



Clear evidence, better decisions, more learning.

Leveraging EdTech to support learning continuity in climate emergencies

Moving from reactive responses to preparedness

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for every child

EdTech Hub is a global research and evidence-to-action partnership.

Our goal is to **empower people by giving them the evidence they need** to make decisions about technology in education.

About this presentation

Introduction

In 2025 and 2026, EdTech Hub developed and delivered workshops and training to senior government officials, education response teams, and Education Sector Working Group members strategising and designing education in emergency (EiE) responses. This presentation was used as part of the training. The material is adaptable and usable in other contexts. The content focuses on strategy and preparedness planning. The information is useful for training government officials who are strategising and planning EiE response, development partners, and response implementation teams.

Use this presentation for your context

While this presentation was tailored to training needs in Pakistan, it includes background and evidence-based suggestions applicable to crisis responses in other contexts to ensure learning continuity. Read through the slides and see what works for your context. Adapt examples as necessary, for example you can create scenarios relevant to your particular context.

The training opens with an icebreaker to surface participants' existing relationship with technology, then moves through the evidence-backed realities of each phase of a climate disaster and the technology modalities available to support learning at each stage. The final section uses practical scenarios to consolidate learning and develop actionable plans.

To see how this material was applied in practice, read our [blog](#). For the evidence and policy guidance underpinning the training, refer to our policy brief and research on the feasible and scalable use of EdTech in response to Pakistan's 2022 floods ([↑Hayat et al., 2025](#); [↑Mazari et al., 2023](#)).

You will find details and references to all sources cited in this presentation at the end of the presentation on this [slide](#).

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Icebreaker

If you had to leave your home immediately due to an emergency, what is the first item you would pick to bring with you, and why?

Session objectives

- Understand how EdTech can bolster emergency responses to support learning continuity
- Shift from reactive responses to proactive preparedness through EdTech and enhance cross-sectoral engagement
- Understand how the existing EdTech ecosystem can be leveraged to support the varying needs of learners across different phases of a crisis
- Plan for context-specific and feasible EdTech interventions to enhance system resilience

Education in Emergencies

An estimated **25.3 million children (36% of all children)** between the ages of 5 and 16 are out-of-school ([↑The Missing Third of Pakistan: A tehsilwise analysis of out of school children, Pak Alliance for Maths and Science, 2024](#)).

Natural disasters (such as the floods in 2025 and 2022) pose a risk of compounding Pakistan's learning crisis when

- Significant gender disparities exist where boys outnumber girls
- Socio-economic status determines access to quality education
- Geographical location may create additional barriers
- Existing infrastructure is inadequate to address the needs of all children

What our experience with climate emergencies has shown...

- 1 Responses to emergencies in Pakistan are largely limited to the initial relief phase and recovery is uneven across different regions
- 2 Infrastructural, learning needs, and capacities of the affected communities change over different phases of a crisis
- 3 Responses to emergencies such as through temporary learning centres (TLCs), emergency education supplies and teacher training remain limited

Key gaps

Are there any other key gaps that emerge in EiE responses?

Key gaps in educational responses in emergencies



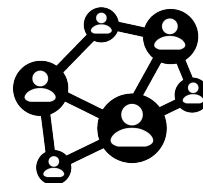
Student and teacher psychosocial well-being

- Lack of information on mental health support is common
- Teachers' psychosocial well-being and training to support students' mental health is overlooked



Access to quality education

- Infrastructural challenges, teacher shortages, and weak transition plans to formal pathways limit effective responses
- Standardised curricula are not aligned with learner needs during emergencies and the lack of remedial measures lead to dropouts



Systemic challenges in data, coordination and evaluation

- Urban and rural inequalities exist in access to information for affected communities
- Plans to shift data from manual to digital systems are limited by low digital literacy
- Limited evidence of impact from past emergency education interventions

EdTech requires a systems approach to support learning. Emergencies disrupt existing education systems, but EdTech can be one part of a response to ensure learning continuity in the aftermath of a crisis.

EdTech: A systems approach to support learning

EdTech interacts with all education system stakeholders

Teachers

- Teacher professional development
- Pedagogy
- Teacher digital skills

Learners

- Access to infrastructure, connectivity, devices
- Digital learning content
- Learning outcomes and digital skills

Parents/communities

- Informing and nudging parents
- Feedback

Systems

- Education management information systems (EMIS), data, monitoring and evaluation
- Teacher management
- Equity, safety, inclusion
- Skills and competencies
- Partners and ecosystem



💡 *There is a lot of potential in the use of EdTech, but EdTech does not improve learning outcomes in isolation.*

EdTech in emergencies

When you first hear about the use of EdTech in emergencies, what's the first thing that comes to mind?

What are some EdTech interventions that you have come across in recent emergencies?

What aspects worked and what did not?

Begin with preparedness...

Preparedness is an ongoing process to build back better systems

To strengthen preparedness, technology can help provide psychosocial support, enhance access to quality education and strengthen system resilience by focusing on:

- Capacity-building to address the digital capacity and pedagogical knowledge of teachers and community facilitators in emergency preparation and involve parents and community members early in EdTech implementation.
- 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.

The next slide illustrates how preparedness applies across the different phases of a crisis as learning needs change.

Preparedness

Partnerships, communication, coordination, capacity, budgeting and procurement

Learning needs

Focus on immediate **survival needs and sharing information** about responses

Limited access to TLCs and resources and long-term school closures.

Schools reopen but **learning loss** is left unaddressed.

Infrastructure

Limited access to tech due to infrastructural damage. Solar panels can generate energy in the rain, but not effectively.

Solar power can be used to charge mobile phones. WhatsApp is accessible in some localities.

In some cases, high-tech devices were being procured during schools reopening

Objectives

- Prioritise relief efforts
- Ensure effective communication is in place
- Create inventory of multimodal resources

- Ensure student retention
- Support peer networks
- Deliver teacher training for multimodal approaches to supplement learning in TLCs

- Use multimodal approaches
- Introduce curricular flexibility
- Consider how teachers can be supported to remedy learning losses through procured devices

Relief

Recovery

Remedy

Implementation considerations in emergency settings

What are the first few infrastructural elements restored after a disaster?

Modalities to consider and leverage

Availability and familiarity with technology should play a major part in selecting tools to deliver learning continuity ([↑Crompton et al., 2021](#)).

Cellular connectivity is one of the first infrastructural elements that is restored after a disaster ([↑Hayat et al., 2025](#)).

Mobile phones



- ✓ Low barriers for use; high levels of ownership
- ✓ SMS service is affordable
- ✓ Success in supporting teacher professional development in emergencies
- ✓ Most resources available on basic phone
- ✗ Literacy must be considered for SMS

Radio

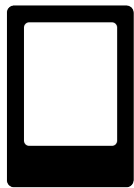


- ✓ Low-cost of content development
- ✓ Quick scale-up for community-based learning / TLCs
- ✓ Low recurrent costs
- ✗ Low household ownership in Pakistan ([↑NIPS/Pakistan & ICF, 2019](#))
- ✗ Lower engagement for individual learning

Modalities to consider and leverage

Availability and familiarity with technology should play a major part in selecting tools to deliver learning continuity ([Crompton et al., 2021](#))

Tablets



- ✓ Wireless connectivity; solar power
- ✓ Larger screens; portable
- ✓ Could be used to address learning loss
- ✓ More affordable than many smartphones
- ✗ Cost could make it difficult to scale

Television



- ✓ Supports visual learning
- ✓ Large screen for learning
- ✓ Good medium for psychosocial support
- ✗ Difficult to access for displaced people

Sourcing technology

Pathways	When appropriate			Trade-offs	Requirements
	Reuse 	If a tool already exists, is relevant, and can be deployed quickly	Fastest, low cost, but may not fully fit context	Access, licensing, device compatibility, user-support capacity	
	Adapt 	When existing solutions are close-fit but require contextualisation, translation, or simplification	Requires some investment, development capacity and testing	Content alignment, licensing, device compatibility, user-support capacity	
	Build 	Only when needs are unique and no viable solution exists	Time-intensive, costly, high maintenance burden	Strong tech capacity, long-term funding, maintenance plan	

- Consider the contextual realities and user needs prior to EdTech implementation.
- Resource limitations are common in emergency settings. Consider reusing available technology or adapting for crisis contexts.

EdTech Hub's forthcoming guidance: [↑EdTech for Education in Emergencies: A Guidance Document for Education Specialists Radford et al., 2026](#)

Sourcing technology

- **Define the problem** and conduct a technology needs assessment to avoid scaling and performance challenges later.
- **Calculate total cost of ownership** when designing EdTech interventions to ensure sustainability. This includes upfront costs as well as recurring ones for implementation, monitoring, and maintenance.
- **Include support mechanisms and capacity-building costs** that will help programmes continue in the long term. This includes costs to train and support teachers in digital pedagogy, help them manage technology, and build institutional partnerships for programme longevity.

Building support, equity, and sustainability

- **Reduce cognitive load and support social and emotional learning and well-being** for students and teachers alike.
- **Support learners** through contextually **relevant content** that is aligned with the curriculum and **teachers** in integrating digital and pedagogical skills through training and support.
- **Continuously test and iterate** to ensure efficacy and improve EdTech programmes throughout their lifecycle
- **Design for the most marginalised learners, with access constraints from the outset** to ensure the right delivery model and support sustainability. Consider multi-modal programmes to allow learners to engage through different methods.

Write down your ideas

- What modalities / tools and resources are already available, and which ones are feasible in the given context?
- In your current role or in your department, how would you use the EdTech tools and resources at your disposal to design a response?
- What supporting structures and mechanisms are needed for implementing EdTech?

Now let's imagine we're in a response cycle...

- Work in small groups to come up with responses to the following scenarios.
- The time for each scenario can be adjusted depending on the length of the workshop.
- Save time for sharing reflections across groups.

Scenario 1



20 mins

Monsoon floods are expected in a few months' time in certain districts and the system must be ready to support students to continue learning. Assume that internet connectivity is variable and that not all schools and TLCs will have access to electricity. In groups, develop a strategy to implement distance education using available resources by answering the following questions:

1. What EdTech tools and content already exist that can be reused or adapted for flood-affected learners? What new tools/resources would need to be created and why? Consider the constraints mentioned above.
2. What partnerships need to be in place to support EdTech implementation? Consider the total cost of implementation.
3. How will you ensure that EdTech programmes are monitored to support decision-making and document impact?

Scenario 2



20 mins

Floods have hit several districts causing more damage than originally anticipated. With families displaced and many homes and schools submerged, how can EdTech be used to immediately support in relief efforts? Develop a plan focusing on communication and engagement and raising awareness for interventions that help learners stay connected to education.

1. What tools and strategies can be deployed immediately?
2. How will you gather information on teachers and/or community facilitators to support education programmes in later phases of the crisis?
3. How will you ensure that all affected communities, regardless of access, are updated?



20 mins

Scenario 3

Weeks after the floods have hit, many schools across the region are being used to shelter affected communities. While TLCs have been set up to help students continue their education, teacher shortages are common. Develop a plan to account for these constraints and support students' education at TLCs.

1. How will you use EdTech to help address teacher shortages?
2. What delivery model will you use to support EdTech in TLCs and why?



20 mins

Scenario 4

Months after the floods, most schools have reopened. However, students are struggling to keep up with their education, with some dropping out entirely. Teachers are also finding it challenging to help address learners' varying needs while ensuring that they complete the curriculum on time.

1. How can EdTech be used to reduce teachers' workload?
2. How will you ensure that EdTech supports remedial learning?



10 mins

Share and discuss

1. What strategies do you foresee working in your contexts?
2. What challenges do you anticipate?
3. What needs to change to help education systems become more agile and adaptable in emergency responses?

Key takeaways

- EdTech can support learning continuity, psychosocial well-being, improve access to and quality of education and enhance system coordination and management, if used feasibly
- EdTech can support proactive responses and ensuring system resilience through preparedness
- Implementation plans should reflect the needs of the affected communities and their infrastructural realities
- Leverage existing digital resources: there are tools and content that can be adapted or repurposed
- Education in emergencies requires a multi-phased and cross-sectoral response: leverage technology being used by the disaster management authorities

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.

How prepared do you feel about integrating EdTech in emergency responses?

- What strategies were you surprised by?
- What strategies do you foresee working in your contexts?
- What challenges do you anticipate?

Recommended citation

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References

The sources we have referred to in this presentation are useful for further information on education in emergencies.

These references are available digitally in our evidence library at <https://docs.edtechhub.org/lib/UBSGMP36>

- Crompton, H., Burke, D., Jordan, K., Wilson, S., Nicolai, S., & Myers, C. (2021). *EdTech and Emergency Remote Learning: A Systematic Review* [Systematic review]. EdTech Hub. <https://doi.org/10.5281/zenodo.5651932>. Available under Creative Commons Attribution 4.0 International. ([details](#))
- Hayat, A., Mazari, H., & Aslam, N. (2025). *Using EdTech in Response to Climate Emergencies in Pakistan* [Policy Brief]. EdTech Hub. <https://doi.org/10.53832/edtechhub.1129>. Available from <https://docs.edtechhub.org/lib/8GVHGX36>. Available under Creative Commons Attribution 4.0 International. ([details](#))
- Mazari, H., Baloch, I., Thinley, S., Radford, K., Kaye, T., & Perry, F. (2023). *Learning Continuity in Response to Climate Emergencies: Pakistan's 2022 floods* [Technical Report]. EdTech Hub. <https://doi.org/10.53832/edtechhub.0135>. Available from <https://docs.edtechhub.org/lib/42XI4RCK>. Available under Creative Commons Attribution 4.0 International. ([details](#))
- NIPS/Pakistan, N. I. of P. S., & ICF. (2019). *Pakistan Demographic and Health Survey 2017-18*. <https://dhsprogram.com/publications/publication-fr354-dhs-final-reports.cfm>. ([details](#))
- Pak Alliance for Maths and Science. (2024). *The Missing Third of Pakistan: A tehsilwise analysis of out of school children* (pp. i–81). <https://mathsandscience.pk/publications/the-missing-third/>. ([details](#))
- Raford, K., Jetten, A., Ramesh Vasudevan, S., Hayat, A., Emerusenge, A. P., Rabi, A., Friese, L., & Mazari, H. (2026). *EdTech for Education in Emergencies: A Guidance Document for Education Specialists* [Other]. EdTech Hub. <https://doi.org/10.53832/edtechhub.1161>. Available from <https://docs.edtechhub.org/lib/T22ZEING>. Available under Creative Commons Attribution 4.0 International. ([details](#))

Read full policy brief online

This policy brief explores how EdTech can support a climate-resilient education system, drawing on insights from stakeholder consultations and EdTech Hub's research on learning continuity in response to climate emergencies following the 2022 Pakistan floods. While recovery efforts often focus on restoring physical infrastructure, we argue that a shift to long-term resilience against climate emergencies can be supported by strategic and contextually relevant use of EdTech.

<https://docs.edtechhub.org/lib/8GVHGX36>



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