

Rethinking Education in Emergencies: The Dialectic between Global Standards and Grassroots Innovation in Gaza

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How to cite this paper: Darwish, A. H., & Abuowda, M. F. (2026). Rethinking Education in Emergencies: The Dialectic between Global Standards and Grassroots Innovation in Gaza. *Creative Education*, 17, 1891-1911.

<https://doi.org/10.4236/ce.2026.1710107>

Received: August 23, 2026

Accepted: October 16, 2026

Published: October 19, 2026

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Abstract

This study critically examines dominant discourses on Education in Emergencies (EiE), arguing that bureaucratic, standardized approaches grounded in Western educational models often remain disconnected from the lived realities of communities experiencing protracted displacement and conflict as it may occur in Gaza. Rather than positioning Gaza as merely a site for technical educational recovery, the study reconceptualizes it as an epistemological laboratory in which new forms of case knowledge production and educational practice emerge under conditions of extreme adversity. Within this context, a pedagogy of resistance and resilience takes shape as local actors transform destruction, displacement, and material scarcity into alternative learning spaces that nurture collective agency and challenge conventional educational paradigms. The study addresses three central research questions: 1) To what extent do local, grassroots educational initiatives under siege and displacement challenge the dominance and applicability of international EiE frameworks? 2) How does resistance-based, indigenous pedagogy amidst infrastructure destruction help rebuild identity, restore human agency, and foster socio-emotional resilience? 3) How can international rights-based standards and local grassroots agency be synthesized into a contextualized hybrid framework for emergency education? The findings suggest that resilient educational practices cannot simply be transferred through standardized policy models; instead, they must be co-created through locally grounded knowledge, community participation, and context-specific innovation. The study concludes that the future of education in displacement settings depends on recognizing grassroots educational practices as legitimate sources of pedagogical knowledge and epistemological transformation.

Keywords

Education in Emergencies (EiE), Pedagogy of Resistance, Gaza, Grassroots Innovation, Epistemology, Resilience, Human Agency, Educational Decolonization

1. Introduction and Theoretical Orientation

1.1. Contextualizing the Emergency: Epistemicide and Ontological Insecurity

Forced displacement, structural blockades, and systematic military aggression in the Gaza Strip (2024-2026) have resulted in severe destruction of formal educational infrastructure. Beyond physical destruction, these conditions have induced a process of *epistemicide*¹ which defined as the systematic erasure of local knowledge systems, cultural memory, historical narrative, and institutional capacity required for intellectual transmission across generations (Phiri, 2024). Educational institutions are not merely physical shelters or sites of skill acquisition; they function as the vital centers of social capital, collective identity, and civic continuity. When these systems are systematically dismantled, the resulting loss extends far beyond quantifiable instructional days or standard curriculum milestones.

In conflict zones characterized by asymmetric warfare and protracted siege, educational disruption produces widespread ontological insecurity. Learners and educators experience profound disruptions to their physical safety, psychological stability, and social support structures. Under such extreme conditions, learning loss cannot be adequately diagnosed through technical assessments or standardized metrics. Instead, it must be conceptualized as an epistemological rupture deep disruption in how communities process experience, construct meaning, and transmit cultural values under continuous existential threat. Consequently, educational interventions that rely solely on conventional instructional continuity fail to address the core requirements of cognitive survival, human dignity, and socio-emotional healing.

1.2. Gaza as an Epistemological Laboratory

Rather than viewing Gaza exclusively through a humanitarian lens as a passive site of destruction and external aid dependency, this study reconceptualizes the region as an *epistemological laboratory*. Within this high-stress environment, conventional assumptions regarding institutional permanence, technological infrastructure, and centralized governance collapse. This collapse forces an immediate return to the fundamental elements of learning, teaching, and human development. In this zero-point environment, local actors—including veteran teachers,

¹**Epistemicide** is the destruction of knowledge systems, where *episteme* means knowledge. Epistemicide has been a part of colonialism, in which a colonizer destroys the existing knowledge systems of the colonized, to replace them with knowledge systems controlled by the colonizer (Phiri, 2024).

university scholars, parent committees, and youth volunteers—are forced to innovate rapidly out of existential necessity.

Stage	Process Phase	Operational Reality
Stage 1	Institutional Collapse	Systematic destruction of schools, loss of facilities, and disruption of state governance.
Stage 2	Zero-Point Knowledge	Re-evaluating pedagogical fundamentals; prioritizing cognitive survival over formal pacing.
Stage 3	Grassroots Innovation	Community tent initiatives, material recycling, and oral/indigenous transmission of knowledge.

Grassroots educational initiatives in Gaza demonstrate that pedagogical knowledge is not merely generated within elite academic institutions and distributed downward to crisis zones. On the contrary, high-stress displacement contexts generate crucial pedagogical insights. When formal schools are rendered unusable, educational activities shift into temporary displacement tents, damaged buildings, and informal open-air spaces. In these environments, community educators develop alternative methods to maintain foundational literacy, preserve cultural continuity, and provide emotional support. These practices demonstrate that learning can persist under severe material constraints through community agency, shared responsibility, and contextual adaptation.

1.3. Beyond the Tyranny of Normative Centrality

A primary theoretical focus of this study is the critical examination of *normative centrality* within the global Education in Emergencies (EiE) policy landscape. Mainstream EiE frameworks—frequently shaped by international agencies, multilateral donors, and Western educational institutions—tend to promote standardized operational guidelines, such as the Inter-Agency Network for Education in Emergencies (INEE) Minimum Standards. While these frameworks aim to establish baseline rights, protection mechanisms, and quality benchmarks, they often embody technocratic and top-down assumptions regarding educational governance (INEE, 2024).

Dimension	Top-Down Global EiE Frameworks	Bottom-Up Grassroots Realities
Governance	Technocratic & Standardized	Organic & Adaptive Pedagogy
Infrastructure Presumption	Assumes Digital & Safe Spaces	Operates Under Total Power Outage
Curricular Focus	Scope-and-Sequence Pacing	Focus on Cognitive Survival
Agency Model	External Aid Dependency	Endogenous Community Agency

Normative centrality operates on the assumption that crises are temporary deviations from an established institutional norm, and that the primary goal of

emergency response is to restore pre-crisis conditions through standardized intervention packages. This approach often treats complex political conflicts as technical emergencies solvable through standardized toolkits, pre-packaged accelerated curricula, and imported digital learning tools.

However, in contexts of protracted warfare and siege, this technocratic model reveals significant limitations:

- **De-contextualization:** Standardized guidelines assume minimal levels of physical safety, operational logistics, and institutional infrastructure that are absent in active war zones.
- **Depoliticization:** Technocratic frameworks frequently ignore the root political causes of educational destruction, framing systemic aggression merely as an operational barrier to be managed.
- **Epistemic Marginalization:** Externally designed interventions often position local educators and community members as passive recipients or field implementers of global policy, rather than key creators of pedagogical knowledge (Freire, 1970; Giroux, 2020).

This study argues for an epistemological shift from normative centralization toward contextually responsive hybridity. Rather than forcing complex, high-stress local realities to conform to rigid international templates, emergency educational policy must prioritize and integrate endogenous community practices.

2. Conceptual and Epistemological Foundations

2.1. Knowledge at the “Zero Point”: Deconstructing Institutional Assumptions

The concept of “knowledge at the zero point” describes the theoretical and operational state that emerges when the structural frameworks of formal schooling undergo complete physical and institutional breakdown. In standard educational theory, learning processes depend on established structural conditions: physical facilities, defined age-graded cohorts, national curricula, standardized assessment systems, and state-certified educators. When extreme warfare disrupts these structural conditions, educational practices are stripped of their institutional protections.

Formal Assumptions (Pre-Crisis)	Crisis Disruption (Zero Point Reality)
Physical Classrooms & Built Infrastructure	Destroyed Infrastructure & Open-Air Tent Spaces
Age-Graded Cohorts & Sequential Progression	Mixed-Age Groupings & Intergenerational Learning
Standard Printed Textbooks & Digital Portals	Recycled Materials, Sand Writing, & Orality
Institutional State Oversight & Bureaucracy	Grassroots Community Leadership & Mutual Aid

Operating at zero point requires a fundamental re-evaluation of educational priorities. Formal educational metrics, such as strict adherence to scope-and-sequence charts or standardized examination schedules, become secondary to immediate human needs. Teaching in this environment is redefined by three fundamental imperatives:

1) Cognitive Survival: Maintaining basic executive function, linguistic development, and critical thinking capabilities amid high environmental stress and continuous traumatic impact.

2) Psychosocial Stabilization: Utilizing structured group activities, storytelling, expressive arts, and collaborative play to build emotional resilience and alleviate stress.

3) Existential Continuity: Reaffirming collective identity, historical memory, native language, and human dignity against deliberate efforts to erase local culture and community structure.

Under these extreme conditions, knowledge production becomes organic, immediate, and survival oriented. The zero point strips away administrative procedures, allowing for dynamic experimentation where educational validity is determined by immediate contextual relevance and community utility rather than compliance with central directives.

2.2. Grassroots Innovation (*GI*) as a Self-Sustaining Pedagogy

When formal educational administration collapses, educational delivery is maintained through Grassroots Innovation (*GI*). Within the theoretical framework of this study, *GI* is defined as the organic, non-formal, and adaptive strategies developed by local communities to overcome severe material, structural, and logistical constraints. Grassroots innovation operates across three main dimensions:

1) Material Resourcefulness in Extreme Scarcity

In the absence of conventional instructional supplies—such as printed textbooks, notebooks, writing utensils, and digital devices—grassroots educators utilize alternative environmental resources. Displaced educators repurpose discarded packaging, food-aid containers, and fabric remnants into instructional aids. Sand surfaces replace traditional writing slates for early literacy instruction, while oral traditions, folk narratives, and collective memory are systematically integrated to support language development without reliance on physical texts.

2) Relational Authority and Intergenerational Solidarity

Grassroots innovation shifts pedagogical authority away from rigid hierarchical structures toward distributed community networks. In displacement camps, educational responsibility is shared among professional teachers, university students, parent committees, and community elders. Intergenerational learning networks emerge naturally, where older youth mentor younger children, and elders contribute oral histories and cultural knowledge. This relational model transforms the learning environment from a top-down instructional setting into a collaborative community sanctuary.

3) Endogenous Curriculum Adaptation

Rather than attempting to deliver an unmodified national curriculum designed for stable conditions, *GI* continuously adapts instructional content to address the immediate reality of displacement. Basic Arabic literacy and numeracy lessons are combined with practical survival knowledge, health awareness, stress manage-

ment, and civic cooperation. The curriculum becomes a dynamic instrument designed to help learners understand, navigate, and resist the adverse conditions surrounding them.

Dimension of Grassroots Innovation	Operational Strategy	Practical Pedagogical Outcome
Material Resourcefulness	Repurposing waste, cardboard, and natural elements (sand/wood)	Uninterrupted literacy/numeracy instruction despite total supply blockades.
Relational Authority	Distributed leadership among elders, youth mentors, and parents	Restoring community trust, intergenerational solidarity, and mutual protection.
Endogenous Adaptation	Integrating survival skills, health awareness, and cultural history	High student engagement and direct contextual relevance to immediate survival.

2.3. Pedagogy from Beneath the Rubble: Reconstructing Agency and Sumud

Education in settings of protracted conflict serves a purpose beyond basic skill transmission; it functions as an exercise of human agency and an expression of *Sumud* (steadfastness). In contemporary critical educational theory, pedagogy under conditions of oppression is recognized as an active practice of freedom and resistance (Freire, 1970; Giroux, 2020). When military action destroys formal school facilities, the act of reassembling children inside temporary tents or makeshift open-air spaces becomes an assertion of existential presence and civil continuity.

“Pedagogy from Beneath the Rubble” describes the deliberate act of building educational environments within sites of physical destruction. This approach re-frames conflict-affected populations from passive victims of humanitarian crisis into active agents of social and intellectual renewal. Conducting educational activities under active siege serves several critical functions:

- **Restoring Daily Routines:** Creating predictable schedules provides children with essential cognitive stability, reducing the psychological impact of ongoing trauma.
- **Countering Epistemic Erasure:** Sustaining instruction in national history, native language, and cultural heritage directly counters efforts to dismantle collective identity.
- **Rebuilding Civic Capacity:** Encouraging cooperative problem-solving and mutual aid within learning spaces builds social cohesion and community resilience.

2.4. Statement of the Pedagogical Operational Contradiction

A central theoretical problem identified by this study is the widening gap between the normative expectations embedded within international EiE standards and the operational realities of extreme conflict zones. International policy documents published by organizations such as UNESCO, UNICEF, and the INEE Minimum Standards steering committees frequently articulate ideal operational conditions:

“All individuals—children, youth, and adults—shall have access to safe, quality, and inclusive education opportunities, provided in secure learning environments that protect their physical and psychosocial well-being.” (Inter-Agency Network for Education in Emergencies, 2024)

While these statements establish important rights-based goals, their implementation becomes problematic when applied in environments experiencing total siege, continuous military bombardments, and complete infrastructure destruction. Standard guidelines often presume the existence of foundational operational conditions:

- Physical safety and protected neutral spaces.
- Unimpeded humanitarian access and steady supply pipelines for educational materials.
- Reliable access to electrical power, telecommunications, and digital connectivity.
- Functional state administrative structures capable of supervising implementation.

International Policy Presumptions	Realities of Active Siege & Conflict	Operational Consequence
Safe, Protected Learning Spaces	Target-Prone Displacement Camps & Tents	Disruption of physical protection protocols.
Continuous Supply Pipeline	Complete Border & Goods Blockade	Total absence of paper, pens, and printed books.
Digital & Blended Models	Total Electrical & Network Blackout	Complete failure of online platforms and remote learning.
Central State Supervision	Institutional Infrastructure Rupture	Bureaucratic paralysis and administrative disconnect.

When international institutions insist on applying standardized operational models without accounting for these disruptions, the result is a state of *pedagogical alienation*. Local educators are left with guidelines that are impossible to execute, while emergency funding and aid remain tied to compliance metrics designed for far more stable environments. This mismatch highlights the urgent need for a redesigned, context-responsive educational model that incorporates grassroots adaptations directly into its structural design.

3. Literature Review

3.1. The Evolution of Education in Emergencies (EiE): From Relief to Rights

Over the past three decades, Education in Emergencies (EiE) has evolved from a peripheral humanitarian concern into a distinct field anchored in international legal instruments like the Convention on the Rights of the Child (1989) and the Incheon Declaration (2015). The creation of the INEE in 2000 and its Minimum Standards (2004, revised 2010 and 2024) sought to institutionalize baseline benchmarks for access, protection, and quality. Despite this maturation and the shift

toward recognizing education as a fundamental right (Dryden-Peterson, 2017; UNESCO, 2020; UNESCO, 2024), the field has faced growing scrutiny regarding its top-down, technocratic models.

3.2. The Technocratic Turn and Its Critics

Mainstream Education in Emergencies (EiE) scholarship has increasingly been shaped by a “**technocratic turn**”, whereby complex political emergencies are reduced to technical problems that can be addressed through standardized toolkits, accelerated learning programs (ALPs), and digital platforms (Lewis et al., 2017; Dryden-Peterson, 2017; World Bank, 2023). Critics argue that such approaches can decontextualize education and marginalize local knowledge, lived experiences, and culturally grounded forms of learning (Freire, 1970; Giroux, 2020). In conflict-affected contexts, these concerns may extend to “**epistemicide**”, understood as the systematic erasure or destruction of local knowledge systems, educational institutions, and cultural memory. In the Palestinian context, the systematic destruction of educational spaces and institutions threatens not only access to education but also the transmission of knowledge, memory, and meaning across generations (Dader et al., 2024).

3.3. Refugee and Conflict Education: Between Globalization and Localism

A core tension in EiE literature lies between globalized frameworks and localized realities (Dryden-Peterson, 2017; Dryden-Peterson et al., 2022). In Gaza, this tension is compounded by the settler-colonial conflict and targeted educational destruction (Jebril, 2023). While studies highlight psycho-educational adaptations in displacement tents (Al-Hroub, 2026) and “pedagogical resistance” (Bader, 2026), educational resilience driven by local survival practices remains marginalized within mainstream global policy.

3.4. Grassroots Innovation and Pedagogical Resistance

Drawing on critical pedagogy (Freire, 1970; Giroux, 2020), recent scholarship theorizes grassroots innovation as a legitimate form of pedagogical knowledge. Studies highlight “pedagogical resistance” under siege (Bader, 2026), women’s roles in cultural protection (Al Abed, 2024), educational initiatives during displacement (Darwish & Abu Kumeel, 2025), and creative digital/local tool use (Abd Alrahim, 2026). These show that grassroots innovation operates through material resourcefulness, relational authority, and endogenous adaptation, though a gap remains in integrating them into formal EiE policy.

3.5. Trauma-Informed and Psychosocial Approaches

While literature emphasizes integrating psychosocial support for emotional safety (Al-Hroub, 2026), it largely focuses on external, clinical interventions. Less attention is given to how communities themselves generate trauma-mitigating envi-

ronments via informal, culturally rooted practices like storytelling, oral poetry, and intergenerational mentorship—a gap this study addresses in Gaza.

3.6. Synthesis and Research Gap

The literature reveals three main gaps:

- a) Epistemological gap: Mainstream frameworks remain anchored in technocratic, top-down assumptions that marginalize local agency (Freire, 1970; Giroux, 2020; Dryden-Peterson, 2017).
- b) Contextual gap: Existing Gaza studies focus on destruction or external interventions rather than the theoretical significance of grassroots innovation (Jebril, 2023; Al-Hroub, 2026).
- c) Theoretical gap: A lack of an integrated framework synthesizing international rights-based benchmarks with localized grassroots practices.

4. Research Questions

To address the core epistemological and practical challenges of education under siege, this study is guided by three central research questions:

- 1) *To what extent do locally developed, grassroots educational initiatives in contexts of forced displacement and siege challenge the epistemological dominance and operational applicability of externally imposed international Education in Emergencies (EiE) frameworks?*
- 2) *How do practices of resistance-based, indigenous pedagogy under conditions of systematic infrastructure destruction contribute to reconstructing identity, restoring human agency, and strengthening socio-emotional resilience among displaced learners and educators?*
- 3) *How can the dialectical relationship between international rights-based benchmarks and localized grassroots agency be synthesized into a contextualized hybrid framework to inform resilient emergency education interventions?*

Objectives of the Study: To comprehensively address the operational and epistemological gaps between standardized international frameworks and localized educational realities, this investigation pursues three interconnected academic objectives corresponding directly to the research questions:

- Critique Operational Presumptions.
- Document Grassroots Innovations
- Propose a Contextualized Hybrid Framework

Research Question	Analytical Focus	Core Epistemological Objective
RQ1: Framework Dialectic	Deconstruction of INEE, UNESCO, and UNICEF standards vs. field realities in active siege.	Evaluating operational gaps and validating grassroots innovation (<i>G/</i>) as formal knowledge.
RQ2: Agency & Resilience	Ethnographic analysis of tent schools, sand writing, and oral pedagogy in displacement camps.	Examining identity preservation, trauma mitigation, and cognitive survival at the zero point.
RQ3: Model Synthesis	Theoretical and empirical integration of international benchmarks with local grassroots practices.	Formulating a context-responsive hybrid model for resilient Education in Emergencies (EiE).

5. Research Methodology and Synthesis Philosophy

5.1. Qualitative Ethnographic and Deconstructive Approach

To investigate the complex interaction between global educational standards and local grassroots adaptations, this study employs a critical qualitative research methodology grounded in field ethnography and structural document analysis. Given the extreme volatility and ongoing nature of the crisis in Gaza, traditional quantitative survey methods are insufficient for capturing the complex social, psychological, and pedagogical dynamics present in displacement settings.

The methodology combines two primary research approaches:

a) Rapid ethnographic assessment: It is a critical qualitative rapid ethnography with direct observation and narrative inquiry conducted within temporary displacement camps and community learning tents across central and southern Gaza (some dangerous part in the north of Gaza Strip was not covered, due to dangerous situation. It is limited area). This approach prioritizes the lived experiences, adaptive strategies, and voices of local educators, community volunteers, and displaced families.

b) Deconstructive Policy Analysis: Critical evaluation of official policy documents, emergency response frameworks, and strategic guidance published by major international educational bodies between 2024 and 2026.

5.2. Field Sample, Focus Groups, and Data Collection Instruments

Data collection was carried out over an extended period under complex field conditions. The study utilized three main data collection instruments:

a) Deep Focus Group Discussions ($N = 73$ Participants across 12 Groups)

The field sample comprised 73 participants (including teachers and relevant educational stakeholders) selected via **convenience sampling**—coupled with purposeful criteria—from relatively lower-risk areas to ensure the safety of both field researchers and participants. Due to severe security constraints and operational risks, it was not feasible to cover high-risk zones, such as northern Gaza (e.g., Jabalia) or areas adjacent to the Israeli military’s “Yellow Line”. Consequently, the sample was non-random and non-probabilistic, restricted to safe accessible locations where field data collection could be conducted safely.

Twelve focus group discussions were conducted in informal displacement learning sites (Tent Schools) situated in Gaza, Deir al-Balah, Khan Younis, and part of the Rafah border regions (Mawasy). The participant sample was composed of:

- Former public and UNRWA elementary school teachers ($n = 22$). They are currently volunteers in education initiatives. There are also 17 teachers from governmental schools.
- Volunteer university students and recent graduates ($n = 21$).
- Community organizers and parent committee representatives ($n = 13$). They were working in education before war.

Focus groups were structured around thematic prompts examining specific in-

structional challenges, material adaptations, knowledge loss mitigation, and critical evaluations of external aid initiatives.

Focus group sessions were conducted in-person at community learning centers across various areas in the Gaza Strip between January 2025 and February 2026. All discussions were audio-recorded with the participants' informed consent, transcribed verbatim in Arabic, and selected excerpts were subsequently translated into English for analysis and reporting purposes.

b) Expert Narrative Interviews ($N=6$)

In-depth semi-structured interviews were conducted with key educational stakeholders, including four local university faculty members in education studies and two chairs of emergency curriculum committees operating within displaced administrative bodies (UNICEF, 2024). These interviews provided high-level insights into structural policy challenges, systemic learning loss, and institutional adaptation.

All focus group discussions and individual interviews were audio-recorded with the participants' explicit prior knowledge and informed consent. Measures were strictly implemented to ensure that participation posed no risks, threats, or vulnerabilities to the participants' personal or professional safety².

c) Structural Document Corpus Analysis

A systematic analysis was conducted on fourteen (14) key policy documents, emergency appeals, and operational manuals issued between 2024 and 2026.

5.3. Document Corpus Analysis

A systematic analysis was conducted on a targeted corpus of key policy documents, institutional frameworks, and operational manuals published between 2024 and 2025 by international humanitarian agencies and national education authorities. This analysis provided a clear framework to compare the focus group and interview findings with international standards and official directives (Triangulation). Key policy documents sampled include:

a) INEE (2024): *INEE Minimum Standards for Education: Preparedness, Response, Recovery* (2024 Edition).

b) UNESCO (2024): *Emergency Response Framework for Education in Crisis Settings*.

c) UNICEF (2024): *State of Palestine Humanitarian Situation Reports & Accelerated Learning Program (ALP) Guidelines*.

d) World Bank (2023): *Education Recovery and Learning Loss Assessment in*

²The researcher took all necessary measures to protect the participants in this study. Participants were clearly informed of the nature and objectives of the research, and their voluntary consent was obtained before participation, with emphasis on their right to withdraw at any time without any consequences. Participants were also assured that the opinions and information they provide will not entail any risks of any kind, whether to them personally, their jobs, or their relationships, and that their opinions will be used for scientific research purposes only. Data confidentiality and participant anonymity were maintained, with information stored in a secure place accessible only to the researcher. Accordingly, there are no anticipated risks to participants, and the procedures were presented to the competent authority (MoEd) to obtain approval or exemption in accordance with the approved ethical guidelines.

Conflict-Affected Contexts. Learning recovery to acceleration: A global update on country efforts to improve learning and reduce inequalities.

e) **Ministry of Education and Higher Education, Palestine (2025): Strategic Emergency Response and Education Recovery Plan.**

Data Instrument	Sample Composition	Primary Analytical Focus
Focus Group Discussions	N = 73 (32 Teachers, 21 Volunteers, 20 Parents)	Material adaptations, daily instruction, trauma response, tent school dynamics.
Expert Interviews	N = 6 (4 University Faculty, 2 Committee Chairs)	Policy bottlenecks, structural learning loss, long-term institutional adaptation.
Document Corpus Analysis	14 Strategic Reports & Policy Manuals (2024-2026)	Deconstruction of global EiE frameworks (INEE, UNESCO, UNICEF, World Bank).

5.4. Synthesis Philosophy: The Gestalt Analytical Paradigm

Data analysis was conducted using the *Gestalt Analytical Paradigm*. Rather than isolating data into fragmented, independent variables, the Gestalt approach analyzes educational ecosystems as interconnected wholes. Within this analytical framework, pedagogical effectiveness cannot be evaluated separately from the political, material, structural, and psychological conditions surrounding the learning environment.

The analysis followed a three-stage thematic coding procedure:

- **Open Coding:** Initial textual analysis to identify primary contextual challenges, material improvisations, and operational failures.
- **Axial Coding:** Grouping open codes into broader theoretical categories, focusing on the dialectical tension between international policy assumptions and local field adaptations.
- **Selective Gestalt Synthesis:** Synthesizing category interactions to develop a comprehensive theoretical model that explains how grassroots innovation mitigates trauma and structural blockade.

5.5. Limitations

Despite its importance, this study has several limitations that must be stated frankly. First, due to security risks, data collection was restricted to relatively safer areas in central and southern Gaza (Deir al-Balah, Khan Younis, and Mawasy), and did not include northern Gaza or areas near the Yellow Line. This means the testimonies may show the reality as less severe than it is in the most affected areas. Also, the sample was not randomly selected, so the findings cannot be statistically generalized.

Second, the study was conducted within a single time period and did not track developments over time. It also relied on what participants reported themselves, which is subject to forgetting or inaccurate estimation. No standardized psychological tests were used. Third, the situation in Gaza changes rapidly, and some data may become outdated. Also, the specificity of the Gaza context limits the

possibility of directly transferring the findings to other displacement settings. Fourth, the concept of the “zero point” may be somewhat exaggerated, since no society begins from absolute zero. Also, relying on Freire (1970) and Giroux (2020) alone may not be sufficient to understand the specificity of the settler-colonial context in Palestine.

Fifth, both researchers were present in Gaza and witnessed the events firsthand and attempted to convey the picture in a professionally and academically acceptable manner. This direct field proximity gave the study depth and immediate understanding, but at the same time it may make the researchers more affected by the scenes they lived through—something they tried to handle with awareness and continuous mutual review. Nevertheless, it cannot be denied that personal experience may influence—even indirectly—the way data are collected or interpreted.

Despite these limitations, the study offers a realistic and grounded picture of the context and opens the door for future research that follows the topic over time, covers broader locations, and gives children a direct voice.

6. Results and Critical Deconstruction

To derive the four primary themes of grassroots resilience, the study employed a three-stage thematic coding procedure based on the Gestalt Analytical Paradigm. The process began with **open coding**, during which the first and second authors conducted initial textual analysis of the focus-group transcripts, expert narrative interviews, and document corpus to identify discrete concepts such as material improvisations, operational failures, and contextual challenges.

In the second stage, axial coding, the research team collaboratively grouped these open codes into broader theoretical categories, critically analyzing the dialectical tensions between global policy assumptions (e.g., INEE, 2024) and local field adaptations. Finally, through selective Gestalt synthesis, the team synthesized category interactions to construct a comprehensive theoretical model explaining how grassroots innovation mitigates trauma and structural blockades.

Throughout this analytical process, data from the policy document corpus (N = 14 key policy frameworks) provided a structural benchmark to critique and challenge the focus-group interpretations, revealing critical operational mismatches in top-down guidelines. Concurrently, expert narrative interviews (N = 6) with education faculty and curriculum chairs were triangulated with the focus-group evidence (N = 73 participants across 12 groups) to validate field observations, resolve interpretive discrepancies, and confirm how localized practices counter epistemic erasure at the zero point of knowledge.

6.1. Structural Critique of International Frameworks

The systematic analysis of global EiE frameworks alongside field observations reveals significant structural mismatches. International policy documents consistently endorse standardized strategies for educational recovery that prove unworkable when applied within severe, active conflict zones.

International Framework/Scholar	Proposed Vision for Mitigating Loss	Structural Gap in the Catastrophic Context of Gaza
UNESCO (2021)	Intensive accelerated learning modules with heavy reliance on flexible, cloud-based digital platforms and remote learning portals.	Presumes continuous electrical power, functioning cellular towers, and internet access, which are entirely non-existent due to complete infrastructure destruction.
UNICEF (2024)	Standardized Accelerated Learning Programs (ALPs) following fixed, sequential timelines and pre-packaged paper instructional kits.	Requires open supply routes for shipping stationery and assumes population stability; fails under continuous forced displacement and total border blockades.
Inter-Agency Network for Education in Emergencies (2024)	Establishment of secure, protected Child-Friendly Spaces (CFSs) and formal physical safety protocols.	Presumes relative physical neutrality and safe zones; invalid when designated displacement shelters and learning tents face direct military strikes.
World Bank (2023)	Economic efficiency models focusing on “condensed curricular dosages,” rapid remediation, and economic skill metrics.	Reduces education to a narrow technical-economic metric, ignoring compounded psychological trauma, cognitive fatigue, and loss of life.

6.2. The INEE/UNESCO Mismatch under Conditions of “Eduicide”

The term *educide*—the deliberate, systematic destruction of an entire educational system, including its physical infrastructure, administrative institutions, academic leaders, and cultural heritage—describes conditions that fall outside the standard operational assumptions of global frameworks. The INEE Minimum Standards and UNESCO emergency guidelines are designed primarily for natural disasters, post-conflict recovery, or localized, low-intensity crises. When applied to conditions of total siege and educide, critical failure points emerge across four main operational dimensions:

Failure Dimension	Policy Assumption	Crisis Field Reality
1. Safety Paradigm	Designation of protected physical spaces for children	Learning tents and shelters face continuous operational exposure.
2. Digital Illusion	Remote e-learning portals & digital platforms	Long-term power grid collapse and telecommunication blackouts.
3. Supply Dependency	Imported paper, notebooks, and textbook shipments	Border closures block physical materials entirely.
4. Linear Recovery	“Build Back Better” post-crisis reconstruction	Absence of a stable post-crisis phase under continuous active conflict.

6.3. Focus Group Insights: Four Dimensions of Grassroots Resilience

Qualitative thematic analysis of the twelve focus group discussions ($N = 73$) revealed four key adaptive strategies developed by local communities to sustain educational continuity:

a) Low-Tech Material Adaptation (Bypassing Digital Presumptions)

Focus group participants described methods for transforming everyday mate-

rials into instructional tools. Teachers converted food-aid cardboard boxes into writing boards, constructed instructional flashcards from discarded packaging, and used charcoal or wooden sticks as writing utensils. Early reading instruction relied heavily on structured oral repetition, group chanting, and traditional storytelling, removing the requirement for printed books. As one veteran elementary teacher stated during a focus group in Deir al-Balah:

“We stopped waiting for international aid trucks to bring us notebooks and pencils months ago. If we waited for paper, two whole generations would lose the ability to read and write. Instead, we teach Arabic phonics using the sand beneath our feet. The children trace the letter forms in the dust, speak the sounds together, and erase them with their hands. It costs nothing, it requires no electricity, and no blockade can stop it.” (Focus Group 4, Participant 3)

b) Fluid Pedagogy and Mobile Learning Units

To adapt to continuous displacement orders, local educators developed flexible instructional models termed *Fluid Pedagogy*. Learning spaces were designed to be assembled, packed, transported, and re-established within hours. Educational teams formed mobile units equipped with basic instructional kits that could be carried on foot during forced population movements. This flexible structure ensured that learning activities resumed quickly after displacement, providing children with continuous routine amid chaos which created by occupation.

c) Prioritizing Cognitive Survival Over Curriculum Pacing

Field educators rejected externally imposed timelines that prioritized complete curriculum coverage. Recognizing the widespread impact of continuous trauma, educators restructured instruction around cognitive survival and foundational competencies. Instructional periods were shortened to 20-minute modules focused on core Arabic literacy and functional numeracy. Lessons were combined with physical movement, drama, and expressive arts to reduce stress and improve attention retention.

6.4. Establishing Emotional Sanctuaries

In the absence of physically safe facilities, community educators focused on creating *relational safety*. Learning Tents functioned as emotional sanctuaries where children could process trauma through supportive social interactions. Teachers integrated psychosocial support directly into daily routines, replacing formal grading with narrative feedback, peer support, and collective encouragement. This relational approach transformed learning spaces into community hubs that strengthened social cohesion and emotional resilience.

Dimension	Conventional EiE Paradigm	Grassroots Adaptive Reality
Material Adaptation	High-Tech/Digital Portals	Low-Tech/Sand Writing & Recycled Packaging
Mobility Framework	Fixed Brick-and-Mortar Facilities	Fluid/Portable Tent Units & Mobile Kits
Curricular Focus	Rigid Credit Pacing & Scope	Cognitive Survival & Functional Literacy
Social Architecture	Bureaucratic Rules & Grading	Emotional Sanctuary & Relational Safety

7. Socio-Pedagogical Analysis and Theoretical Modeling

7.1. Pedagogy of Nature and Local Indigenization

The data gathered from field observations and expert interviews indicate that successful emergency education in Gaza relies heavily on process-driven local adaptations. When imported resources and formal facilities are unavailable, teaching practices naturally adapt to use local cultural and environmental resources. This adaptation process—termed *pedagogical indigenization*—shifts the educational foundation from pre-packaged external models toward community-driven practices.

Indigenization Dimension	Primary Mechanism	Operational & Cultural Outcome
Environmental Resource Integration	Utilization of sand, stones, and plant remnants	Uninterrupted literacy/numeracy instruction bypassing total supply blockades.
Cultural Heritage Integration	Incorporation of oral folklore, poetry, and storytelling	Preservation of national identity, linguistic continuity, and emotional stabilization.

Indigenization operates through two main socio-pedagogical processes:

a) Environmental Resource Integration

Deprived of standard paper textbooks and digital displays, educators turn to the immediate physical environment. Instructors utilize environmental features—such as sand, stones, and plant materials—to teach foundational concepts in geometry, arithmetic, and science. For example, foundational language lessons incorporate environmental observations, turning the immediate landscape into an active learning context. This practice reduces reliance on external supplies while fostering environmental awareness and critical observation skills.

b) Cultural Heritage and Intergenerational Knowledge

Grassroots education draws upon traditional oral folklore, poetry, and historical narratives as core instructional resources. Displaced mothers, grandmothers, and community elders actively participate in teaching activities, sharing oral literature, cultural history, and moral narratives. This integration serves two distinct purposes:

- **Linguistic Continuity:** Oral storytelling and traditional poetry support vocabulary acquisition, listening comprehension, and expressive language skills without requiring physical textbooks.
- **Identity Preservation:** Transmitting cultural heritage reinforces identity, historical awareness, and community solidarity, mitigating the psychological effects of displacement.

Field data show that these locally adapted, culturally grounded methods achieve higher student engagement and emotional stabilization than imported accelerated learning packages. By anchoring instruction in familiar cultural traditions, grassroots educators convert learning into a meaningful process of self-affirmation and collective endurance (Al Abed, 2024; Bader, 2026; Darwish & Abu Kumeel, 2025).

7.2. Qualitative Mathematical Modeling of the Hybrid Framework

To illustrate the operational dynamics of emergency educational ecosystems, this

study proposes a qualitative interactive formula. This model represents the functional relationships between global standards, local grassroots innovation, and environmental constraints:

$$PE = \frac{MS \times GI}{TL}$$

where:

- **PE = Pedagogy Effectiveness:** The overall operational impact and sustainability of the remedial educational ecosystem in a crisis context.
- **MS = International Minimum Standards:** The macro-level academic benchmarks, child protection guidelines, and rights-based policy frameworks established by international organizations.
- **GI = Grassroots Innovation:** The contextual adaptability, community agency, material resourcefulness, and local pedagogical innovations generated by affected populations.
- **TL = Trauma Logistic Load:** The compounded operational friction caused by ongoing military action, physical displacement, psychological trauma, total blockade, and infrastructure failure.

Operational Condition	Factor Configuration	Predicted Educational Outcome (PE)
Standard Technocratic Model	High TL + Rigid MS + Zero GI	$PE \rightarrow 0$ (Systemic Operational Collapse)
Resilient Hybrid Model	High TL + Adapted MS + High GI	PE Sustained (Resilient Community Continuity)

Theoretical Interpretation of the Model Dynamics:

1) The Risk of Standard Implementation: When TL (Trauma Logistic Load) increases significantly—as observed under conditions of active siege and displacement—relying solely on fixed MS (Minimum Standards) without local adaptation causes PE (Pedagogy Effectiveness) to drop toward zero. Standard guidelines become unworkable when their required structural conditions are absent.

2) Grassroots Innovation as a Multiplier: GI functions as a crucial multiplying factor in the numerator. Higher levels of local innovation, community involvement, and pedagogical flexibility help sustain PE , offsetting the negative impacts of an increasing TL .

3) Implications for Policy: To maximize educational effectiveness (PE) in high-stress crisis settings, international organizations must avoid enforcing rigid, unadapted standards (MS). Instead, donor agencies and policymakers should direct resources toward maximizing local innovation (GI), providing local communities with the autonomy required to adapt educational responses to immediate conditions.

8. Strategic Recommendations and Conclusion

8.1. Policy and Operational Roadmap

Based on empirical findings, structural document analysis, and qualitative mod-

eling, this study outlines a comprehensive roadmap for international agencies, non-governmental organizations, and local educational authorities. Moving away from rigid, technocratic frameworks requires structural changes at both macro-policy and micro-practice levels:

a) Macro-Level Policy Innovations

- **Legitimizing Alternative Pedagogies:** International donors and education ministries must grant formal accreditation to non-formal learning initiatives that utilize environmental media, recycled materials, and oral instruction. Literacy achieved through low-tech grassroots initiatives should be formally recognized within national student tracking systems.
- **Institutionalizing Micro-Learning:** National curricula must be restructured into flexible, 20-minute (or little more) competency-based micro-modules. These modules prioritize core language skills and functional numeracy, allowing learning continuity to persist even under frequent, sudden displacements or new crises.
- **Pedagogical Sovereignty for Field Educators:** Administrative frameworks should shift decision-making authority down to local educators operating in displacement camps. Field teachers require operational autonomy to adapt scope, pacing, and instructional methods to meet the immediate cognitive and emotional needs of their students. These recommendations can be adopted at least during the current and forthcoming crisis periods, until the educational system regains its strength and capacity once again—a process that requires years.

b) Micro-Level Practical Interventions

- **Psycho-Linguistic Emergency Kits:** Educational interventions should combine foundational literacy instruction in both Arabic and English with structured psychological support. Integrating story retelling, narrative drama, and expressive arts allows children to process ongoing trauma while simultaneously developing core bilingual linguistic capabilities (Abd Alrahim, 2026).
- **Community-Based Mentorship:** Education in emergencies plays a vital role in preserving human dignity and sustaining life by providing safe and supportive learning spaces. Quality education offers learners physical, psychosocial, and cognitive protection, particularly when they are surrounded by supportive peers, educators, and community members within a secure learning environment. However, in Gaza, ongoing conflict, displacement, and insecurity often undermine the availability of such safe environments, limiting the protective and developmental functions that education is expected to provide.

Policy Level	Strategic Focus Area	Key Operational Outcome
Macro-Level Policy	Alternative Accreditation & Micro-Modules	Formal recognition of non-formal learning and modular literacy credits.
Macro-Level Policy	Pedagogical Sovereignty	Empowering field educators with autonomous decision-making authority.

Continued

Micro-Level Practice	Psycho-Linguistic Integration	Combining literacy instruction with narrative trauma-processing tools.
Micro-Level Practice	Community Mentorship Networks	Formally mobilizing elders, youth mentors, and parents into teaching teams.

8.2. Conclusion

Top-down, technocratic approaches to Education in Emergencies are inherently fragile when disconnected from the lived realities of communities experiencing active conflict and siege. Standard international policy models that presume physical safety, functioning infrastructure, and reliable digital access fail under conditions of educide and total blockades.

The Gaza experience demonstrates that resilient educational practice cannot be imported through standardized global templates. Instead, effective learning ecosystems are co-created through the radical adaptability of local educators, community volunteers, and families who reconstruct learning spaces at the zero point of knowledge. By transforming destruction, displacement, and material scarcity into alternative pedagogical opportunities, grassroots actors demonstrate that education under extreme adversity is an essential act of human dignity, agency, and cognitive survival.

Future global policy in emergency education must abandon top-down standardization. Recognizing grassroots educational innovations as legitimate sources of pedagogical knowledge is not merely an operational necessity; it is a critical step toward decolonizing global education and ensuring that marginalized populations remain the primary authors of their own educational continuity.

Funding

The field works in the current research are funded by PALM Strategic Initiative Center.

Author Contributions

Ata Darwish: Conceptualization, methodology, statistical analysis, data interpretation, writing—original draft, and manuscript editing. Mohama Abouoda: Field-work, data collection (interviews with teachers and experts), statistical analysis, data interpretation, and writing—review & editing. All authors have read and approved the final manuscript.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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