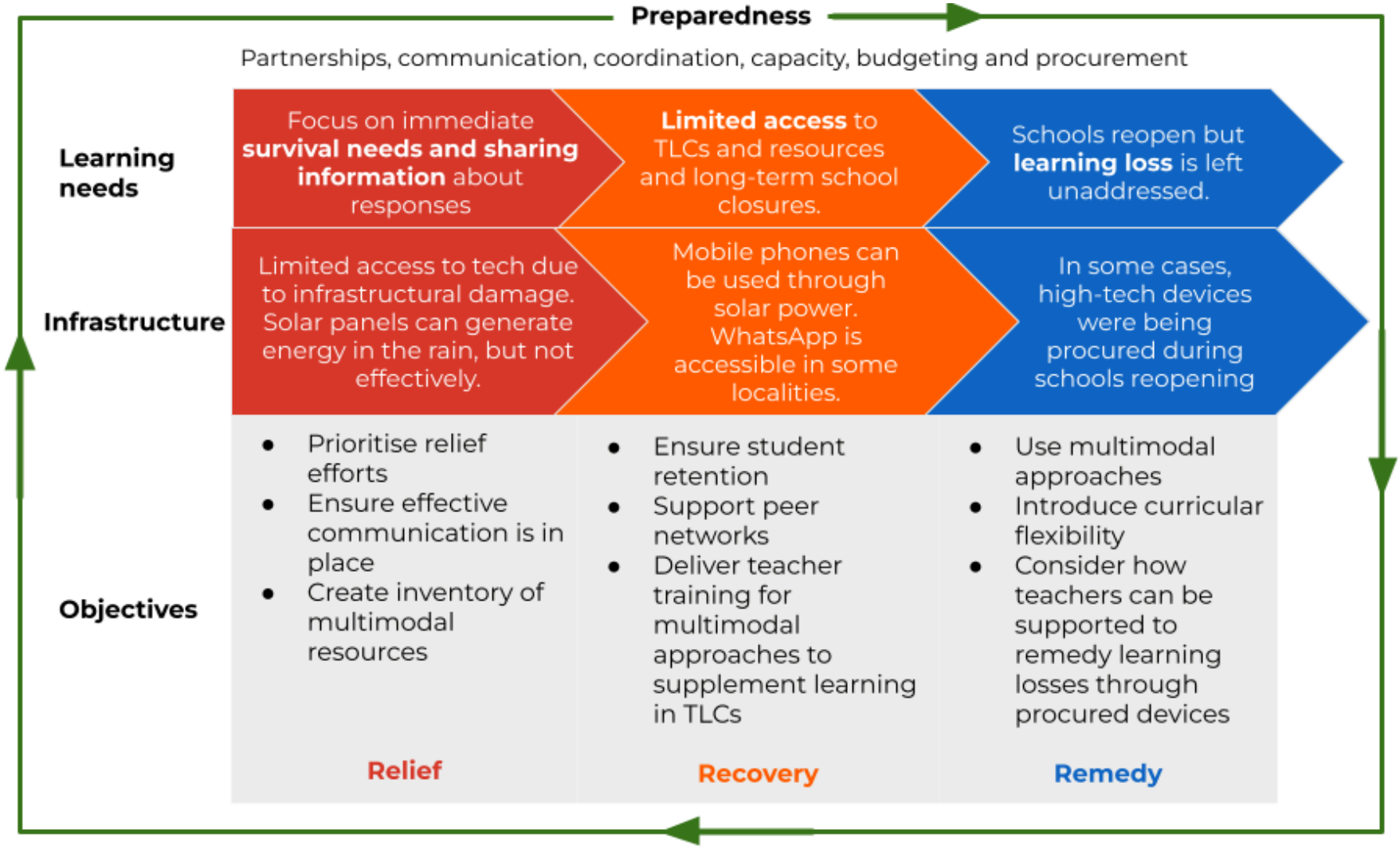
The policy brief begins by providing guidance on the use of EdTech in response to climate emergencies in Pakistan based on the experience of the 2022 floods. This is followed by suggestions on how technology can be used across the various phases of a flood response to bolster existing learning responses by enhancing:

1. Psychosocial well-being
2. Access to education
3. The quality of education
4. Data and coordination.

2.1 Guidance on the use of EdTech

Stakeholder consultations revealed that responses to climate emergencies in Pakistan were largely limited to the relief phase, addressing damage to school buildings, providing learning materials, and focusing on WASH facilities. In contrast, ↑Mazari et al. (2023) demonstrate how the infrastructural and learning needs, as well as capacities of the affected students, families, and teachers, changed over different phases of the 2022 floods. The report calls for a multisectoral approach across multiple phases of emergencies: **relief**, **recovery**, **remedy**, and **preparedness** (see Figure 1 below).

Figure 1. *A phased approach to climate emergencies*



While emergency responses can be divided into four phases, it is critical to note how these phases are interconnected, with preparedness not being considered an individual phase, and instead being an ongoing process that ensures system resilience by prioritising considerations of capacity, infrastructure, partnerships, and procurement (see Figures 2, 3, and 4 below). For preparedness, these elements are essential considerations to help shape policies, as outlined in Figure 2 below.

Figure 2. Overarching *guidance on the use of EdTech: Policy recommendations*

Policy recommendations

Consider how technology can help provide psychosocial support, enhance access to education, improve the quality of education, and strengthen system resilience to respond to climate emergencies by:

- **Preparing to address capacity needs through sensitisation and prior planning of roll-outs** that help alleviate the capacity concerns of teachers and facilitators.
- **Contextualising existing EdTech initiatives to align with infrastructural realities and learning needs** to help address existing gaps in educational emergency responses.
- **Fostering cross-sectoral partnerships** to drive a coordinated approach that makes best use of scarce resources and supports capacity sharing.

To implement these recommendations, efforts are needed to strengthen capacity, infrastructure, and partnerships (see Figure 3 below). EdTech implementation to support learning continuity must be part of a large coordinated strategy that must be supported by multi-sectoral partnerships.

Figure 3. *Preparation through focusing on capacity, infrastructure, modalities, partnerships, and procurement*

Capacity	Infrastructure and modalities	Partnerships and procurement
Addressing the digital capital capacity and pedagogical knowledge of teachers and community facilitators is key in emergency preparation. Blended and distance learning pedagogical approaches need to be incorporated into ongoing teacher professional development. Additional contextualised support resources can be shared during an emergency, and models for peer learning should be tested beforehand. **Stakeholders emphasised the importance of involving parents and community members**, but a lack of awareness of existing interventions is perceived as a challenge to the use of EdTech.	**Electricity:** Solar power and solar-powered charging kits are a prevalent source of electricity in rural communities. **Connectivity:** Connectivity restoration is uneven and takes time; therefore, modalities that are available offline are the most feasible for a climate emergency response. While satellite hubs are used in some responses as a high-cost, low-reach option, they are not feasible to scale. **Tech modality:** It is a good idea to introduce shared learning devices (e.g., mobile phones, TVs, or tablets in TLCs), supported by teachers or caregivers. Given the ubiquity of mobile phones and the use of WhatsApp in previous emergencies, this will be the least costly modality to scale. Because digital infrastructure is patchy in parts of the country, even outside of emergencies, some interventions are already geared to be available offline.	**Collaboration with development partners:** Consultations revealed the complexities of allocating government funding towards emergency programmes, underscoring the need for greater flexibility in emergency programme design and streamlined procurement mechanisms. **Collaboration with the private sector:** EdTech implementation requires dedicated, continuous investments for procurement, infrastructure, capacity building, ongoing support, content adaptation, data collection, and maintenance of devices, among others. **Capacity and resource-sharing across sectors:** Emergency responses bring together various actors to make use of scarce resources. This is particularly important for responses that bolster the infrastructure required for EdTech implementation.

The **preparation** phase between different emergencies provides an opportunity to prioritise the partnerships required to:

1. Optimise resource-sharing between authorities, development partners, and local organisations across the health, disaster management, and education sectors.

2. Co-design feasible strategies and contextualised solutions by collaborating with EdTech providers, community groups, and local organisations. This can help enhance resilience to address the reported challenges across the **relief**, **recovery**, and **remedy** phases, but will require careful testing and rapid evaluation (particularly in relation to the **recovery** phase) to enhance effectiveness.

Along with the preparedness measures outlined in Figure 3 above, past initiatives have demonstrated how EdTech can be utilised for more than just content delivery — it can serve as a tool to gather rapid information and support tailored learning, as evidenced in Figure 4 below.

Figure 4. *Evidence-based examples of using EdTech for assessing and responding to learning losses*

- **Rapid data collection through community networks in Pakistan:** EdTech Hub's *Pakistan Digital Learning Landscape Analysis* (↑Zubairi et al., 2022) highlighted the efforts of the organisation Teach for Pakistan during the Covid-19 pandemic, as a noteworthy example of monitoring distance education. Teach for Pakistan leveraged community networks (including mosques and shops) to gather information on students. This engagement revealed that 60% of students could be further contacted via their parents' or neighbours' phones.

- **Using SMS-based assessments to evaluate learning in Kenya and Pakistan**: ↑Jordan et al.'s (2023) study on M-Shule, an SMS-based educational platform in Kenya, embedded SMS-based assessments within personalised learning messages. Learners responded to quizzes via SMS, and the learning platform adapted future content based on their responses — creating a feedback loop to identify learning gaps in real time. This allowed educators and caregivers to monitor progress and adjust support, even in areas with no smartphones or internet connectivity (↑Jordan et al., 2023). Similarly, in Pakistan, learning content through Teleschool, a Ministry of Federal Education and Professional Training initiative, was paired with text messages that assessed student learning (↑Zacharia, 2020).

- **Using WhatsApp to Teach at the Right Level (TaRL) in rural Pakistan:** During Covid-19-related school closures, EdTech Hub funded a randomised trial in Punjab conducted by ↑Adil et al. (2021) that tested three low-tech interventions:

    1. A WhatsApp-based intervention focused on Teaching at the Right Level (TaRL)

2. Fortnightly mobile assessments
3. Digital teacher training.

The WhatsApp TaRL group saw significant gains in Urdu and English (+0.56 SD), with regular engagement linked to better outcomes. Fortnightly assessments and teacher training also boosted English scores.

- **Piloting an app to support teachers in providing remedial education in Pakistan:** The Targeted Instruction Programme (TIP) implemented by the Center for Economic Research in Pakistan (CERP) with support from EdTech Hub, the World Bank, and Douglas B. Marshall Jr. Family Foundation was designed to fill learning gaps in primary schools (↕Raheem & Macdonald, 2024). In the pilot studies conducted in Islamabad and KP, teachers were trained in the use of a smartphone app, which helped them to organise students into remedial groups for targeted instruction. Preliminary results showed that treatment groups scored 0.16 standard deviations (SDs) higher than the control group, with students who were most behind benefiting the most (↕Collins & Noor, 2024).

  The app helped teachers monitor student progress, access teaching and training materials, digital grading tools, and assessments, thereby reducing their administrative burden.

2.2 Recommendations across learning needs

In this section, we present four recommendations for policymakers and development partners related to:

1. Supporting psychosocial well-being
2. Enhancing equitable and resilient access to education
3. Enhancing the quality of education
4. Strengthening coordination and evaluation.

1. Provide contextualised psychosocial support and social and emotional learning (SEL) across emergency phases through the use of technology and cross-sectoral collaborations.

Poor psychosocial well-being impacts prospects for learning continuity across all phases (↑Dahlin & Barón, 2023; ↑Mazari et al., 2023; ↑Sarwar, 2023).

Key issues

- **Lack of community awareness:** mental health is still a novel concept among communities, and a lack of awareness among families about available support initiatives is fairly common.
- **Lack of support and training for teachers:** Teachers' psychosocial well-being significantly influences the quality of education, yet it remains largely overlooked in emergency responses. Teachers are also ill-equipped to address the psychosocial needs of children, and often struggle with their own psychosocial well-being.

Technology can play a role in addressing some of these challenges if some considerations are made across the emergency phases, as outlined in Figure 5 below.

Figure 5. *Policy recommendation and guidance for all emergency phases: Psychosocial support*

Policy recommendation 1: *Integrate teacher psychosocial support and basic mental health awareness into teacher training programmes, and consider how technology can play a role in sharing contextualised training support at scale.*

Preparedness

- Use cross-sectoral collaborations to create an inventory of existing remote psychosocial support resources as well as phone-based messaging that can be deployed quickly through mobile phones during emergencies.
- The government, development partners, and EdTech providers should collaborate to consider how existing digital resources can be translated into local languages and shared in alignment with contextual realities. Support materials could be shared and used before a climate-related emergency to ensure alignment with infrastructural availability for the implementation of EdTech programmes.
- To sensitise communities, including learners, parents, teachers, and community leaders, education and health authorities should collaborate to design awareness-raising campaigns about the importance of mental health support and the resources available in the event of a crisis.

Relief

Disseminate messages on relief-stage responses, including those related to psychosocial well-being and health, via communication channels that communities are already familiar with, such as WhatsApp voice notes and SMS texts. Bolster

Recovery

Ensure that teachers, even in remote areas, are provided psychosocial support that leverages technology. For instance, Rozan, an Islamabad-based NGO, provides psychosocial support and counselling to communities over the phone (↑Mazari et al., 2023).

Technology can help reduce the burden on teachers and facilitators at TLCs as well as support parents at home. Content from existing SEL interventions, such as the children's TV programme *Ilm Ka Aangan* (The Learning Courtyard), developed by The Citizens Foundation during Covid-19-related school closures, can be repurposed for use at TLCs and accessed through smartphones and,

Remedy

Stakeholders have emphasised the need to tailor the curriculum and reduce the burden of exams when children return to school.

dissemination through community leaders.	if feasible, televisions. A list of additional interventions is provided in the Annex, along with details about the necessary infrastructure to support them. Prioritise peer learning supplemented by digital content that focuses on foundational concepts to support post-emergency school transitions. Desk research and consultations highlighted that learning materials in TLCs have not been adapted in accordance with children's psychosocial needs.	

2. Use technology to enhance equitable and resilient access to learning through distance education and proactive dropout prevention.

Key issues

- **Access to education is impeded by infrastructural constraints as well as teacher shortages.** Flood-affected parents noted that TLCs are too far away or inaccessible. School infrastructure that is not damaged in floods is often converted to temporary shelters for internally displaced people. In terms of education delivery, consulted stakeholders mentioned that teacher shortages further hinder the likelihood of establishing more TLCs.
- **Weak transition planning:** Stakeholders raised concerns that without targeted interventions, children attending TLCs may not return to formal schooling. Additionally, stakeholders expressed concerns about the risk of TLCs becoming permanent, since several schools destroyed during emergencies were never rebuilt.

Figure 6. *Policy recommendation and guidance for all emergency phases: Enhancing access to learning*

Policy recommendation 2: Expand equitable and resilient access to learning through distance education and proactive dropout prevention.

Preparedness

- Partner with government, development partners, and local EdTech providers to contextualise existing distance learning content for flood-prone areas. Table 1 in the Annex provides a list of some local programmes that can be repurposed to support education in flood-prone contexts.
- Map infrastructure (e.g., solar power, internet connectivity, device ownership) at the school and community level to identify access gaps. This data is already available in provinces, including Punjab and Khyber Pakhtunkhwa.
- Collaborate with communities to design:
    1. Mobile-phone-based peer learning models where TLCs are inaccessible
    2. TV-based peer learning models with community facilitators or remote teachers, particularly in areas where school closures are likely to be prolonged. This should include an emergency procurement, deployment, and a rapid evaluation plan.

  It is critical to consider the feasibility of existing tools and platforms when designing these models.
- Build on policy discussions on retention and reducing dropout by establishing early warning systems (EWS) to identify students at risk of dropout by using technology to measure indicators such as attendance and learning outcomes.
- Develop outreach strategies (i.e., SMS, phone calls, WhatsApp groups) for at-risk and non-returning students. Provide remote learning options if re-enrolment is delayed.

Relief	Recovery	Remedy
Identify teachers and / or community facilitators who may be able to engage students remotely through devices, either via pre-recorded lessons or through text or voice messaging using tools like WhatsApp. Build a community of practice for support and resource sharing that can be used to gather feedback on the roll-out. Raise awareness on the availability of distance education resources and share support guidelines.	Share distance learning content and materials with communities, enabling peer learning through devices such as smartphones. Additionally, provide preparation materials to teachers and facilitators within the community of practice. Use TVs for blended learning (if identified in preparedness mapping) in TLCs or shared spaces to reach students who do not have devices. This design should include a mechanism for rapid data collection. Leverage district-level databases (e.g., Pakistan Institute of Education's National Open Data Portal) to reassign qualified teachers to areas with acute shortages.	In cases where schools do not reopen immediately, continue building teacher and facilitator capacity through professional development programmes about integrating technology into pedagogy. Collaborate with education stakeholders to determine a pathway for accreditation for TLCs and remote students.

3. Use technology to address capacity gaps in providing quality education and remedial learning.

Key issues

The quality of education is compromised due to the following barriers, even for enrolled students.

- **Learning materials are not always aligned with student needs**. Many TLCs lack learning materials entirely or rely on standardised curricula that do not reflect learners' needs during emergencies (↑Mazari et al., 2023; ↑Sarwar, 2023).
- **Interventions are not effectively targeting learning loss:** Students face significant learning loss, and there are few remedial measures, leading to disengagement and dropouts even after returning to school.

Figure 7. *Policy recommendation and guidance for all emergency phases: Quality of education and remedial learning*

Policy recommendation 3: Prioritise the design and delivery of programmes that target foundational skills and support remedial learning.

Preparedness

- Develop an inventory of remedial resources such as the Literate Pakistan Foundation's packages A and B covering Grades 1–8, The Citizens Foundation's remedial programme, or JICA (Japan International Cooperation Agency) AQAL's (Advancing Quality Alternative Learning) Alternative Learning Programme.
- Consider how existing remedial resources can be adapted to bolster emergency responses.

Relief

Develop a repository of digital learning resources that can support access to education in later phases.

Recovery

Deploy digital learning resources that focus on foundational skills, including basic literacy and numeracy, to address knowledge gaps that can be built upon in the later phases of an emergency.

Assess learning losses in affected regions through assessments. For example, UNICEF (2022) has developed guidelines on using mobile devices in emergency situations for carrying out student assessments.

Remedy

Train teachers to diagnose students' learning levels and tailor lesson plans accordingly. The Targeted Instruction Programme (TIP) (Razzaque & Hameed, 2022), piloted in Islamabad and Khyber Pakhtunkhwa, utilises a mobile-based app that monitors and identifies gaps in student learning, as well as hosts teaching materials, including lesson plans.

Additionally, structured pedagogy can be supported by technology. Through the National Institute of Excellence in Teacher Education (NIETE) programme, AI-scripted lesson plans have been piloted to enhance the quality of education. In cases where high tech is being integrated, the affordances of digital personalised learning can provide personalised pathways for remedial

		learning. However, they will require training to allow teachers to integrate it into their practice. Launched in late 2024, Khan Academy's Khanmigo is a recent example of an AI-powered teaching assistant that includes automated lesson planning.

4. Strengthening system coordination and evaluation to support bolstered responses

Key issues

Systemic challenges, including coordination, communication, and the use of data, are identified as challenges for each response phase of an emergency.

- **Fragmented information sharing:** Urban and rural inequities prevent equal access to information about interventions and activities. During the Covid-19 pandemic, parents in rural areas were less aware of digital learning interventions than their urban counterparts (↑Zubairi et al., 2022). Similarly, during the 2022 floods, many rural parents lacked information about relief activities (↑Dahlin & Barón, 2023; ↑Mazari et al., 2023) and were unaware of school reopening timelines after the floods (↑Perry et al., 2023).
- **Disjointed data systems:** Inaccurate or unavailable data on school functionality resulted from gaps between regional and national disaster management agencies, as well as a lack of geospatial mapping. Attempts to address data-related concerns are already underway, with the Pakistan Institute of Education set to launch the National Open Data Portal (NODP)[1] in summer 2025. This is intended to standardise data across all provinces, including data on teachers' professional qualifications.
- **Transition from manual to digital data systems:** Some provinces have real-time monitoring systems or apps in place or under development to replace the existing manual data system. However, stakeholders highlighted the limited digital literacy of professionals.
- **Gaps in evidence of past programmes:** There is limited evidence about the impact of past emergency education interventions on student learning (↑Sarwar, 2023). According to consulted development partners, this issue is amplified by challenges in conducting learning assessments during emergencies.

[1] See https://stage.nodp.gov.pk/index.html. Retrieved May 2025.

Figure 8. *Policy recommendation and guidance across phases: System strengthening through data and coordination*

Policy recommendation 4: *Establish integrated data systems and clear communication protocols between school leaders, communities, and disaster authorities. Consider how technology can play a role in collecting data related to learning outcomes and ensure capacity building for all stakeholders.*

Preparedness

- Integrate EdTech readiness into existing school readiness plans developed by development partners to ensure that students and teachers can continue teaching and learning through distance learning and hybrid learning during different phases of an emergency.

Relief

Engage local community members to support relief efforts, strengthen communication with affected families, and lay the groundwork for the adoption of EdTech programmes. Voice notes for WhatsApp users or phone calls for basic phone users (in regions where WhatsApp connection is unreliable) can be used to inform and coordinate with affected communities.

Data collection teams will require training to use digital systems over previous manual ones, since capacity building remains a challenge.

Recovery

Communicate plans to return to schools and use EdTech resources (see Table 1 in the Annex) with parents and caregivers, to ensure their buy-in and generate awareness. Activate communication channels between teachers, school administrators, and families, ensuring that students can return to schools or can continue learning through distance education.

Include indicators on infrastructural damage, including damage to schools, electricity and internet connectivity, computer or IT labs in regional Management Information Systems (MIS) and NODP and

Remedy

Use data collected during technology mapping in the preparedness phase (see Figure 6, preparedness) to ensure equitable and accessible methods of communication during a crisis.

Bolster regional MIS and NODP data with indicators on infrastructural damage, including damage to electricity and connectivity, computer or IT labs, and map the use of devices by community members.

Develop low-cost and easy-to-administer assessment tools to gather data on EdTech programmes as well as learning outcomes quickly.	evaluate learning losses in affected regions through assessments. Gather early feedback on any EdTech programmes being used by communities using accessible tools (e.g., phone-based surveys, voice notes, or calls).	Develop monitoring frameworks and conduct regular data collection activities to measure the impact of EdTech interventions. Use devices to collect data where appropriate.

Conclusion

As Pakistan faces an intensifying cycle of education disruptions induced by climate emergencies, there is a clear need to move beyond reactive measures focused solely on physical infrastructure. This policy brief emphasises that with strategic planning, cross-sectoral collaboration, and sustained investment, EdTech can play a meaningful role in strengthening the resilience of education systems. By prioritising efforts to prepare for the use of technology prior to a climate emergency, Pakistan has the opportunity to reach the most marginalised learners, support psychosocial well-being, and ensure that learning continues despite disruptions across all phases of emergency response: relief, recovery, and remedy.

To do so effectively, EdTech interventions must be contextualised, inclusive, and accompanied by support systems that address capacity, infrastructure, and coordination challenges. The foundations are already in place: a national policy direction, a growing EdTech ecosystem, and emerging partnerships. What is needed now is a deliberate shift from short-term recovery to long-term resilience in which technology becomes an enabler of equity, continuity, and learning for every child, no matter the crisis.

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Annex

Table 1 below shows a list of programmes across Pakistan that can be repurposed to ensure learning continuity across various phases of a climate emergency. However, the interventions need to be adapted to suit the constraints and regional contexts. This includes:

- Modifying content to address the social and emotional needs of children affected by the crisis
- Tailoring the content to enable flexible learning options
- Ensuring that the modalities required for the programme do not place additional burdens on teachers and communities
- Accounting for connectivity concerns and lack of electricity through multimodal options and offline availability.

Aligning the following existing initiatives with community and infrastructural needs in relation to climate emergencies will require rapid feedback cycles and further testing.

Table 1. *A list of technology-enabled interventions across Pakistan*

Name	Details	Implementation considerations
Social and emotional learning		
Sim Sim Hamara[2]	An educational TV series aimed at young children based on the Sesame Street programme. The programme was funded by USAID and developed by the Rafi Peer Theatre Group from 2011 to 2012.	All episodes are available on YouTube and require internet connectivity and access to smartphones.
Ilm Ka Aangan[3]	Ilm Ka Aangan was created by The Citizens Foundation in 2020 as a response to the Covid-19 pandemic. The show was based on a play-based early childhood education model and focused on literacy, numeracy, and social and emotional learning. The programme also included a magazine series targeting primary and secondary learners.	All episodes are available on YouTube and require internet connectivity and access to smartphones.
AzCorp Entertainment[4]	AzCorp focuses on using storytelling to teach children about civics, social justice, and gender equality. There appear to be four comic series, each catering to different age groups (ranging from ages 8 to 16). These series have been implemented through a range of partnerships. 'Sheeba and the Private Detective' was implemented in 200 schools in	Constant internet connectivity is required for YouTube, but if the content is open source, then it could potentially be pre-downloaded and used with

[2] See https://www.youtube.com/playlist?list=PLcc1OxXYJOfg9L1c0Pt7Nfq6Dye4uDvz0. Retrieved April 2025.

[3] See https://www.tcf.org.pk/covid19/distance-learning-support/. Retrieved April 2025.

[4] See https://www.azcorpentertainment.com. Retrieved April 2025.

Name	Details	Implementation considerations
	Islamabad Capital Territory, Gilgit Baltistan, and Azad Jammu and Kashmir through the Pakistan Reading Project (PRP). In addition to its print magazines, audio versions of some stories are currently available for free on YouTube in Urdu and Sindhi.	low-tech solutions in temporary learning centres (TLCs). Print may be challenging to roll out at scale during an emergency.
Psychosocial support		
Rozan[5]	The Islamabad-based non-governmental organisation's model combines phone helpline services with field deployments in emergencies and integrates with health and education systems across all provinces. In partnership with UN agencies (United Nations Population Fund and UN Women), local governments, and civil society networks, Rozan has been offering support to communities affected by emergencies since Pakistan's 2005 earthquake. Its hotline offers psychosocial support in Urdu, Punjabi, Pashto, Sindhi, and English, with a focus on addressing the needs of women and girls at risk of gender-based violence.	Constant network coverage is required Access to mobile phones is required for the hotline Given Rozan's experience with in-person psychosocial support training, it is worth considering whether these efforts could be expanded remotely.
Saving 9[6]	The initiative offers mental health support to communities through emergency medical responses, including online counselling. It also offers mental health training.	Access to phones and network coverage is required. Internet connectivity may be required for WhatsApp calls.

[5] See https://rozan.org. Retrieved April 2025.

[6] See https://saving9.org. Retrieved April 2025.

Name	Details	Implementation considerations
Teaching and Learning		
Teleschool app	Launched in 2023, Teleschool is a government-owned app that aims to offer free digital resources for all children, including those who are out of school.	Constant connectivity is required Smartphones are required Evidence about usage and reach is currently not publicly available, but would be useful to inform approaches to implementation.
Targeted Instruction Programme (TIP)[7]	The programme was piloted in Khyber Pakhtunkhwa and in the Islamabad Capital Territory by the Centre for Economic Research in Pakistan. The programme is administered by existing school teachers, who use a low-tech tool through which they can grade assignments and access specially designed formative and summative assessments, teaching and learning materials, and training resources. A software-based fast grading tool aims to support teachers and reduce their administrative burden.	Smartphone / tablet / computer Offline available (after initial login)

[7] See https://edtechhub.org/2024/07/24/edtech-for-smartphones-in-low-resource-environments/. Retrieved April 2025.

Name	Details	Implementation considerations
e-Taleem Learning Management System[8]	The e-Taleem portal is a customised learning management system (LMS) designed for the Federal Directorate of Education schools in Islamabad Capital Territory. It is currently being implemented in all schools across urban and rural sectors.	Both online and offline models are available, but internet connectivity is required for data synchronisation.
Participatory Online Home Learning Alternative (POHA)[9]	POHA specifically targets out-of-school children from ages 4 to 16 in Khyber Pakthunkhwa. Khyber Pakhtunkhwa's Elementary & Secondary Education Foundation (ESEF) combines online and home-based learning methods to provide educational opportunities to children who are not enrolled in formal schooling. Digital learning content is available through the Khyber Pakthunkhwa Learning Portal and YouTube.	More information is required to support implementation design.
NIETE (National Institute of Excellence in Teacher Education)[10]	NIETE is a technology-enabled, holistic programme that combines digital learning tools with in-person mentoring to enhance teaching quality across the Islamabad Capital Territory. The NIETE programme includes teacher training content available digitally as well as AI-generated lesson plans.	Smartphones Internet connectivity is required to access the materials. Recently, the ability to download content from the app for offline use has been introduced.

[8] See https://etaleem.gov.pk. Retrieved April 2025.

[9] See https://www.facebook.com/esefkpk/videos/participatory-online-home-learning-alternatives-poha-esef-has-started-a-new-proj/721128199421446/. Retrieved 22 August 2025.

[10] See https://niete.edu.pk. Retrieved April 2025.

Name	Details	Implementation considerations
Smart Schools programme[11]	The Smart Schools programme in Gilgit-Baltistan made digital content available to supplement in-school learning. The initiative was implemented through tech fellows who provided critical assistance to teachers. It aligned with local infrastructural needs by making content available through local learning hotspots that did not require internet connectivity and solarisation to mitigate reliance on the electrical grid (↑Aslam et al., 2024).	Learning content is available through a local area network (LAN) in schools, and online functionality is available. Solarisation reduced dependence on electricity.
Knowledge Platform[12]	The platform offers personalised learning through *KP Coach* (previously Learn Smart Pakistan), which contains videos and assessments aligned with the national curriculum. The platform previously partnered with Jazz and the Federal Directorate of Education to pilot an intervention targeting girls' schools in Islamabad.	Offline and online functionality is available. The platform can be used both in a classroom with a computer and projector, as well as at home on a mobile phone.
Sabaq (MUSE)[13]	Sabaq's videos and content are aimed at both in-school and out-of-school children. Videos are available on YouTube and can also be accessed through the MUSE app.	Online content is accessible via an Android app or a web browser and requires smartphones or computers / laptops. Videos are also available on YouTube.

[11] See https://sabaq.edu.pk. Retrieved September 2025. See also Aslam et. al., (2025).

[12] See https://www.knowledgeplatform.com/. Retrieved April 2025.

[13] See https://sabaq.edu.pk. Retrieved April 2025.

Name	Details	Implementation considerations
TeleTaleem[14]	A private organisation based in Islamabad, TeleTaleem provides digital learning services across the country, including remote or online teaching and a blended learning programme piloted in Federal Directorate of Education schools.	Programmes, particularly online teaching interventions, require strong internet connectivity in addition to a computer / laptop and projectors / screens for a classroom setting.
Edkasa[15]	Edkasa offers digital content to help students in Grades 9, 10, 11, and 12 prepare for board examinations. Students can learn from live online classes through connected classrooms or use the app for videos, ask questions, and participate in test sessions. Edkasa currently operates in a few government schools in Punjab.	The app follows a freemium model, but is available for free for public schools. Edkasa requires connectivity.
Noon[16]	Noon is a Saudi-based social e-learning company that offers a mobile and desktop app. The platform is designed for K–12 students with live online interactive classes and peer-learning features.	The app is free to use but requires online connectivity.

[14] See https://ots.teletaleem.com. Retrieved September 2025.

[15] See https://edkasa.com/. Retrieved April 2025.

[16] See https://www.noonacademy.com/en-pk. Retrieved April 2025.