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EVIDENCE REVIEW

EdTech for Education in Emergencies

A review of existing guidance and minimum standards

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Reviewers

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EdTech Hub is a global research partnership. Our goal is to empower people by giving them the evidence they need to make decisions about technology in education. Our evidence library is a repository of our latest research, findings, and wider literature on EdTech. As a global partnership, we seek to make our evidence available and accessible to those who are looking for EdTech solutions worldwide.

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Contents

Tables

Abbreviations and acronyms

DFID	Department for International Development
EiE	Education in Emergencies
FAQ	Frequently Asked Questions
FCDO	Foreign, Commonwealth and Development Office
ICT	Information and communications technology
IIEP	International Institute for Educational Planning
INEE	Interagency Network for Education in Emergencies
ISTE	International Society for Technology
M&E	Monitoring and Evaluation
MoE	Ministry of Education
MHPSS	Mental Health and Psychosocial Support
TPD	Teacher Professional Development
SEL	Social and emotional learning
UNHCR	United Nations High Commissioner for Refugees
USAID	United States Agency for International Development

1. Introduction

The education in emergencies (EiE) sector is committed to providing better education opportunities for children affected by crises. This includes developing quality standards and guidance for EiE actors. EdTech Hub is seeking to work with the EiE sector to build upon important work already done. We propose developing guidance for the feasible and sustainable use of technology to maintain learning continuity for children in the midst of emergencies. However, before taking significant steps to develop such guidance and to avoid duplication of efforts, we must understand what guidance already exists on the design and implementation of EdTech in emergencies and where gaps in such guidance persist.

1.1 Aim of the review

The overarching aim of this desk review is to provide the EdTech Hub team and others working in the sector with a clear picture of what guidance is available on the design and implementation of EdTech for emergency contexts, and what effective guidance could look like. The review's objectives are to:

- Understand the key commonalities between existing guidance documents (from adjacent disciplines beyond EdTech in EiE itself) as an indicator of good practice.
- Identify gaps in current guidance documents for EdTech within EiE. This may include gaps in content, accessibility, and equity.
- Establish whether a new set of guidelines for EdTech in EiE is required and, if it is, develop a set of recommendations for inclusion within this guidance to support existing good practice further and address the gaps identified.

1.2 Key definitions

The review adopts the following definitions:

Education in emergencies: "The quality learning opportunities for all ages in situations of crisis, including early childhood development, primary, secondary, non-formal, technical, vocational, higher, and adult education. Education in emergencies provides physical, psychosocial, and cognitive protection that can sustain and save lives" (↑Interagency Network for Education in Emergencies (INEE), 2024a).

EdTech: Educational technology. "Technologies—including hardware, software, and digital content—that are either designed or appropriated for educational purposes" (↑Hennessy et al., 2021, p. 8). The term 'information and communications technology' (ICT) is also used to refer to hardware and software for learning, and how these are deployed for educational purposes are highlighted in each instance.

Guidance: any document relating to the key areas of study that is instructional in nature.

Protracted crisis: "Situations characterized by recurrent natural disasters and/or conflict, longevity of food crises, breakdown of livelihoods and insufficient institutional capacity to react to the crises." (↑INEE, 2024a)

Preparedness phase: "Activities and measures taken in advance of a crisis to ensure an effective response to the impact of hazards, including issuing timely and effective early warnings and the temporary evacuation of people and property from threatened locations." (↑INEE, 2024a)

Recovery phase: "The restoration and improvement of facilities, livelihoods, living conditions, or psychosocial well-being of affected communities, including efforts to reduce disaster risk factors." (↑INEE, 2024a)

1.3 Review structure

Following this introduction, Section 2 presents the review methodology. Section 3 provides an overview table of all documents reviewed, followed by a comparative analysis of the key features of the documents in Section 4. Section 5 covers suggestions and our rationale for the key components to include in future guidance for EdTech in EiE, based on the desk review findings. Section 6 concludes the review with our recommendations.

2. Methodology

This review adopts a desk-based approach comprising a systematic sequence of searching, screening, and analysis. Details of each of these phases are presented in this section.

2.1 Search strategy

The first step in locating relevant materials for review was to define the inclusion criteria:

1. Published within the past 15 years
2. Available for free and via open access
3. Includes some reference to EdTech design and/or implementation (even if not the primary focus)
4. Relates to any of the following areas: education in emergencies; education; humanitarian work; tech design and development
5. Published (or endorsed) by a recognised agency or international organisation working in one of the areas listed in point 4
6. Presented as instructions or guidance (e.g., guidance note, toolkit, manual, or minimum standards)

Search terms were devised (see Annex 1) once the criteria listed above had been established. Given that guidance documents are much more likely to appear in grey literature than academic literature, Google (rather than Google Scholar or other academic databases) was used for searches.

Each search 'hit' was judged initially by its title and introductory paragraph (or equivalent) until we found no new relevant hits for at least two pages. Documents deemed relevant by their title and introduction were recorded and summarised in Google Sheets.

At this point, it is important to note that the searches surfaced several documents with minimal, and in some cases, no reference to technology or EdTech. However, because the research team considered these documents to be significantly detailed examples of guidance from other key sector areas under study (e.g., EiE in general), we decided to include them. We felt that important lessons on producing effective guidance for this sector could still be drawn from such documents.

These results were complemented by suggestions made by the EdTech Hub Education in Emergencies Working Group, whose combined and

significant knowledge and experience of the sector facilitated the addition of several other documents. A second, more detailed review of each document followed, and those not meeting the inclusion criteria were excluded. This screening process resulted in a sample of 23 guidance documents for analysis.

Note: While many of the documents reviewed were instructional in nature, our review did not cover the quality of instructional content and whether they were appropriately designed for learning. This was beyond the scope of this review.

2.2 Analysis strategy

The documents were reviewed using an analytical framework created in Google Sheets, which was primarily informed by the screening process, during which we noted key features of each document. These observations were then combined to suggest key questions for each document. We anticipated that the answers to these questions would prove useful for developers of future guidance. The questions ranged from basic ones relating to the authorship and format of the documents to more complex questions about the nature of the advice they provided and how the documents were structured. All questions and document titles were entered into an analytical framework, where answers to each question were recorded for each document.

2.3 Limitations

This review has three fundamental limitations stemming from the rapid review time frame and the nature of available evidence. These include:

1. **Search and inclusion strategy:** An inherent limitation of the review is that the search and inclusion strategy is not exhaustive by design. Given that the review focused heavily on snowball sampling, the search for grey literature is less rigorous, since it is not possible to use formal search strings in a standard Google search. Hence, a few sources may have been missed.

2. **Reliance on documents primarily presented in English:** Due primarily to time constraints, we were only able to search for documents in English. Some resources included in this search are also presented in various languages, but we were only able to analyse those already available in English.

3. **In-depth review of longer toolkits and guidance documents**: A few resources, such as the Mental Health and Psychosocial Support (MHPSS) toolkit, were expansive, with links to multiple other

resources housed under one toolkit. Given the timeframe for this review, we could only review some of the additional resources housed under certain guidance documents.

3. Overview of reviewed documents

The key details of the documents reviewed are captured alphabetically by title in the table below. For clarity, we have noted how each document is referred to in subsequent sections in this review in parentheses next to the source title in the first column. Where the title itself is used, no abbreviated form in parentheses is given. The table also provides key details relating to each document. A more detailed content summary for each source can also be found in Annex 2.

Table 1. *Key document details*

Source title and link	Citation (Author and date)	Author / publishing organisation details	Sector area (secondary area in brackets)
Checklist for Information and Communications Technologies (ICT) Interventions to Support Education in Crisis and Conflict Settings (Checklist for ICTs in EiCC)	↑INEE & USAID, 2018	Interagency Network for Education in Emergencies and USAID, the United States Agency for International Development INEE[1] is an open, global network based in the United States.	Education in Emergencies (Technology)
Conceptual Framework for Education in Emergencies Data	↑IIEP-UNESCO, 2023a	The International Institute for Educational Planning (IIEP)[2] is a body within UNESCO, a United Nations agency based in France.	Education in Emergencies

[1] See https://inee.org/about-inee . Retrieved October 2024.

[2] See https://www.iiep.unesco.org/en/who-we-are . Retrieved October 2024.

(Conceptual Framework for EiE Data)			
Dimagi's Maturity Model	↑Dimagi Inc, 2017	Dimagi[3] is a U.S.-based 'tech for good' social enterprise.	Technology (Humanitarian/ development)
EdTech for Learning in Emergencies and Displaced Settings: A rigorous review and narrative synthesis (StC EdTech for EiE Review)	↑Tauson & Stannard, 2018 For Save the Children	Save the Children[4] is an international charity based in the UK.	Education in Emergencies (Technology)
EdTech Tulna	↑EdTech Tulna, 2021	EdTech Tulna[5] is an India-based, evidence-driven evaluation index.	Education in general (Technology)
Education in Emergencies Guidance Note (EiE Guidance Note)	↑Cambridge Education, 2017	Cambridge Education[6] is a UK-based specialist education consultancy working to build strong education systems in different countries across Asia and Africa.	Education in Emergencies

[3] See https://dimagi.com/about/. Retrieved October 2024.

[4] See https://www.savethechildren.net/about-us. Retrieved October 2024.

[5] See https://www.edtechtulna.org/offering. Retrieved October 2024.

[6] See https://www.mottmac.com/education. Retrieved October 2024.

Education in Emergencies Toolkit (StC EiE Toolkit)	↑Save The Children, 2017	See above	Education in Emergencies
Guidebook for Planning Education in Emergencies and Reconstruction (Guidebook for EiE and Reconstruction)	↑IIEP-UNESCO, 2010	See above	Education in Emergencies
Guidelines and Toolkit for a Diagnosis of the Education in Emergencies Data Ecosystem (Diagnosis of EiE Data Ecosystem)	↑IIEP-UNESCO, 2023b	See above	Education in Emergencies
ICTs for Monitoring & Evaluation of Peacebuilding Programs (ICTs for M&E in Peacebuilding)	↑Corlazzoli, 2014	DFID[7] is now FCDO, the UK government's bilateral aid agency.	Technology (Humanitarian/ development)

[7] See https://www.gov.uk/government/organisations/department-for-international-development/about. Retrieved October 2024.

Inee Minimum Standards	↑INEE, 2024	See above	Education in Emergencies
Institutionalizing Education in Emergencies Data Production and Use for Crisis-Sensitive Educational Planning (Institutionalizing EiE Data)	↑IIEP-UNESCO, 2023c	See above	Education in Emergencies
ISTE Standards for Learning, Teaching and Leading With Technology (ISTE Standards)	↑ISTE, 2024	International Society for Technology in Education (ISTE)[8] is a non-profit, public-benefit corporation based in the United States.	Education in general (Technology)
MHPSS and EiE Toolkit	↑MHPSS.net, 2021	MHPSS.net[9] is an online community of practice for mental health and psychosocial support in challenging humanitarian and development contexts.	Education in Emergencies

[8] See https://iste.org/leadership. Retrieved October 2024.

[9] See http://mhpss.net/. Retrieved October 2024.

Non-Regulatory Guidance: Using Evidence to Strengthen Education Investments (Non-Regulatory Guidance)	↑U.S. Department of Education, 2023	The U.S. Department of Education[10] is an agency of the U.S. federal government	Education in general (Technology)
On Call: Using mobile technologies to measure learning in emergencies (On Call)	↑UNICEF, 2022	UNICEF[11] is a United Nations agency based in the United States with its research centre in Italy.	Education in Emergencies (Technology)
Principles for Digital Development	↑Principles for Digital Development Working Group, 2024	The Principles for Digital Development[12] have been developed by a group of international development donors, multilateral organisations, practitioners, and implementers.	Technology
Principles of Digital Learning for Refugee-Hosting Communities	↑UNHCR & UNICEF, 2023	UNHCR, the United Nations High Commissioner for Refugees[13] is a UN Agency based in Denmark.	Education in Emergencies (Technology)

[10] See https://www2.ed.gov/about/overview/focus/what.html . Retrieved October 2024.

[11] See https://www.unicef.org/who-we-are. Retrieved October 2024.

[12] See https://digitalprinciples.org/. Retrieved October 2024.

[13] See https://www.unhcr.org/. Retrieved October 2024.

(Digital Learning for Refugee-hosting Communities)			
Rapid Education and Risk Analysis Toolkit (RERA Toolkit)	↑USAID, n.d.	USAID[14] is the U.S. government's bilateral aid agency.	Education in Emergencies
Software Global Goods Valuation Framework (Software Global Goods)	↑USAID, 2019	See above	Technology (Humanitarian/ development)
Technology for Evaluation in Fragile and Conflict Affected States (Technology for Evaluation in Conflict)	↑Besa Global & The Fletcher School, 2016	Besa Global[15] is a Canada-based social enterprise. The Fletcher School[16] is the graduate school of global affairs at Tufts University, USA.	Technology (Humanitarian/ development)
The Complete Guide to Mobile Data Collection (Mobile Data Collection)	↑Dimagi Inc, 2024a	See above	Technology (Humanitarian/ development)

[14] See https://www.usaid.gov/ . Retrieved October 2024.

[15] See https://www.besaglobal.org/what-we-do. Retrieved October 2024.

[16] See https://fletcher.tufts.edu . Retrieved October 2024.

Total Cost of Ownership Model Toolkit (Total Cost of Ownership)	Dimagi Inc, 2024b	See above	Technology (Humanitarian/ development)

4. Comparative analysis

This section compares and contrasts the guidance documents to identify commonalities and gaps across the sample. We first consider the contexts and purposes for which the documents were written and, to the extent possible, the processes for developing the documents. We then analyse the documents' content, identifying and discussing themes and considerations that commonly (or rarely) emerge. Next, we consider all available evidence indicating if and how the guidance has been applied and the level of equity and inclusivity achieved by the documents. Finally, we focus on how and the extent to which the documents provide guidance relating to EdTech. Each section title corresponds to the questions posed within the analytical framework.

4.1 Context

4.1.1 Who authored the guidance?

A notable observation at the outset is that most of the documents reviewed are authored by organisations based or headquartered in high-income countries, primarily in the United States. Exceptions are **EdTech Tulna**, based in India, and some of the organisations that have contributed resources to the **MHPSS and EiE Toolkit**. This imbalance may be attributed to our searches being limited to the English language, and also reflects the fact that both the technology and international development sectors continue to be heavily dominated and supported by actors and funding from high-income countries. This raises an important question about the extent to which the voices of those to whom the guidance documents relate have been considered when creating these documents. We explore this issue further in the sections below.

4.1.2 Where is the guidance intended to be used?

The reviewed documents tend to have been designed for general application rather than a specific context or situation. Of the 23 documents, 15 are intended for use in conflict or crisis settings. Only four articulate a specific system or context in which the guidance is intended to be applied; two of the documents are intended for use in the United States (**ISTE Standards**; **Non-Regulatory Guidance**), and two others (**EdTech Tulna**; **Total Cost of Ownership**) for use in India (neither are identified as crisis settings). Beyond these, the authors of one of the toolkits reviewed (**RERA Toolkit**) suggest that their guidance has already been used in its current form in countries such as Liberia, the Democratic Republic of the Congo, and Lebanon, and they invite readers to adapt the document for

use in other contexts. This tendency towards generalised guidance is understandable, given that all guidance is, by nature, often an attempt to apply lessons from one context to another. However, by not attempting to account for factors present in specific contexts, and trying to maintain as broad a scope as possible, authors risk limiting the relevance and usefulness of the work they produce for particular situations, especially given the heterogeneity of development and crisis settings.

4.1.3 Who are the intended users of the guidance?

Almost all the guidance documents reviewed contain details of the intended audience, which can be grouped loosely into five intersecting categories:

1. Policymakers
2. Educators (which includes school leaders, teachers, and learning facilitators)
3. Education programme implementers
4. Researchers
5. Funders.

Intended users also range from broad categories such as 'practitioners' to staff at specific organisations. It is important to consider the issue of generalisation again here; some of the documents, such as the **INEE Minimum Standards**, claim to address a wide variety of education stakeholders, including education authorities, UN agencies, donor agencies, non-governmental organisations (NGOs), teachers, and researchers. Still, it is perhaps questionable whether all of these stakeholder groups will be equally and effectively served by a single document of this nature, especially given the challenges specific to each of the roles mentioned. There is perhaps an argument for guidance notes to be tailored to more specific audiences to ensure greater accessibility and relevance.

4.1.4 At what stages of an emergency is the guidance designed to be used?

Out of the 23 resources we analysed, various guidance documents refer to responses to different stages of an emergency. For example, The **StC EiE Toolkit** was specifically designed to respond to situations *immediately after* a crisis. On the other hand, **Digital Learning Refugee-hosting Communities**, designed by UNHCR and UNICEF, was mainly designed to be implemented during the *recovery stage* of a crisis. Similarly, resources such as **Diagnosis of EiE Data Ecosystem** and **ICTs for M&E in**

Peacebuilding highlight that they could be used in the *recovery and preparedness stages* of a crisis. Finally, a few resources highlight that they could be used during cases of a *protracted crisis* (**EiE Guidance Note; Institutionalizing EiE Data**). However, the nine other resources in the sample that relate to emergency contexts do not appear to target a specific stage of an emergency; instead, they are broadly applicable to different emergency contexts. This again raises questions about the availability of context-specific guidance for specific emergencies.

4.2 Development process

4.2.1 What kind of evidence do guidance documents rely on?

Many of the analysed resources highlight various ways in which they were created using an evidence-based approach. However, the types of resources and evidence used to build existing guidance documents vary. For example, resources such as the **Principles for Digital Development**, the **INEE Minimum Standards** and **IIEP-UNESCO's Conceptual Framework for EiE Data** highlight that they employed user consultation. Meanwhile, Cambridge Education's **EiE Guidance Note** and USAID's **Software Global Goods** highlight the use of specialist consultations. Several of these resources also highlight the use of pre-existing research as an evidence base (**Checklist for ICTs in EiCC; Conceptual Framework for EiE Data; Diagnosis of EiE Data Ecosystem; EdTech Tulna; EiE Guidance Note; On Call; StC EdTech for EiE Review**) while others (**Guidebook for EiE and Reconstruction; Total Cost of Ownership**) base their guidance notes on examples drawn from actual practices in emergency and development settings. Finally, some resources, such as the **Diagnosis of EiE Data Ecosystem**, **Dimagi's Maturity Model**, and **ISTE Standards**, rely on organisational experiences. This range of approaches raises questions about what can be considered a solid basis for guidance and what can be considered as *evidence*. Perhaps the ideal is for guidance to be founded on a combination of pre-existing research, user and specialist consultation, and field experience.

4.2.2 Is there evidence that the guidance has been updated or that feedback has been sought?

Of the 23 resources, there is evidence that seven have been updated since their initial creation. Three of these (**Conceptual Framework for EiE Data; ISTE Standards; Principles for Digital Development**) state that these updates are based on "global consultations" with various stakeholders. Relatedly, only five of the resources reviewed contain statements from the authors requesting user feedback to improve the guidance provided. Four (**EiE Guidance Note; MHPSS and EiE Toolkit; Non-Regulatory Guidance;**

Total Cost of Ownership) do this by providing an email address where users can send suggestions for improvement, while one (**ISTE Standards**) mentions being open to receiving feedback but does not suggest how users can contact the authors to do this.

4.2.3. Have the guidelines been designed to align with national or international laws, principles, policies, charters, or other relevant frameworks?

A key analysis component included the extent to which guidance documents are situated within larger political or international laws and frameworks; this is an important consideration as alignment with such mechanisms may increase the relevance, credibility, and uptake of the guidance offered. Out of the 23 resources analysed, 13 refer to, are endorsed by, or claim to be aligned with larger political and international frameworks. This is important to consider, as alignment with such mechanisms may increase the guidelines' relevance, reliability, and impact. Examples of these frameworks include the following.

Humanitarian frameworks

The **INEE Minimum Standards** are guided by various humanitarian frameworks, including the *Core Humanitarian Standard on Quality and Accountability,*[17] the 'Protection Principles of the United Nations Refugee Agency'[18] and Sphere's *Humanitarian Charter.*[19] Elsewhere, **Digital Learning Refugee-hosting Communities** was developed under the UNHCR and UNICEF Blueprint for Joint Action in line with the *Global Compact for Refugees.*[20]

Country/regional standards

EdTech Tulna was designed to align with India's national education standards. Similarly, DFID's[21] document on **ICTs for M&E in Peacebuilding**

[17] See https://www.corehumanitarianstandard.org/. Retrieved December 2024.

[18] See https://emergency.unhcr.org/protection/protection-principles. Retrieved December 2024.

[19] See https://www.spherestandards.org/humanitarian-standards/humanitarian-charter/. Retrieved December 2024.

[20] See https://www.unhcr.org/africa/about-unhcr/our-partners/un-and-international-institutions/international-organizations/unhcr-unicef. Retrieved December 2024.

[21] Now FCDO.

was developed under the UK government's Conflict, Crime, and Violence Results Initiative (CCVRI).[22]

School-specific standards

Two resources are aligned with frameworks that relate directly to implementation in school and formal learning settings: the **Non-Regulatory Guidance**, which is aligned with the U.S. Elementary and Secondary Education Act of 1965[23], and IIEP-UNESCO's **Institutionalizing EiE Data**, which aligns with the inter-governmental 'Safe Schools Declaration'[24] and the *Comprehensive School Safety Framework*.[25]

Internationally recognised frameworks for change

Multiple resources, such as the **Conceptual Framework for EiE data**, IIEP-UNESCO's **Diagnosis of EiE Data Ecosystem** and **ISTE Standards** claim to be aligned with the UN Sustainable Development Goals (SDGs). Similarly, IIEP-UNESCO's **Guidebook for EiE and Reconstruction** is aligned with the Dakar Framework for Action.[26]

4.3 Content

4.3.1 Organisation of content

Authors organise their guidance documents in different ways, often depending on the subject matter. It is helpful to consider the available options when developing future guidance, as choices relating to how these documents are structured will likely affect their accessibility.

Organised according to the context: These include Cambridge Education's **EiE Guidance Note**, which divides content by protracted conflicts, refugee crises, or natural disasters, and the **MHPSS and EiE Toolkit**, which has different sections on disaster and conflict settings.

[22] See https://www.gov.uk/government/publications/conflict-crime-and-violence-results-initiative-good-practice-guides-on-security-and-justice-issues. Retrieved December 2024.

[23] See https://www.ed.gov/laws-and-policy/laws-preschool-grade-12-education/esea. Retrieved December 2024.

[24] See https://ssd.protectingeducation.org/. Retrieved 2024.

[25] See https://gadrrres.net/comprehensive-school-safety-framework. Retrieved 2024.

[26] The *Dakar Framework for Action* is based on the Education for All (EFA) 2000 Assessment. The Education for All (EFA) movement is a global commitment to provide quality basic education for all children, youth, and adults (see ↑Right To Education, 2023).

Organised by thematic considerations: These include 'access and inclusion', 'teachers and learners' (**Guidebook for EiE and Reconstruction**), 'monitoring', 'curricula', 'planning and implementation' (**INEE Minimum Standards**), and 'MHPSS and education' (**MHPSS and EiE Toolkit**).

Organised by process or phase: These include various resources that are presented as a roadmap (**Dimagi's Maturity Model**), a design flowchart (**Technology for Evaluation in Conflict**) and organised chronologically (**Diagnosis of EiE Data Ecosystem; Non-Regulatory Guidance; RERA Toolkit**).

Intended to be completed by the reader: Some resources allow readers to complete various tasks to understand the presented content. These include spaces and check boxes for written notes or responses (**Checklist for ICTs in EiCC**), and a calculation spreadsheet (**Total Cost of Ownership**).

Others: One resource (**ICTs for M&E in Peacebuilding**) is organised by the type of EdTech tool being discussed, including mobile phones, social media, or digital surveys. Finally, one resource (**ISTE Standards**) is organised by the intended audience, with different sections for students, educators, education leaders, and coaches, and this may be a helpful way to address the issue of multiple intended audiences noted in Section 4.1.

4.3.2 What is the main subject focus of the guidance?

In terms of subject matter, 13 of the documents reviewed have EiE as a central focus, three focus on education in general (with a secondary focus on technology), and seven focus on the use of technology in humanitarian or development contexts more broadly. It is surprising that more sources on technology use within education more broadly were not picked up by the searches, given the considerable size of the EdTech sector beyond crisis contexts. It is possible that the inclusion of other keywords in the search terms eliminated sources that did not concern education in crisis (see Annex 1).

Of the 23 documents reviewed, only four (**Checklist for ICTs in EiCC; Digital Learning Refugee-hosting Communities; On Call; StC EdTech for EiE Review**) focused explicitly on both EiE and EdTech. In all four cases, the guidance (or the element of the document that is instructional) is brief and without reference to context. In the case of **On Call**, the guidance is more detailed but relates only to educational assessment using mobile technology. These observations indicate a gap in detailed guidance regarding the design and use of EdTech in emergencies.

Beyond broad subject focus, most guidance documents analysed highlight their purpose explicitly. Some of these purposes include the categories listed below.

Providing guidance for education programming in crisis contexts

This includes guidance on:

- Creating situational analyses that precede educational interventions in crisis contexts (**RERA Toolkit**)
- Enriching the quality of the planning and management applied (**Guidebook for EiE and Reconstruction**)
- Encouraging dialogue for planning and programming to ultimately strengthen the quality of interventions (**MHPSS and EiE Toolkit**)
- Creating a conceptual framework for an EiE response plan (**StC EiE Toolkit**).

Guiding the use of EdTech within EiE settings

In addition to the **StC EdTech for EiE Review**'s overarching guidance on the use of EdTech in crisis settings, guidance in this category includes:

- Ensuring that ICT implementation within EiE is conflict-sensitive (**Checklist for ICTs in EiCC**)
- Use of technology in evaluations in crisis contexts (**Technology for Evaluation in Conflict**)
- Use of technology for assessment in EiE (**On Call**)
- Integration of ICTs in monitoring and evaluation processes for peace-building programmes (**ICTs for M&E in Peacebuilding**)
- Use of EdTech for refugee inclusion (**Digital Learning for Refugee-hosting Communities**).

Guiding the development of digital tools

These include:

- Documents focused on content quality and pedagogical alignment (**EdTech Tulna**)
- Tools to estimate the development and ongoing costs of ICTs (**Software Global Goods**)
- Tools to guide the development of digital tools in an ethical direction (**Principles for Digital Development**).

Guiding the use of ICTs in education more broadly

This includes guidance

- For educators, leaders, and coaches on how to use technology effectively and ethically in learning experiences (**ISTE Standards**)
- On the use of ICT in data collection in low- and middle-income countries (**Mobile Data Collection**).

Other stated purposes that do not fall into any of the above categories

These include:

- Guidance on scaling digital tools (**Dimagi's Maturity Model**)
- Estimating the cost of adopting technology for assessment purposes (**Total Cost of Ownership**)
- Selecting components for education programmes (**Non-Regulatory Guidance**)
- Improving EiE data systems and integrating EiE data in national systems (**Conceptual Framework for EiE Data; Diagnosis of EiE Data Ecosystem; Institutionalizing EiE Data**)
- Providing access to other tools (**MHPSS and EiE Toolkit**) and highlighting the organisation's current approach to EiE for new staff to be used during training (**StC EiE Toolkit**).

In addition to these explicit purposes, many documents had overlapping themes. These are presented in Table 2 below:

Table 2. *Trends in content included/main focus of reviewed documents*

Themes	Resources
Equity/inclusivity	These resources provide some guidance on equity and inclusion; guidance is centred around technology being accessible by various users in different contexts: **Checklist for ICTs in EiCC; Digital Learning for Refugee-hosting Communities; EdTech Tulna; Guidebook for EiE and Reconstruction; INEE Minimum Standards; ISTE Standards; Principles for Digital Development; StC EdTech for EiE Review; StC EiE Toolkit.**
User Engagement/co-design	The following resources highlight the importance of participatory methods during design and implementation. They advocate for a contextualised approach, including analysing the implementation environment and identifying user stories and use cases: **INEE Minimum Standards; Mobile Data Collection; On Call; Principles for Digital Development.**
Testing/Piloting	Two resources focus on iterative testing, including pilots and usability testing: **Mobile Data Collection; On Call.**
Contextualisation	Three resources highlight the importance of contextualised responses to an emergency/crisis: **Checklist for ICTs in EiCC; EdTech Tulna; INEE Minimum Standards.**
Needs assessment/situation analysis	These resources suggest how to undertake a needs assessment or create a situational analysis, the importance of doing so, and how the assessment and analysis can feed into programming in both conflict and non-conflict settings: **Digital Learning for Refugee-hosting Communities; Mobile Data Collection; On Call; RERA Toolkit; StC EiE Toolkit; StC EdTech for EiE Review.**
Sustainability	These resources emphasise the importance of sustainability. This does not just relate to programme design and implementation but also to other factors such as user participation, data collection methodologies, and inclusive practices, which are all highlighted as important drivers of sustainability: **Diagnosis of EiE Data Ecosystem;**

Themes	Resources
	Dimagi's Maturity Model; Institutionalizing EiE Data; ISTE Standards; Mobile Data Collection; Principles for Digital Development.
Transparency	These resources emphasise that guidance should be carefully crafted so as not to worsen a situation. One way to do this is to create structures that encourage transparency in data collection, data privacy, child protection considerations, and funding: Checklist for ICTs in EiCC; Principles for Digital Development.
Choosing what technology to use based on evidence	These resources include an EdTech focus and encourage users to rely on an evidence-based approach for the use of EdTech in sensitive situations: EiE Guidance Note; Diagnosis of EiE Data Ecosystem; Dimagi's Maturity Model; Non-Regulatory Guidance; Principles for Digital Development; Technology for Evaluation in Conflict.
Data protection/security	Online safety and safe practices for the collection and use of data and EdTech are highlighted in these resources: Checklist for ICTs in EiCC; EiE Guidance Note; INEE Minimum Standards; On Call; Principles for Digital Development; Technology for Evaluation in Conflict.
Stakeholder coordination/collaboration	Collaboration between various actors in an emergency setting to ensure effectiveness and stop duplication of efforts is a central theme in these resources: Conceptual Framework for EiE Data; EiE Guidance Note; INEE Minimum Standards.
Cost-effectiveness	While they do not consider cost-effectiveness in depth, these resources draw connections between cost-effective analysis, information, and decision-making: EiE Guidance Note; On Call; Software Global Goods; StC EdTech for EiE Review; Total Cost of Ownership.

Themes	Resources
System strengthening	A key theme in the resources cited here is building the capacity of local, state, national, and international actors. These resources focus on building resilient education systems through accurate and timely data. They also emphasise the need for better coordination across the 'humanitarian-development' nexus so that education can be provided safely and equitably to all in both the short and long term. The resources are: **Checklist for ICTs in EiCC; Conceptual Framework for EiE Data; Diagnosis of EiE Data Ecosystem; EiE Guidance Note; INEE Minimum Standards; Institutionalizing EiE Data; StC EiE Toolkit**.
M&E/assessment	These documents have a strong monitoring and evaluation focus or a focus on assessments and the impact of data collection on building strong programmes: **Checklist for ICTs in EiCC; EiE Guidance Note; ICTs for M&E in Peacebuilding; Guidebook for EiE and Reconstruction; INEE Minimum Standards; StC EiE Toolkit; On Call; Digital Learning for Refugee-hosting Communities.**
Professional development/training	These resources centre on teacher professional development (TPD) and the development of formal and non-formal teachers in EiE and non-EiE settings. Some of these resources also touch upon the role of EdTech in building strong TPD systems in conflict settings: **Dimagi's Maturity Model; EiE Guidance Note; Guidebook for EiE and Reconstruction; INEE Minimum Standards; Mobile Data Collection; On Call; StC EiE Toolkit; Total Cost of Ownership.**
Recruitment/staffing	Building a strong and resilient workforce to implement various EiE programmes is a key theme in these resources: **Guidebook for EiE and Reconstruction; StC EiE Toolkit.**
Management/logistics	These documents emphasise the importance of strong management structures to aid efficient implementation of EdTech programmes: **Checklist for ICTs in EiCC; StC EiE Toolkit**.

Themes	Resources
Procurement and maintenance	These resources highlight the need to build on existing EdTech structures in EiE settings and not increase access to hardware without sufficient training and consideration for procurement and maintenance costs: **Software Global Goods; StC EiE Toolkit.**
MHPSS/Social and emotional learning (SEL)	These resources highlight how MHPSS and SEL need to be considered for any education programme in EiE settings: **MHPSS and EiE Toolkit; StC EiE Toolkit.**

While a reasonable number of documents focus on themes such as equity, systems strengthening, and professional development/teacher professional development (TPD), few consider implementation factors such as logistics and procurement. Similarly, while several documents mention the need for cost-effectiveness, few of them include guidance on calculating it or ensuring that an intervention is cost-effective. Therefore, there is an apparent gap in practical, implementation-related guidance.

4.4 Is EdTech a primary focus?

Only six of the 23 documents reviewed have EdTech as a primary focus. Most of the remaining documents focus on the broader use of technology in emergency contexts or EdTech as a supplementary consideration (**Guidebook for EiE and Reconstruction**). Of those focusing primarily on EdTech, four (**Checklist for ICTs in EiCC; Digital Learning for Refugee-hosting Communities; On Call; StC EdTech for EiE Review**) provide guidance on using EdTech in emergency contexts. Of these four, two (**Digital Learning for Refugee-hosting Communities; StC EdTech for EiE Review)** relate to how technology can facilitate learning. One (**On Call**) relates to using mobile technology to measure learning, and one (**Checklist for ICTs in EiCC**) covers both areas by providing a checklist to support EdTech interventions, including monitoring and evaluation.

On the other hand, seven of the analysed resources focus primarily on technology but are not specifically centred on EdTech. Of these resources, two refer to technologies to visualise data and conduct evaluations in fragile and conflict-affected contexts (**MHPSS and EiE Toolkit; Technology for Evaluation in Conflict**), one provides guidance on collecting data using mobile devices (**Mobile Data Collection**), and another refers to digital development more broadly (**Principles for Digital Development**). Finally, ten of 23 analysed resources do not focus on technology at all.

4.5 What types of technology are considered?

Most sources do not focus on any particular type of technology; they discuss it in general terms and provide general guidance. Those that do specify the type of technology tend to focus on mobile technologies—primarily mobile phones and tablets. These devices are mainly used for data collection and feedback, digital literacy, and other educational activities (**Checklist for ICTs in EiCC; Dimagi's Maturity Model; Guidebook for EiE and Reconstruction; ICTs for M&E in Peacebuilding; INEE Minimum Standards; Mobile Data Collection; On Call; Technology for Evaluation in Conflict; Total Cost of Ownership**).

A few documents specifically mention other devices such as radio, TV, and digital cameras, and other technology-enabled modalities such as social media and video-conferencing (**Checklist for ICTs in EiCC; Guidebook for EiE and Reconstruction; ICTs for M&E in Peacebuilding; Technology for Evaluation in Conflict**). Table 3 shows the number of resources discussing each device.

Table 3. *Number of resources discussing digital devices*

Devices	Number of resources
Mobile phones	9
Tablets	5
Radio	2
Digital cameras	2
Projectors	1
Computers/Laptops	1
TV	1
CD ROMs	1

The fact that most documents focus on mobile technologies may indicate the types of technology that tend to be most accessible in emergency and development contexts. However, this may also suggest that other forms of technology, which may be valuable additions to emergency responses or development situations, are currently being overlooked.

4.6 What are the key guidance points given about EdTech?

Only eight of the 23 resources analysed include key guidance on using EdTech. In some resources, such as the **INEE Minimum Standards**, where EdTech is not a specific area of focus, guidance on the use of EdTech is provided in relation to broader learning goals. For example, guidelines are given on:

- Assessing how technology supports learning with digital tools.

- Using compatible tools such as software to handle data from educational institutions so that different educational departments can share data.
- Using mobile phones for data collection in low-resource settings.

Contextually appropriate usage of EdTech

The **Checklist for ICTs in EiCC** has several key points on the need to understand who uses technology, ensure that educational content is fair and equal to all and easy to understand and that everyone can access the necessary technology. Similarly, the **StC EdTech for EiE Review** highlights that the best and most useful EdTech programmes are well thought out, carefully planned, and integrated into broader learning goals. For example, effective programmes are well aligned with the relevant curricula, have teacher and parent buy-in, are adaptive to the learners' levels, and are contextually appropriate.

EdTech for data

UNESCO-IIEP's **Guidebook for EiE and Reconstruction** highlights the potential of technology to increase access to education, improve data collection and analysis, and improve communication between key stakeholders. It also includes instances of technology-enabled interventions in various contexts, such as SchoolNet Uganda[27] (building capacity and infrastructure) and Community Internet Centres[28] in refugee camps in Tanzania.

EdTech for content creation

EdTech Tulna focuses on providing guidance on EdTech content and pedagogy, highlighting the importance of standards for evaluating the accuracy of content, age appropriateness of the content provided on digital platforms, and the standards for technology and design. These standards evaluate how well the technological affordances integrate with the pedagogy and content to promote a meaningful learning experience.

While there is an emphasis on using EdTech for activities such as data collection, content development, and TPD, themes such as how EdTech

[27] SchoolNet Uganda is a private NGO, based at Uganda's Ministry of Education and Sports that provides ICT infrastructure to schools and technical and pedagogical training and support for stakeholders. See https://unesdoc.unesco.org/ark:/48223/pf0000190223/PDF/190223eng.pdf.multi. Retrieved 3 December 2024.

[28] The Community Internet Centres were set up in two refugee camps and a teacher college by UNHCR and Global Catalyst Foundation. See https://unesdoc.unesco.org/ark:/48223/pf0000190223/PDF/190223eng.pdf.multi. Retrieved 3 December 2024.

can support MHPSS, maintenance and procurement of hardware, and how to incorporate EdTech programming into larger education goals are not covered.

4.7 What are the key guidance points for technology development more broadly?

Five resources focus on several themes on the use of technology more broadly, with four (**ICTs for M&E in Peacebuilding; Mobile Data Collection; Principles for Digital Development; Technology for Evaluation in Conflict**) falling into multiple guidance point categories.

Contextualised use of technology

The authors of **ICTs for M&E in Peacebuilding, Mobile Data Collection, Principles for Digital Development,** and **Technology for Evaluation in Conflict** advocate for a tailored approach to the use of technology by accounting for the users and their environments. **ICTs for Monitoring & Evaluation of Peacebuilding** explicitly refers to the need to align programmatic needs with technology use but does not specify one technology over another. **Technology for Evaluation in Conflict** emphasises the importance of aligning technology with cultural norms and practices. The **Principles for Digital Development** resource highlights developing an understanding of the relevant ecosystem, while the **Mobile Data Collection** guide focuses on the environment and users, including suggestions for iterative testing and using context-appropriate devices.

User-centred design and how it drives sustainability

Principles for Digital Development explicitly references the need to design with the users (establishing a 'people-first' approach towards data-related activities), which minimises risks and ensures sustainability. Similarly, **Mobile Data Collection** also mentions building sustainability, incentivising users, and capacity-building for the users of data collection apps such as CommCare.[29]

Financial considerations in technology

The authors of **Total Cost of Ownership** identify and expand upon costs associated with using mobile technology, including training and operational costs such as hosting solutions, equipment costs, and salaries.

[29] Designed by Dimagi, Inc., CommCare is a mobile app for data collection used by monitoring and evaluation teams globally. For more details, see https://dimagi.com/commcare/. Retrieved 3 December 2024.

Technology for monitoring and evaluation

ICTs for M&E in Peacebuilding underscores the usefulness of acquiring real-time data through technology and highlighting safety considerations for data collection. Technology for Evaluation in Conflict highlights how technology can be used to reduce costs and ease the creation of feedback loops for evaluation.

4.8 Applicability

4.8.1 Do the documents suggest which activities could be informed by the guidance? If so, what are these?

The guidance documents reference different types of activities or areas of work, which can be categorised as follows.

Design of digital learning tools

While the resources are not explicitly product design tools, aspects of Principles for Digital Development come under this category since the document can be used as a design checklist for the early stages of project or product development. Similarly, EdTech Tulna is an evidence-based product evaluation index that helps end-users assess the quality of EdTech offerings while also providing companies with quality criteria that can influence the design of their EdTech products.

Policy design and implementation

In addition to being relevant to product design, Principles for Digital Development is useful in informing stakeholders involved in the design and implementation of policies and systems, as well as in anticipating and avoiding associated risks. Other documents also address elements within the broad category of policy design, with the ISTE Standards focusing on system-wide activities at the local, district, or state level, including digital learning plans. The Guidebook for EiE and Reconstruction aims to assist users with planning and management during and following emergencies, and the Digital Learning for Refugee-hosting Communities document considers the planning and implementation of technology-enabled education for refugees.

Programme development and analysis

Documents reference different kinds of activities under the broad umbrella of programme development, with some providing more details than others. For instance, the EiE Guidance Note discusses programme development through local stakeholder consultation with the government. ISTE Standards provides details on development planning, such as curriculum mapping, including technology in lesson designs, and teacher

preparation. The **Guidebook for EiE and Reconstruction** covers capacity building, inclusion, and teacher training. The **Non-Regulatory Guidance** provides advice on the selection and use of evidence-based strategies and activities, and **INEE Minimum Standards** also focuses on ensuring community involvement in the planning and implementation phases. Although the **Diagnosis of EiE Data Ecosystem** document largely focuses on data-related activities (see the next paragraph), it could also be included in the category of programme preparation with its focus on identifying data needs and gaps. **StC EdTech for EiE Review** also stresses the importance of needs analyses and pairing the type of emergency with a relevant technology through a situational analysis.

Data-related activities

Ten of 23 documents mentioned data-related activities such as production, monitoring, and evaluation. The **Conceptual Framework for EiE Data, Diagnosis of EiE Data Ecosystem**, and **Institutionalizing EiE Data documents** are part of a suite of documents focused on improving the data ecosystem through identifying data needs, mapping and assessing EiE data, institutionalising, standardising, and sharing data. Six documents reference monitoring and evaluation activities and assessments. **INEE Minimum Standards** emphasises the need for monitoring and evaluation in education for accountability, and the **ICTs for M&E in Peacebuilding** document highlights how technology can provide opportunities for using rapid and real-time monitoring and tracking indicators. **Technology for Evaluation in Conflict** similarly mentions that technology can help evaluators in fragile contexts with activities such as data collection, integration, evaluation, and management. UNICEF's **On Call** document mentions activities such as formative assessments and measuring foundational skills. The **Checklist for ICTs in EiCC** encourages impact assessments to ensure that communities' needs are being met by the technology in question. **StC EdTech for EiE Review** stresses the importance of implementers assessing families' and children's needs. The **Mobile Data Collection** document provides explicit guidelines on using mobile devices to collect qualitative and quantitative data.

Programme scaling

Only **Dimagi's Maturity Model** highlights scaling. It contains a matrix that suggests six programme areas in scaling (programme design, data-driven management, technical support, training and implementation, scale, sustainability, and strategic alignment) across five stages (proof of concept, stabilised and field-tested systems, validated systems for delivering value to frontline workers, packaged repeatable systems for scale up, ongoing stable use of systems providing value at scale).

Costing and cost-effectiveness

Details on cost-effectiveness are sparse in the reviewed documents, while costing is more frequently covered. For instance, the **Total Cost of Ownership** document is the only document providing guidelines on costing for mobile-based solutions. Similarly, **Software Global Goods** mentions retrospective and ongoing costs, but stops short of delving into cost-effectiveness within the framework. On the other hand, the **Guidebook for EiE and Reconstruction** references cost-effectiveness in distance education but does not adequately explain it. UNICEF's **On Call** report states that mobile technologies are cost-effective in conducting formative assessments, but does not support this with evidence, while Cambridge Education's **EiE Guidance Note** includes a brief on cost-effective delivery in the annexes.

Most of the resources provide readers with guidance around data-related activities and programme development and analysis. This highlights the implementation focus in many of the analysed guidance documents. However, not as many documents focus on costing.

4.8.2 Are examples of real-world application of the guidance included? Is there evidence to suggest the effectiveness of the guidance in real-world applications?

Seven out of the 23 resources highlight instances where the guidance has already been used in an actual situation, while one document references its use without providing evidence (**ISTE Standards**).

Real-world application and effectiveness

Although seven resources include applied examples to varying degrees, rigorous evidence of effectiveness is not available in any of them. These documents usually provide case study examples of the guidance being used. For example, the **EiE Guidance Note** includes a summary of lessons learnt across three different contexts—protracted conflict, refugee crises, and natural disasters—with references to South Sudan, Lebanon, and Jordan, and the **RERA Toolkit** illustrates examples of use from the Middle East and sub-Saharan Africa. The **INEE Minimum Standards** website also contains several country case studies on using the standards. Three of the seven documents (**Conceptual Framework for EiE Data; Diagnosis of EiE Data Ecosystem; Software Global Goods**) were reportedly tested, but the results of this testing are not available within them. **Conceptual Framework for EiE Data** and **Diagnosis of EiE Data Ecosystem** were both tested in different countries (Ecuador, Ethiopia, Jordan, and South Sudan), but do not provide additional details on how this testing was conducted. Finally, USAID's **Software Global Goods** document was tested on three

global goods, but there is no evidence to suggest how it has been used since then.

4.8.3 Are any supporting documents provided to help users use the guidance effectively?

For the purposes of this review, all external documents or materials that supplement the main guidance by providing additional context, background, resources, or support with toolkits are considered supporting documents. This includes, but is not limited to, frequently asked questions (FAQs), additional tools, frameworks, and evidence briefs. Documents developed as a suite of global public goods or document collections accessible through one online portal are also included under supporting documents.

The resources with supporting documents (nine had none) can be categorised as set out in Table 4 below.

Table 4. *Categories of supporting documents*

Supporting documents	Resources
Frequently Asked Questions	■ **INEE Minimum Standards** and **Principles for Digital Development** include FAQs on their websites.
Background evidence briefs	■ Cambridge Education's **EiE Guidance Note** was developed from six evidence briefs covering six thematic areas: accountability, cost-effective delivery, data monitoring and evaluation, political settlements, quality and learning, and protection and inclusion. The evidence briefs are included as annexes in the guidance note.
Guidance notes and other supplementary resources	■ **INEE Minimum Standards** contains links to several resources, guidance notes, and actions accompanying each standard. ■ **Non-Regulatory Guidance** is accompanied by online courses to support students and educators. ■ The **Mobile Data Collection** document points users to the Dimagi website for information. ■ **Diagnosis of EiE Data Ecosystem, Checklist for ICTs in EiCC**, and **RERA Toolkit** include a collection of linked tools and supporting documents. **Institutionalizing EiE Data** contains linked resources throughout the main document. Similarly, **Guidebook for EiE and Reconstruction** contains tools and resources linked within the main document, such as the *INEE Pocket Guide to Inclusive Education*[30] and the *Hyogo Framework for Action*.[31]

[30] This version of the document was sourced from INEE in 2004 and provided guidance on making EiE accessible and inclusive for everyone, including marginalised people.

[31] Adopted in 2005, the Hyogo Framework for Action was a blueprint for disaster risk reduction that aimed to reduce losses induced by disaster by 2015. For more details, see https://www.preventionweb.net/publication/hyogo-framework-action-2005-2015-building-resilience-nations-and-communities-disasters. Retrieved 3 December 2024.

	■ **ICTs for M&E in Peacebuilding** lists four other documents in the series; all are focused on best practices and tools for monitoring and evaluation in fragile and conflict-affected environments.
Suite of resources	■ The **Conceptual Framework for EiE Data** is part of a suite of documents that also includes **Diagnosis of EiE Data Ecosystem** and **Institutionalizing EiE Data. Diagnosis of EiE Data Ecosystem** was informed by inputs for six country case studies analysing the EiE data landscape but does not include them as supporting documents. These three IIEP-UNESCO resources were released together to strengthen data systems for EiE. ■ The **StC EiE Toolkit** is part of a larger guidance pack, the *EiE Essential Resource Pack*,[32] which includes a framing document and an online library.
Collections of resources	■ The **MHPSS and EiE Toolkit** is a collection of various resources and documents on emergencies divided into 11 broad categories: MHPSS, EiE, MHPSS and education, conflict, disaster, forced migration, child protection, inclusion and gender, child-friendly spaces, psychological first aid, teacher support, and Covid-19.

[32] See https://resourcecentre.savethechildren.net/collection/education-in-emergencies-essential-resource-pack/. Retrieved 3 December 2024.

4.9 Equity and inclusion

4.9.1 Is there evidence that the guidance has been developed with gender and social inclusion in mind?

While some resources mention equity and inclusion, most do not explore what creating inclusive or gender-sensitive programmes involves. Nearly half make no mention of gender, considerations for people with disabilities, socio-economic status, or inclusion. Of the remaining half, most documents briefly note disparities around gender and disabilities without outlining how readers could bring inclusivity into practice. **INEE Minimum Standards** provides the most detailed guidance on social inclusion.

Gender disparities are generally discussed in depth more frequently than social inclusion. Children with disabilities are referenced as frequently as gender—in 12 out of the 23 documents—but the resources do not consider both areas in equal detail. For instance, several texts provide guidance on ways to overcome barriers based on gender differences and on accounting for and considering cases of gender-based violence, noting how emergencies affect girls and women differently. However, texts discussing disabilities group them together, rarely differentiating between different types of disability. The documents were analysed to determine how they covered social inclusion, in particular, the treatment of gender, disabilities, geography, and socio-economic status as follows.

Gender

Eleven resources mention gender inclusivity in some form, although not all engage with this area. Eight resources focus on overcoming barriers along gender lines and include guidelines on strategies for inclusion, with some (e.g., **Conceptual Framework for EiE Data; RERA Toolkit**) also including references to gender-based violence in the text. Disaggregation of data along gender lines was a focus in **Conceptual Framework for EiE Data**, **Institutionalizing EiE Data,** and **RERA Toolkit**. **Institutionalizing EiE Data** also references gender equality as an indicator and **RERA Toolkit** stresses the importance of gender balance among teams involved in risk analysis to ensure sensitivity. Three resources only briefly mention inclusivity along gender lines without delving into specifics (**EdTech Tulna; Digital Learning for Refugee-hosting Communities; ICTs for M&E in Peacebuilding**). However, the **MHPSS and EIE Toolkit** includes at least ten documents on inclusion and gender, with five resources on gender-responsive programming and gender-based violence interventions alone.

Disability considerations

Twelve resources include mentions of disabilities. As with gender, three resources recommend data disaggregation by disability status (**EiE Guidance Note; Institutionalizing EiE Data; RERA Toolkit**). In-depth guidance on disabilities is rare, with only **INEE Minimum Standards** and **MHPSS and EIE Toolkit** offering a nuanced understanding of the umbrella term. For instance, **INEE Minimum Standards** defines disability as an evolving concept, highlights visible and invisible disabilities, and includes links to standards for people with disabilities. Similarly, the **MHPSS and EIE Toolkit** lists two documents focusing only on disabilities in EiE and three on inclusion more broadly. Nine resources reference disabilities under the broader term of inclusion. **StC EdTech for EiE Review** identifies a gap in the literature with regard to children with disabilities and EdTech in emergencies, and **On Call** focuses on identifying disability status to ensure the appropriate delivery mode for assessments.

Inclusion across geography, income, identity, age and socio-economic status

Only five documents contain references to inclusion across other aspects, such as geography and socio-economic status. Data disaggregation by location and identity is a theme in **Conceptual Framework for EiE Data**, **Diagnosis of EiE Data Ecosystem**, **Institutionalizing EiE Data** and **RERA Toolkit**. Meanwhile, **ICTs for M&E in Peacebuilding** cautions against selection bias during monitoring and evaluation, especially for low-income, vulnerable, or older populations. Finally, three documents linked under the **MHPSS and EIE Toolkit** discuss inclusion in emergencies in broad terms.

Format

Eighteen of the documents are available as PDFs that are either downloadable or viewable within a web browser. These vary significantly in length, from two pages (**Digital Learning for Refugee-hosting Communities**) to 256 pages (**INEE Minimum Standards**). While the level of detail clearly varies across the documents, it is important to note that larger documents may be less accessible to users in low-connectivity settings due to the bandwidth required to download or access them. Four other resources take the form of web pages, with **INEE Minimum Standards** available as a web page and also as a downloadable PDF. Finally, one (**Total Cost of Ownership**) is presented as an Excel spreadsheet; this and one of the PDF documents (**Checklist for ICTs in EiCC**) are intended to be used as tools that can be completed by the user. Formats where the user can navigate content interactively lend themselves well to larger guidance documents with complex structures and several subsections, rendering this a useful alternative to large PDFs.

5. Conclusion

This review aims to provide an understanding of currently available guidance on implementing EdTech in conflict and crisis settings, and what lessons can be learnt on producing guidance in this area, based on examples from relevant fields of work and study (i.e., education; EiE; humanitarian and development work; technology). It is also an exercise to determine whether a new set of guidelines for EdTech in EiE is required and, if it is, to develop a set of proposed recommendations to provide further support for the EiE sector.

In terms of context and purpose, most resources reviewed are general rather than contextualised and have been largely designed by actors in high-income countries. The reviewed guidance documents are intended for a wide range of stakeholders and purposes, and typically cover the design and implementation of interventions. Regarding development processes, most documents were created with the input of specialist advisors. However, few authors consulted users or sought their feedback, and just over half were situated in the context of larger frameworks.

From a content perspective, only four of the 23 documents focus explicitly on both EiE and technology. Equity and inclusion are mentioned briefly in most documents, but specific information on how these issues intersect with EdTech is minimal. Other notable content gaps include considerations of costing, value for money, scaling, and the more logistical elements of implementation, such as procurement and maintenance.

Only six of the 23 documents reviewed include EdTech as a primary focus. Within these six, guidance is mostly general, not focusing on specific types of hardware or software use. A few guidance documents list examples of how radio or mobile programming has been used historically, but more as a case study rather than providing guidance on how to implement various modalities in EiE contexts.

Given these gaps, it is clear that further guidance relating to the design and implementation of EdTech in EiE is needed. In Section 6 below, we provide specific recommendations for what this new guidance should include and how it should be developed.

6. Recommendations

In this section, we use our review to suggest what future guidance on the design and implementation of EdTech in EiE should include and how this guidance could be developed.

6.1.1 Collaborate with local stakeholders for contextually relevant guidance

A notable finding is that the documents designed for use in either emergency contexts or LMICs are largely authored by organisations in high- or middle-income countries. Very few resources are accessible in multiple languages, and few are aligned with local standards or policies. This disconnect between the guidance development locations and implementation contexts could limit their relevance and applicability. The prevalence of generalised guidance and toolkits, intended to target multiple stakeholders and contexts, could be remedied by collaborating with local stakeholders to produce context- and stakeholder-specific sections within guidance documents to ensure relevance to specific groups and emergency contexts while still communicating broader good practices (the supplementary documents and case studies accompanying the INEE Minimum Standards are a good example).

6.1.2 Field-test guidance and provide opportunities for user feedback

While several resources have reportedly been developed based on user consultation, few contain evidence of being updated based on user feedback, and fewer still actively provide opportunities for such feedback. Providing readers with concrete ways of approaching the authors for feedback on the guidance can be useful in ensuring an iterative design and relevance to EiE. There is also a lack of publicly available evaluations and documentation of amendment processes for guidance documents (with the exception of INEE Minimum Standards).

6.1.3 Base guidance on a variety of evidence sources

The reviewed documents were based on different types of evidence, including user and specialist consultation, published literature, and organisational experience. Each of these has its strengths and weaknesses, so it is advisable to draw on a range of sources to ensure that future guidance is credible and reliable. Credibility, relevance, and uptake will also likely be strengthened by aligning future guidance with the relevant international laws and frameworks.

6.1.4 Prioritise equity and consider inclusive solutions for children with different disabilities

Equity and inclusivity are referenced in vague terms in nearly half of the documents reviewed, but themes under this broad category are not discussed in detail. Given how emergencies exacerbate existing inequities for girls, children with disabilities, and minority groups, a deeper and more nuanced exploration of these themes could be useful when developing guidance notes. For instance, guidelines could be provided on how children with different types of disabilities should be supported during crises (e.g., using assistive technologies), how to mitigate concerns about the digital divide for disadvantaged groups, and how to design and evaluate gender-sensitive interventions. An inclusive, child-centred approach that accounts for the diversity within marginalised groups and contextualised approaches to EdTech requires further coverage in future guidance documents.

6.1.5 Focus on costing, cost-effectiveness, scaling, and sustainability

A significant gap in most of the analysed guidance documents is the lack of guidance on costing, cost-effectiveness, value for money, and feasible implementation models at scale and over time. There is indeed limited evidence relating to the cost-effectiveness of different EdTech interventions, especially in emergency settings, suggesting that this is difficult to achieve. However, there is a small but growing body of evidence on the cost-effectiveness of EdTech in LMICs (↑Global Education Evidence Advisory Panel, 2023). Future guidance should lean into this emerging evidence. Relatedly, and given that EdTech can be an expensive investment, guidance on how to calculate value for money and total investment costs or how to advocate for additional funding to reach more vulnerable groups could be useful. Guidance relating to cost and cost-effectiveness is also crucial to understanding how the impact of EdTech in EiE can be successfully scaled—an aspect that is also currently missing from the guidance documents analysed.

6.1.6 Highlight the importance of an EdTech-specific context scan/needs assessment

Very few resources highlight the importance of conducting a landscape analysis to understand existing EdTech infrastructure before implementing EdTech solutions. In a conflict or protracted crisis setting, it is vital to gain as complete an understanding as possible of the existing infrastructure and capacity so that any implementation of EdTech solutions builds on existing resources; guidance on how to do this well is therefore crucial.

Additionally, specific guidance on how EdTech can be incorporated into existing education initiatives could be useful.

6.1.7 Provide logistical guidance on procurement and maintenance

While a few resources highlight the importance of assessing the EdTech implementation landscape, even fewer offer guidance relating to subsequent logistical considerations such as procurement and maintenance. The resources that do cover these subjects focus on the private sector and not on government or humanitarian sector procurement. This is an issue as government and humanitarian organisations are likely to have more stringent procurement rules and regulations compared to the private sector, where there is more room to experiment with or test hardware. Guidance relating to the maintenance of and technical support for ICTs is also lacking in all the analysed resources. Given that these activities can be especially challenging in unstable contexts, we strongly recommend that this is a key focus within future guidance.

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

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Annexes

Annex 1: Search strings

Guidance toolkit manual technology design use education emergencies

Guidance toolkit manual technology design use education

Guidance toolkit manual technology design use humanitarian settings

Guidance toolkit manual technology product design principles sustainability codesign cost

Annex 2: Summary of reviewed resources

Name	Aim	Language(s)	Summary
Checklist for Information and Communications Technologies (ICT) Interventions to Support Education in Crisis and Conflict Settings	To ensure that whenever technology is being used in emergency settings, it is applied in a conflict-sensitive manner.	English	The checklist was developed with input from different organisations, including the Education in Conflict and Crisis Network (ECCN), INEE, etc. It guides users to make appropriate decisions when using ICT in crisis and conflict settings. The checklist includes different phases such as ICT in conflict analysis, implementation and management, monitoring and evaluation, and close-out.
Conceptual Framework for Education in Emergencies Data	To build an idea of what EiE data looks like and guide work across different contexts and at different stages of crisis. It also offers guidelines to improve a fragmented data ecosystem by bringing together existing resources on EiE data and coordination, as well as what data is needed and when.	English, Spanish	Focusing on building resilient education systems through accurate and timely data, this document emphasises the need for better coordination across the 'humanitarian-development' divide so that education can be provided safely and equitably to all in both the short and long term.
Dimagi's Maturity Model	To help organisations scale mobile systems by identifying barriers and designing a clear roadmap for success.	English	This maturity focuses on six programme areas and five stages. The programme areas are programme design, data-driven management, technical support, training and implementation, scale, and sustainability and strategic alignment. The five stages are the proof of concept, stabilised and field-tested system, validated system for delivering value to frontline workers, packaged, repeatable system for scale-up, and ongoing, stable use of system providing value at scale.

Name	Aim	Language(s)	Summary
EdTech for Learning in Emergencies and Displaced Settings: A rigorous review and narrative synthesis	The guidance aims to bring to the forefront evidence-based recommendations on how to use various types of EdTech, considerations for equity, and gender implications of using EdTech, as well as its benefits and challenges.	English	The document provides a synthesis of evidence about using EdTech in EiE settings. The final guidance section puts together a set of guiding questions that an implementer of EdTech solutions must consider. These questions relate to the ethical and inclusive use of EdTech for learners and the communities they live in, as well as infrastructural needs and cost considerations.
EdTech Tulna	To define a set of expectations for the design of EdTech products.	English	The EdTech Tulna standards revolve around content accuracy, clarity, correctness, language comprehensibility, alignment to national standards, inclusivity in learner representation, and vernacular products.
Education in Emergencies Guidance Note	To begin bridging the gap between evidence and programming by pulling together in one place the most robust evidence available to date, and combining this with DFID adviser experience of programming in three different emergency contexts.	English	The guidance focuses on three emergency contexts: protracted conflict (intense violence, often armed, causing instability and displacement of people; which is frequently protracted), refugee crises (for populations displaced across international borders for prolonged periods), and natural disasters in non-conflict settings (floods, earthquakes, and epidemics resulting in breakdown of services and the internal displacement of people). The guidance encompasses six evidence briefs organised around the same six thematic areas: political settlements, accountability, cost-effective delivery, quality and learning, protection and inclusion, and data, monitoring, and evaluation.

Name	Aim	Language(s)	Summary
Education in Emergencies Toolkit — Save the Children	To communicate Save the Children's approach to EiE to development education specialists, and to orient new EiE staff to the principles and framework of Save the Children EiE responses, first as a conceptual framework for an EiE response plan, a proposal, a humanitarian response submission sheet, or as a guide for the evolution of an EiE response, and as a supporting resource for the accredited Save the Children Education in Emergency training.	English	The toolkit aims to provide intervention guidance by unpacking the various stages of a programme cycle after a crisis. The toolkit is structured around the Quality Learning Framework, with the first two modules focusing on child protection guidance.
Guidebook for Planning Education in Emergencies and Reconstruction	To help the International Institute for Educational Planning (IIEP) accomplish its mission of strengthening the capacities of UNESCO Member States in the fields of policymaking, educational planning, and administration. It helps the IIEP to coordinate existing knowledge and experience gained on this subject, and to promote research into new concepts and methods of educational planning likely to further economic and social development.	English	The document consists of a range of topics from the prevention of conflict and preparedness for disaster to curriculum and learning. It has four sections and 40 subsections. The sections are the general overview, access and inclusion, teachers and learners, curriculum and learning.

Name	Aim	Language(s)	Summary
Guidelines and Toolkit for a Diagnosis of the Education in Emergencies Data Ecosystem	To strengthen EiE data and to "generate a diagnosis of the EiE data ecosystem at a given point in time, mainly by evaluating the opportunities for integrating humanitarian EiE data systems with development and national institutional education information systems." (↑IIEP-UNESCO, 2023b, p. 4)	English	These guidelines suggest approaches and tools with which to identify EiE data needs, map existing relevant data sources and producers, assess the quality of those data sources, examine how data needs are currently being addressed, and identify opportunities to address persistent data gaps.
ICTs for Monitoring & Evaluation of Peacebuilding Programs	To understand how ICTs relate to monitoring and evaluation systems during peacebuilding programmes. The document explores technologies that are currently available or could be available for monitoring and evaluation systems.	English	The document seeks to answer key questions on how ICTs have been used in monitoring and evaluation, the considerations for using new technologies for monitoring and evaluation, resources for practitioners, and how ICTs can help overcome challenges in monitoring and evaluation as it pertains to peace-building processes.
INEE Minimum Standards	To help stakeholders prepare, respond, and recover during emergencies. The resource also aims to ensure that there is increased and safe access to learning during emergencies, and ensure that the actors who provide these services are held accountable.	English, Translations into Arabic, French, Portuguese, and Spanish are forthcoming	The INEE minimum standards are designed to be applicable to crisis response in many different situations, including emergencies caused by conflict, natural hazards such as those induced by climate change, and slow- and rapid-onset crises in both rural and urban environments. The resource contains 19 standards, each of which includes key actions and guidance notes.

Name	Aim	Language(s)	Summary
Institutionalizing Education in Emergencies Data Production and Use for Crisis-sensitive Educational Planning	To support efforts in institutionalising and systematising EiE data production and use, enabling ways of working with data to become a routine part of management and planning in education systems.	English	This document provides a model for institutionalisation of EiE data and emphasises how the process "requires multiple stages of emergence and stabilization across different components of the model" (↑IIEP-UNESCO, 2023c, p. 11). Additionally, the document dives deeper into the environment and practices that support this process including policies, leadership, culture, and core values, and resourcing.
ISTE Standards for Learning, Teaching and Leading with Technology	To ensure that using technology for learning creates high-impact, sustainable, scalable, and equitable learning experiences for all learners.	English, Spanish, Arabic, Mandarin, Czech, French, German, Portuguese, Russian, Turkish	The ISTE Standards can be adopted or adapted to address priorities as part of local, district-or statewide expectations, to guide system-wide planning, including school-improvement, technology and digital learning plans, to guide professional development planning or individual professional growth goals, to map curriculum and close gaps to ensure all students can grow these skills, to ensure lesson designs include the purposeful use of technology, as part of a learning management system, and in teacher preparation across the curriculum.
MHPSS and EiE Toolkit	To provide a suite of resources on educational and mental health and psychosocial support to increase understanding between the two sectors, encourage dialogue for planning and programming, and strengthen the quality of MHPSS and education responses in emergencies.	English, additional languages vary depending on the resources	The MHPSS and EiE Toolkit offers access to a range of documents and resources of relevance to those working in the fields of Education in Emergencies (EiE) and of Mental Health and Psychosocial Support (MHPSS).

Name	Aim	Language(s)	Summary
Non-Regulatory Guidance: Using Evidence to Strengthen Education Investments	To help state educational agencies, local educational agencies, institutions of higher education, schools, educators, department partner organisations and educational partners successfully choose and implement evidence-based project components that are designed to improve outcomes for learners.	English	This document focuses on guiding education stakeholders to make evidence-based decisions when making educational investments. First, it presents the steps required for effective use and building of evidence. Second, it suggests how the reader can evaluate the strength of evidence behind different project components.
On Call: Using Mobile Technologies to Measure Learning in Emergencies	To provide guidance on planning and delivering learning assessments through mobile technology.	English	This report provides guidance on how to plan and deliver learning assessments through mobile technology. It includes a 10-step guide that practitioners can use to help them to choose the most appropriate modality and tool for conducting their learning assessment.
Principles for Digital Development	To guide those working to promote sustainable and inclusive development in today's complex digital landscape. The principles aim to ensure that all people can benefit from digital initiatives and from the broader digital society, including those who do not yet have access to or use technology	Arabic, English, French, Kiswahili, Spanish and Thai	These principles were originally developed in 2014 and updated in 2024, and are endorsed by more than 300 organisations. The nine principles are: understand the existing ecosystem; share, reuse, and improve; design with people; design for inclusion; build for sustainability; establish people-first data practices; create open and transparent practices; anticipate and mitigate harms; and use evidence to improve outcomes.

Name	Aim	Language(s)	Summary
Principles of Digital Learning for Refugee-hosting Communities	To inform, at a strategic level, planning, implementation, evaluation, and improvement of IT-enabled education policies and programmes, to support the inclusion of refugees.	English	The document lists 13 principles: inclusion; local relevance; links to certification; accountability to affected populations; quality learning, monitoring and evaluation; design with the existing ecosystem; fill gaps and avoid overlap; re-use and improve; do no harm; equity focused; need for remedial learning; inclusion of socio emotional learning; and open approach.
Rapid Education and Risk Analysis Toolkit (RERA)	To guide USAID education staff on procuring and overseeing RERA implementation, and implementing partners throughout RERA implementation.	English, French, Spanish	The toolkit explains what a RERA is, why it is important to do these analyses, and where and when they may be most appropriate. It then takes the reader through the stages involved in planning, procuring, and implementing a RERA. The toolkit also provides a range of adaptable tools to help the reader with these processes and to produce the final RERA report.
Software Global Goods Valuation Framework	To help governments, donors, software development organisations to estimate both the development and the ongoing costs for development of software global goods.	English	The document begins with an explanation of what the framework is and why it is needed, and also what software global goods are and why they are needed. It then explains the logic behind the framework and how it can be used to estimate costs associated with the development of software global goods. It ends by drawing together lessons learnt from the development of the framework, and proposes next steps.

Name	Aim	Language(s)	Summary
Technology for Evaluation in Fragile and Conflict Affected States	To explore how technology can be used in evaluation in fragile contexts, especially for evaluators who are not as adept at using technology. Additionally, it points out the vast literature on using technology to collect data but identifies a gap regarding technology in evaluation beyond data collection.	English	The document offers a 5-step decision filter that can be used by evaluators to decide when and how to use technology when conducting an evaluation in a fragile or conflict-affected context. The five key questions are: 1) Does this evaluation meet the preconditions necessary for using any form of technology? 2) Is technology the right fit for the evaluation context? 3) Will using technology in the evaluation do harm? 4) What is the existing organisational technology? 5) Do the practicalities of the evaluation allow for using technology?
The Complete Guide to Mobile Data Collection	To guide users through the decisions needed to conduct successful mobile data collection.	English	The guidance advocates a contextualised approach, including analysing the implementation environment and identifying user stories and use cases. It also advises iterative testing, including pilots and usability testing. It also mentions technical decisions such as using the right devices for the app you are using, and guidance/training for those using the app (though this leans on learning styles theory, which is not well supported by evidence). There are also considerations made for sustainability of use, including user incentives and feedback mechanisms.
Total Cost of Ownership Model Toolkit	To help organisations estimate the total cost of adopting CommCare (Dimagi's own data collection tool) or other mobile technologies for their programs' Frontline Workers (FLW), for the next five years.	English	The guidance is in the form of a spreadsheet that users can fill in to calculate a total cost estimate for implementing a mobile solution (either Dimagi's CommCare or another solution) for the next five years. Direct costs such as equipment and hosting fees need to be included, as well as indirect costs such as training the relevant personnel.