

ERASING THE FUTURE: SYSTEMATIC SCHOOL DESTRUCTION IN GAZA AS EPISTEMIC GENOCIDE (2023–2025)

Anonymous authors

Paper under double-blind review

ABSTRACT

This study examines the systematic destruction of educational infrastructure in the Gaza Strip from October 2023 to July 2025 through analysis of the UNOSAT Education Cluster Dataset documenting 564 school buildings. Employing a mixed-methods concurrent-triangulation design, we integrate quantitative spatial-statistical analysis with qualitative thematic analysis of humanitarian assessment narratives. Results demonstrate that 97% of schools sustained damage, with 76.6% experiencing direct hits, disproportionately affecting densely populated educational zones and institutions serving large student populations. Statistical analysis reveals strong correlations between direct hits and governorate density ($r=0.71$) as well as UNRWA ownership ($r=0.58$), suggesting targeted patterns of destruction. Qualitative analysis identifies emergent themes including erasure, shelter-breach, trauma-of-learning, and loss-of-trust from witness testimonies, framing the destruction as epistemic injustice that systematically undermines intergenerational knowledge transmission. The near-total incapacitation of Gaza’s educational system represents not merely collateral damage but systematic erasure of a population’s capacity for knowledge reproduction, consistent with historical patterns of genocidal violence. Methodological triangulation, statistical validation, and institutional documentation ensure analytic credibility. This research provides a methodological template for measuring harm to education in conflict zones and underscores the imperative to integrate Education in Emergencies frameworks with Genocide Prevention Indicators.

1 INTRODUCTION

Since October 2023, the Gaza Strip has experienced systematic destruction of educational infrastructure at an unprecedented scale. Analysis of the UNOSAT Education Cluster Dataset reveals that 97% of 564 school buildings sustained damage, with 76.6% experiencing direct hits UNITAR–UNOSAT (2025). This destruction affects institutions administered by UNRWA and the Palestinian Ministry of Education that served approximately 625,000 students before the conflict. The targeting of educational facilities represents not only physical devastation but also an assault on the epistemic foundations of Palestinian society, undermining intergenerational knowledge transmission and collective memory.

This research situates school destruction within frameworks of epistemic injustice Fricker (2007) and moral witnessing Margalit (2002). Epistemic injustice occurs when communities are systematically denied their status as knowers, while moral witnessing involves preserving truth in the face of systematic erasure. The transformation of educational spaces into sites of violence constitutes a dual assault: it physically destroys learning environments and symbolically undermines Palestinian capacity for knowledge reproduction. This aligns with historical patterns where educational infrastructure targeting serves as a precursor to long-term societal fragmentation Justino et al. (2011).

The issue demonstrates complexity across multiple dimensions. Historically, education in Gaza has functioned as a stabilizing institution for refugee populations since 1948. Socially, schools serve as community hubs for psychosocial support and cultural preservation. Institutionally, the integration of UNRWA, governmental, and private educational sectors creates layered governance challenges. Geopolitically, the principle of civilian distinction becomes blurred when schools double as shelters

for internally displaced persons. International frameworks for protecting education in conflict zones have proven insufficient to prevent systematic destruction, as evidenced by the correlation between UNRWA ownership and direct hits ($r=0.58$) UNITAR–UNOSAT (2025).

This study employs a mixed-methods concurrent-triangulation design Creswell & Creswell (2018) to analyze both quantitative patterns of destruction and qualitative narratives of experience. Quantitative analysis examines damage distribution, spatial correlations, and reconstruction scenarios across 564 school buildings. Qualitative thematic analysis Flick (2014) interprets 47 humanitarian assessment narratives to identify emergent themes of epistemic erasure. Methodological triangulation ensures analytic credibility through statistical validation and narrative corroboration, addressing the statistical coherence of the dataset and recurring narrative motifs that authenticate lived experience.

The research addresses three central questions derived from the theoretical framework:

1. How is credibility of humanitarian assessment maintained amid systematic school destruction?
2. What spatial and institutional patterns reveal intent to erase educational continuity?
3. How does damage to schools reconfigure epistemic trust within occupied territories?

This paper makes several contributions to the study of education in conflict zones:

- A replicable mixed-methods template for analyzing educational destruction
- Quantitative evidence of targeting patterns through correlation analysis
- Qualitative documentation of lived experiences through thematic analysis
- Integration of epistemic justice frameworks with humanitarian damage assessment
- Methodological innovation in combining satellite verification with moral witnessing theory

The paper proceeds as follows: Section 2 reviews literature on education in conflict zones and epistemic justice. Section 3 contextualizes Gaza’s educational system and international protection frameworks. Section 4 details the mixed-methods methodology. Section 5 presents quantitative findings and qualitative themes. Section 6 interprets results through theoretical lenses. Section 7 outlines implications for education in emergencies and genocide prevention. The research underscores the urgent need to integrate Education in Emergencies frameworks with Genocide Prevention Indicators to address systematic educational destruction in conflict zones.

2 RELATED WORK

The protection of educational infrastructure in conflict zones has gained increasing attention through international frameworks such as the Safe Schools Declaration, which establishes guidelines for preventing military use of schools and minimizing disruption to education during armed conflict Zwanenburg (2021). The Global Coalition to Protect Education from Attack (GCPEA) has documented systematic patterns of school targeting across multiple conflict zones Kapit (2023); ?, establishing education under attack as a distinct category of humanitarian concern. In the specific context of Gaza, research has examined the application of International Humanitarian Law to protect educational facilities during armed conflict Alburai (2023).

Existing quantitative research on education in conflict zones UNESCO (2019); ICRC (2021); Mahgoub et al. (2024); Iriqat et al. (2025) emphasizes reconstruction counts and damage typologies but seldom integrates spatial correlation analysis with sociomoral implications. These studies document physical destruction patterns but often lack theoretical frameworks for interpreting the epistemic dimensions of educational targeting. The systematic documentation of school damage through satellite imagery represents a methodological advancement in conflict monitoring, yet existing approaches rarely connect quantitative findings with qualitative testimonies of lived experience.

Qualitative traditions in conflict studies explore narrative and media-ethnographic dimensions of violence Zelizer (2021); Allan (2017); Pantti (2022). These works examine the ethics of witnessing and documentation in crisis settings, yet they rarely quantify physical infrastructure loss or employ mixed-methods approaches. The gap between quantitative damage assessment and qualitative

narrative analysis represents a significant limitation in current scholarship on education in conflict zones.

This research bridges humanitarian satellite assessment with interpretive ethics through a mixed-methods concurrent-triangulation design. By integrating spatial-statistical analysis of the UNOSAT Education Cluster Dataset with thematic analysis of humanitarian assessment narratives, we address the material and epistemic dimensions of educational destruction simultaneously. This approach provides both empirical documentation of targeting patterns and interpretive understanding of their moral significance within the Palestinian context.

The theoretical frameworks of epistemic injustice Fricker (2007) and moral witnessing Margalit (2002) provide conceptual foundations for analyzing the systematic destruction of educational infrastructure as both material and epistemic violence. These frameworks enable interpretation of school targeting not merely as collateral damage but as systematic erasure of Palestinian capacity for knowledge reproduction and intergenerational memory transmission. This theoretical orientation distinguishes our approach from previous work that lacks robust conceptual frameworks for understanding the sociomoral dimensions of educational destruction.

3 BACKGROUND

The educational infrastructure in Gaza has developed within a context of prolonged displacement and occupation, functioning as a cornerstone of Palestinian societal resilience. Since 1948, schools administered by UNRWA and the Palestinian Ministry of Education have provided education to refugee populations across multiple generations. These institutions operate not only as sites of learning but as repositories of collective memory and cultural continuity. The systematic targeting of these spaces since October 2023 represents an escalation in the assault on Palestinian epistemic agency, with 97% of 564 school buildings sustaining damage according to UNOSAT documentation UNITAR–UNOSAT (2025) and spatial analysis confirming widespread damage to educational infrastructure from the conflict's outset Asi et al. (2024). This destruction occurs within a landscape where education has historically offered pathways to dignity and self-determination for communities facing systemic marginalization.

The theoretical foundations of this research draw upon frameworks of epistemic injustice Fricker (2007) and moral witnessing Margalit (2002). Epistemic injustice addresses how communities are systematically denied their capacity as knowers through structural violence. In the Gaza context, the destruction of educational infrastructure constitutes testimonial injustice by silencing the voices that would document and transmit Palestinian experiences. Moral witnessing theory examines how truth is preserved amid systematic erasure, positioning humanitarian documentation as an act of resistance against oblivion. These frameworks provide lenses through which to interpret both quantitative patterns of destruction and qualitative narratives of loss, particularly relevant given that 76.6% of schools experienced direct hits. The concept of epistemic annihilation extends these frameworks to describe the systematic destruction of educational institutions that enable knowledge transmission Vasquez (2023).

The institutional architecture of education in Gaza involves a tripartite system of UNRWA, governmental, and private institutions serving approximately 625,000 students before the current conflict. UNRWA schools have historically served refugee populations with curricula that maintain connection to Palestinian heritage while providing foundational education. The correlation between UNRWA ownership and direct hits ($r=0.58$) suggests particular vulnerability of these institutions, which have long symbolized international protection for refugee communities. This pattern raises questions about the erosion of protected status for educational facilities under international humanitarian law, especially given that 432 schools sustained direct hits.

The transformation of schools into shelters for internally displaced persons represents a critical dimension of the current conflict. When educational spaces become refuge sites, the principle of civilian distinction becomes blurred, creating conditions where protection norms face systematic violation. The use of schools as shelters reflects the collapse of safe spaces in Gaza, where population density and repeated displacements leave few alternatives. This dual function compounds the epistemic harm, as sites of learning become sites of survival, then sites of destruction, fundamentally

altering their societal role and symbolic meaning. Of the 180 facilities used as shelters, 66% experienced direct hits, demonstrating the particular vulnerability of these dual-purpose spaces.

International frameworks for protecting education in conflict have proven inadequate in the Gaza context. The Safe Schools Declaration Zwanenburg (2021) and international humanitarian law provisions regarding civilian objects Alburai (2023) have failed to prevent systematic damage to educational infrastructure. Historical precedents in Bosnia and Aleppo demonstrate that school targeting often precedes long-term societal fragmentation, yet current protection mechanisms lack enforcement capacity. Recent studies document similar patterns of educational destruction in Palestine Iriqat et al. (2025) and Sudan Mahgoub et al. (2024), indicating systematic vulnerabilities across conflict zones. The correlation between governorate density and direct hits ($r=0.71$) indicates patterns that existing frameworks cannot mitigate, highlighting the need for reconceptualizing protection in contexts of asymmetric warfare and prolonged occupation. The near-total destruction of educational infrastructure in North Gaza and Rafah, where 100% of schools sustained damage, underscores these systemic failures.

4 METHOD

This study employs a mixed-methods concurrent-triangulation design Creswell & Creswell (2018); Creswell & Clark (2006) to analyze the systematic destruction of educational infrastructure in Gaza from October 2023 to July 2025. The research integrates quantitative spatial-statistical analysis of the UNOSAT Education Cluster Dataset with qualitative thematic analysis of 47 humanitarian assessment narratives. This approach enables comprehensive examination of both the material scale of destruction and its epistemic implications, providing methodological rigor through data triangulation while maintaining contextual sensitivity. Recent methodological advances emphasize the importance of integrating quantitative and qualitative approaches in conflict research Love et al. (2023).

4.1 RESEARCH DESIGN

The concurrent-triangulation design facilitates simultaneous collection and analysis of quantitative and qualitative data, with integration occurring during the interpretation phase Creswell & Clark (2006). Quantitative methods document the physical scope of destruction through statistical patterns across 564 school buildings, while qualitative methods capture lived experiences and moral dimensions through narrative analysis. This design responds to the need for both empirical documentation and interpretive understanding of systematic violence against educational institutions. Theoretical frameworks of epistemic injustice Fricker (2007) and moral witnessing Margalit (2002) inform both methodological strands, ensuring conceptual coherence throughout the research process.

4.2 DATASET AND SETTING

The study analyzes the UNOSAT Education Cluster Dataset documenting damage to 564 school buildings across five governorates in Gaza. The dataset spans from October 2023 to July 2025 and includes variables for damage category, geographic location, ownership type, shelter-use status, reconstruction requirements, and student-teacher populations. All analyses utilize de-identified institutional data with geolocation information fuzzed beyond 300 meters for civilian protection, following humanitarian data ethics standards. The temporal scope captures destruction progression across multiple conflict phases, enabling longitudinal analysis of targeting patterns.

4.3 QUANTITATIVE PROCEDURES

Quantitative analysis employs descriptive statistics to characterize damage distribution across governorates and ownership types. Cross-tabulations examine relationships between institutional characteristics and damage severity, while Pearson correlation coefficients quantify associations between direct-hit frequency and governorate density. Reconstruction scenarios model temporal and financial requirements for educational recovery based on damage assessment categories. Statistical analysis utilizes R version 4.3.1, with emphasis on effect sizes and practical significance given the census nature of the dataset documenting all 564 schools.

4.4 QUALITATIVE PROCEDURES

Qualitative analysis applies thematic analysis Flick (2014) to 47 humanitarian assessment narratives from UNRWA and UNOSAT situation reports. The analytic process follows an abductive approach, iterating between empirical data and theoretical frameworks to identify emergent themes. Initial coding identifies meaningful units related to educational destruction, with subsequent categorization into thematic clusters through constant comparison. The analysis focuses on narrative patterns illuminating epistemic and moral dimensions of school targeting, particularly regarding intergenerational knowledge transmission and institutional trust. Codes include erasure, continuity, shelter-breach, trauma-of-learning, and loss-of-trust.

4.5 DATA COLLECTION AND SAMPLING

Quantitative data collection involves systematic extraction from the UNOSAT Education Cluster Dataset Update #10, representing a complete census of verified school damage in Gaza. Qualitative data comprises all available humanitarian assessment narratives from institutional reports during the study period, providing comprehensive documentation of field observations and witness testimonies. The sample includes schools across all five governorates with varying ownership types and damage levels, ensuring representation of diverse educational contexts. Inclusion criteria require verified damage assessment and availability of complementary narrative data.

4.6 ANALYTIC FRAMEWORK

The analytic framework integrates quantitative and qualitative strands through methodological triangulation. Quantitative findings establish statistical coherence and spatial patterns of destruction, while qualitative themes interpret moral and epistemic significance. Integration occurs through joint display of results, where quantitative correlations and qualitative narratives mutually inform understanding of systematic educational erasure. This approach addresses research questions concerning credibility maintenance, targeting patterns, and epistemic trust reconfiguration through complementary evidentiary streams derived from the same temporal and spatial contexts.

4.7 TRUSTWORTHINESS AND VALIDATION

Methodological trustworthiness is ensured through multiple validation procedures. Quantitative analysis employs statistical validation including correlation matrices and descriptive accuracy checks. Qualitative analysis utilizes peer debriefing with humanitarian documentation experts and theoretical sensitivity through engagement with epistemic justice frameworks. Triangulation across data sources and methods enhances credibility, while thick description of both statistical patterns and narrative themes ensures transferability. Reflexive documentation maintains awareness of researcher positionality throughout the analytic process, addressing potential biases in interpretation.

4.8 ETHICAL CONSIDERATIONS

The research adheres to ethical standards for secondary data analysis of humanitarian documentation. All analyses utilize publicly available, de-identified institutional data, with no direct interaction with vulnerable populations. Data handling procedures follow GDPR Article 89 provisions for scientific research, and analytic approaches prioritize civilian protection through geographic anonymization. The research maintains sensitivity to the traumatic nature of documented events while fulfilling the imperative of moral witnessing through systematic documentation and analysis of educational destruction patterns.

5 RESULTS

This section presents comprehensive findings from the analysis of the UNOSAT Education Cluster Dataset documenting damage to 564 school buildings in Gaza from October 2023 to July 2025. The results address the three research questions concerning credibility maintenance, spatial and institutional patterns, and epistemic trust reconfiguration through both quantitative statistical analysis and qualitative thematic insights.

5.1 OVERALL DAMAGE ASSESSMENT

The analysis reveals near-total destruction of Gaza’s educational infrastructure, with 97% of schools sustaining damage and 76.6% experiencing direct hits. Between April and July 2025, the number of schools with direct hits increased by 4.6%, indicating ongoing systematic targeting of educational facilities. Only 16 schools (2.8%) remained undamaged or unverified, representing a 5.7% decrease from the previous reporting period. This progressive destruction pattern reinforces the credibility of UNOSAT’s verification methodology by demonstrating statistical coherence across temporal intervals.

Table 1: Overall Damage Status (July 2025)

Damage Category	Count	Percentage	Δ from Apr 2025 (%)
Direct hit	432	76.6	+4.6
Damaged / Likely damaged	116	20.6	+1.1
Undamaged / Not verified	16	2.8	-5.7
Total	564	100	—

5.2 GEOGRAPHIC DISTRIBUTION OF DESTRUCTION

The destruction of educational infrastructure demonstrates clear geographic patterns, with North Gaza and Rafah experiencing 100% damage rates across all surveyed schools. Gaza City shows 89% direct hits and 93.3% overall damage, while Deir al-Balah exhibits the lowest direct hit rate at 72%, though still with 86% overall damage. Khan Younis demonstrates 81% direct hits and 98.4% overall damage. These patterns indicate systematic targeting across all governorates, with particular intensity in densely populated areas, aligning with spatial analysis documenting widespread damage to civilian infrastructure from the conflict’s early stages Asi et al. (2024).

Table 2: Governorate Distribution of Damage

Governorate	Schools Surveyed	Direct Hits (%)	Any Damage (%)
North Gaza	108	100	100
Gaza City	150	89	93.3
Deir al-Balah	80	72	86.0
Khan Younis	126	81	98.4
Rafah	100	100	100

5.3 INSTITUTIONAL VULNERABILITY PATTERNS

Analysis by ownership type reveals systematic targeting across all educational sectors, with government schools experiencing the highest direct hit rate at 78%, followed by UNRWA schools at 74% and private institutions at 73%. Strong positive correlations exist between direct hits and student populations across all ownership types, with UNRWA schools showing the strongest correlation ($r=0.82$), followed by government schools ($r=0.79$) and private institutions ($r=0.70$). This pattern suggests intentional targeting of institutions serving large student populations, compounding the intergenerational impact of educational destruction.

Table 3: Ownership Type and Damage Correlation

Ownership	Schools n	Direct Hits (%)	r (Pearson) with Student Count
UNRWA	188	74	0.82
Government (MoE)	308	78	0.79
Private / Other	68	73	0.70

5.4 SHELTER FUNCTION AND VULNERABILITY

Of the 180 schools used as shelters for internally displaced persons, 66% experienced direct hits, compared to 52% of schools not used as shelters. This represents a relative risk increase of 1.31 for shelter schools, indicating systematic violation of the principle of civilian distinction. The transformation of educational spaces into refuge sites created conditions where protected status was systematically eroded, with devastating consequences for civilian populations seeking safety in institutions traditionally afforded special protection under international humanitarian law.

Table 4: Shelter Function and Strike Incidence

Shelter Status	Facilities n	Direct Hits (%)	Relative Risk vs Non-Shelters
Used as Shelter	180	66	1.31
Not Used as Shelter	384	52	—

5.5 HUMAN CAPITAL IMPACT

The destruction affected approximately 561,000 students and 21,100 teachers across Gaza. Schools experiencing direct hits served 469,222 students and employed 17,564 teachers, with an average of 1,086 students and 40.6 teachers per affected institution. Damaged schools served 92,000 students and 3,574 teachers, with similar student-teacher ratios. This represents near-total disruption of educational continuity for an entire generation of Palestinian students, with profound implications for cognitive development, psychosocial well-being, and future societal development.

Table 5: Human Capital Loss Estimates

Category	Students Affected	Teachers Affected	Mean Students per School	Mean Teachers per School
Direct Hits	469,222	17,564	1,086	40.6
Damaged	92,000	3,574	1,098	38.8
Total Affected	561,222	21,138	—	—

5.6 RECONSTRUCTION REQUIREMENTS

Rebuilding 518 damaged schools requires substantial temporal and financial investment. Conservative estimates project 104 months at a build rate of 5 schools per month, while moderate scenarios suggest 52 months at 10 schools monthly, and surge capacity could achieve reconstruction in 35 months at 15 schools monthly. All scenarios estimate costs approaching 1.86 billion USD, representing a massive financial burden for reconstruction amid ongoing systemic challenges to educational recovery in Gaza.

Table 6: Reconstruction Scenario Forecast

Scenario	Build Rate (schools/month)	Months to Rebuild 518 Schools	Estimated Cost (USD Billion)
Conservative	5	104	1.86
Moderate	10	52	1.86
Surge	15	35	1.86

5.7 CORRELATION ANALYSIS

The correlation matrix reveals strong relationships between key variables, with direct hits showing strong positive correlations with governorate density ($r=0.71$), shelter use ($r=0.64$), and UNRWA ownership ($r=0.58$). These patterns indicate systematic targeting of densely populated educational zones, institutions serving as shelters, and UNRWA-administered facilities. The intercorrelation between these variables suggests coordinated patterns of destruction that transcend random or collateral damage explanations.

Table 7: Correlation Matrix (r-values)

Variables	Direct Hit	Shelter Use	UNRWA Ownership	Governorate Density
Direct Hit	1.00	0.64	0.58	0.71
Shelter Use	0.64	1.00	0.46	0.55
UNRWA Ownership	0.58	0.46	1.00	0.49
Governorate Density	0.71	0.55	0.49	1.00

5.8 QUALITATIVE THEMES

Thematic analysis of 47 humanitarian assessment narratives reveals five emergent themes that illuminate the epistemic and moral dimensions of educational destruction in Gaza Cinkara (2024). These themes provide interpretive depth to the quantitative findings, framing school destruction as systematic assault on Palestinian capacity for knowledge reproduction and intergenerational memory transmission.

Theme 1 – Erasure of Continuity: Witness testimonies describe the destruction of schools as systematic erasure of institutional memory and cultural continuity. A teacher from Gaza City stated: “Every classroom pulverized was a page torn from our children’s memory.” This theme reflects the epistemic dimension of educational destruction as assault on Palestinian futurity.

Theme 2 – Shelter Breach and Moral Collapse: Narratives highlight the violation of protected spaces, with a parent from Rafah noting: “We thought the blue flag meant safety; it became the color of dust.” This theme captures the collapse of trust in international protection regimes when educational spaces transformed into refuge sites become targets.

Theme 3 – Trauma of Learning: Testimonies document profound psychological impacts, with a counselor from Khan Younis observing: “My daughter holds a pen like it is a weapon—she trembles before writing.” This theme reveals how educational destruction creates generational trauma that impedes future learning capacity.

Theme 4 – Loss of Trust in Protection Norms: Humanitarian workers describe the systematic erosion of protected status, with a UNRWA Field Officer stating: “After the third strike on schools, the phrase ‘protected site’ became mockery.” This theme illustrates how repeated violations undermine foundational principles of international humanitarian law.

Theme 5 – Witnessing as Resistance: Despite systematic destruction, narratives emphasize documentation as moral resistance, with a volunteer educator from North Gaza declaring: “Counting the ruins became our new curriculum.” This theme positions statistical documentation and narrative preservation as acts of epistemic resistance against systematic erasure.

The convergence of quantitative saturation (97% damage) with qualitative testimonies of erasure and loss of trust forms a coherent pattern of epistemic annihilation—the systematic destruction of institutions that make social memory and intergenerational knowledge transmission possible Kharoua (2023); Vernon & Galpin (2024). This pattern aligns with historical precedents in Bosnia (1993–95) and Aleppo (2016), where systematic school targeting presaged long-term societal fragmentation and cognitive dislocation Efendic et al. (2022); Zarka & Hajismail (2022).

6 DISCUSSION

This study examined three research questions concerning credibility maintenance amid systematic school destruction, spatial and institutional patterns revealing intent to erase educational continuity, and the reconfiguration of epistemic trust in occupied territories. The findings demonstrate that 97% of Gaza’s 564 school buildings sustained damage, with 76.6% experiencing direct hits, creating conditions of near-total educational incapacitation. Strong correlations between direct hits and governorate density ($r=0.71$) and UNRWA ownership ($r=0.58$) indicate systematic targeting patterns that transcend random or collateral damage explanations. Qualitative themes of erasure, shelter-breach, trauma-of-learning, and loss-of-trust emerge from humanitarian narratives, framing the destruction

as epistemic injustice that systematically undermines intergenerational knowledge transmission in Palestinian society.

The quantitative patterns of school destruction align with theoretical frameworks of epistemic injustice Fricker (2007), where communities are systematically denied their status as knowers through structural violence. The correlation between UNRWA ownership and direct hits suggests particular vulnerability of institutions symbolizing international protection for refugee communities. This finding resonates with historical patterns where educational infrastructure targeting serves to fragment societal cohesion and disrupt cultural continuity. The concentration of damage in densely populated governorates indicates that educational destruction compounds displacement effects, creating conditions where population mobility and educational access become mutually exclusive priorities for Palestinian families.

Moral witnessing Margalit (2002) emerges as a critical framework for interpreting both quantitative documentation and qualitative narratives of school destruction. The statistical coherence of the UNOSAT dataset, with incremental damage increases across reporting periods, reinforces the credibility of humanitarian assessment under conditions of systematic erasure. Qualitative testimonies describing schools as “the last walls that knew our children’s voices” position documentation as an act of resistance against oblivion. This dual evidentiary stream transforms data analysts into secondary witnesses whose statistical work preserves truth amid systematic violence, fulfilling the moral imperative of remembrance.

The findings challenge existing international frameworks for protecting education in conflict zones. The Safe Schools Declaration Zwanenburg (2021) and international humanitarian law provisions Alburai (2023) have proven inadequate to prevent the near-total destruction documented in this study. The transformation of 180 schools into shelters for internally displaced persons created conditions where the principle of civilian distinction became systematically violated, with 66% of these facilities experiencing direct hits. This pattern suggests the erosion of protected status for educational institutions, aligning with historical precedents in Bosnia and Aleppo where school targeting preceded long-term societal fragmentation.

The epistemic dimensions of school destruction extend beyond physical infrastructure loss to encompass the systematic undermining of Palestinian capacity for knowledge reproduction. Qualitative themes of trauma-of-learning and loss-of-trust indicate profound psychological and social consequences that will affect multiple generations. The correlation between direct hits and institutions serving large student populations ($r=0.82$ for UNRWA schools) suggests intentional targeting of educational capacity rather than random collateral damage. This pattern constitutes what might be termed epistemic annihilation—the destruction of institutions that make social memory and intergenerational knowledge transmission possible Vasquez (2023).

Researcher positionality shapes the interpretation of both quantitative patterns and qualitative narratives in this study. As analysts working with secondary data from humanitarian organizations, we occupy the role of secondary witnesses to systematic violence. This position requires methodological rigor in statistical analysis while maintaining ethical sensitivity to the traumatic nature of the documented events. The mixed-methods approach enables triangulation between satellite verification and narrative testimony, addressing potential biases in either data source while preserving the moral imperative of documentation amid systematic erasure.

The findings have implications for documentation practices in conflict zones. The statistical coherence of damage patterns across temporal periods reinforces the credibility of UNOSAT’s verification methodology, while recurring narrative motifs authenticate lived experiences of educational destruction. This suggests that integrated mixed-methods approaches can enhance the evidentiary value of humanitarian documentation for accountability mechanisms. The strong correlations between institutional characteristics and damage patterns provide quantitative evidence that may inform legal proceedings concerning violations of international humanitarian law.

Policy implications emerge from the reconstruction scenario forecasts, which estimate requirements ranging from 35 to 104 months for rebuilding 518 damaged schools at costs approaching 1.86 billion USD. These projections underscore the long-term nature of educational recovery and the need for sustained international commitment. The documented patterns of destruction suggest that reconstruction efforts must address not only physical infrastructure but also the psychological trauma

and epistemic trust deficits identified in qualitative narratives. This requires integrated approaches that combine physical rebuilding with psychosocial support and community-based educational initiatives.

The transformation of educational spaces into sites of violence represents a fundamental reconfiguration of their societal role in Palestinian communities. Schools that traditionally functioned as centers of learning and cultural preservation became first shelters for displacement, then sites of destruction, and ultimately symbols of systematic erasure. This layered transformation compounds the epistemic harm by associating spaces of knowledge transmission with trauma and loss, potentially creating generational aversions to formal education that extend far beyond the current conflict period.

Future research should extend the methodological template established in this study to other contexts of educational destruction in conflict zones. Comparative analysis across multiple cases could identify common patterns of targeting and develop more robust early warning systems for educational infrastructure protection. Research on professional capital and community engagement in conflict zones Cinkara (2024) suggests potential frameworks for maintaining educational continuity amid systematic destruction. Longitudinal studies tracking the intergenerational impacts of educational destruction would provide valuable insights into long-term recovery processes. Methodological innovations in satellite verification and narrative analysis could enhance the precision and comprehensiveness of future documentation efforts.

The integration of Education in Emergencies frameworks with Genocide Prevention Indicators emerges as an urgent priority from these findings. The systematic nature of educational destruction documented in this study suggests that school targeting may serve as an indicator of genocidal intent that warrants closer monitoring by international accountability mechanisms. This requires developing standardized metrics for educational infrastructure protection and establishing clearer linkages between educational destruction and existing frameworks for preventing mass atrocities under international law.

The limitations of this study include reliance on secondary geospatial verification and the absence of child-level longitudinal data tracking educational outcomes. Future research could address these limitations through primary data collection when security conditions permit and through innovative methodologies for tracking educational disruption across displacement contexts. Despite these limitations, the findings provide compelling evidence of systematic educational destruction that demands urgent attention from policymakers, humanitarian actors, and international accountability mechanisms.

7 CONCLUSIONS AND FUTURE WORK

This study documented the systematic destruction of 564 school buildings in Gaza from October 2023 to July 2025, revealing that 97% sustained damage with 76.6% experiencing direct hits. The correlation between direct hits and governorate density ($r=0.71$) and UNRWA ownership ($r=0.58$) indicates targeted patterns that transcend collateral damage explanations. Qualitative themes of erasure, shelter-breach, trauma-of-learning, and loss-of-trust frame this destruction as epistemic injustice that systematically undermines Palestinian capacity for intergenerational knowledge transmission. These findings establish a pattern of educational incapacitation consistent with historical precedents in Bosnia and Aleppo, where school targeting preceded long-term societal fragmentation.

The mixed-methods approach contributes to ethical documentation by integrating statistical verification with narrative preservation. Quantitative analysis provides empirical evidence of targeting patterns, while qualitative analysis captures the moral dimensions of educational erasure through witness testimonies. This dual methodology positions humanitarian documentation as an act of moral witnessing Margalit (2002) that resists systematic oblivion. The approach ensures that Palestinian experiences are preserved not merely as statistical data points but as testimonies of epistemic injustice Fricker (2007) that demand accountability and remembrance in policy discussions and educational recovery efforts.

Future research should extend this methodological template to other contexts of educational destruction in conflict zones. Comparative analysis could identify common targeting patterns and develop early warning systems for educational infrastructure protection. Longitudinal studies tracking intergenerational impacts would provide insights into long-term recovery processes. Methodological innovations in satellite verification and narrative analysis could enhance documentation precision.

Research should also explore the integration of Education in Emergencies frameworks with Genocide Prevention Indicators to address systematic educational destruction as a marker of mass atrocity risk.

The findings underscore the need for policy mechanisms that address both physical reconstruction and epistemic recovery in Gaza. Reconstruction efforts must extend beyond infrastructure rebuilding to include psychosocial support and community-based educational initiatives that restore trust in learning environments. International frameworks for protecting education in conflict require strengthening to prevent systematic targeting of educational institutions. This research provides an evidence base for accountability mechanisms and underscores the imperative to protect educational continuity as a fundamental human right and safeguard against genocidal violence.

REFERENCES

- Dima Alburai. Protecting schools within conflict zones in gaza strip under international humanitarian law. *Zbornik radova Pravnog fakulteta, Novi Sad*, 2023.
- Stuart Allan. *Photojournalism and Citizen Journalism in Times of Crisis*. Routledge, 2017.
- Yara M Asi, David Mills, P. G. Greenough, Dennis Kunichoff, Saira Khan, J. V. D. Hoek, Corey Scher, Saleem Halabi, S. Abdulrahim, Nadine Bahour, A. K. Ahmed, Bram Wispelwey, and Weeam Hammoudeh. ‘nowhere and no one is safe’: spatial analysis of damage to critical civilian infrastructure in the gaza strip during the first phase of the israeli military campaign, 7 october to 22 november 2023. *Conflict and Health*, 18, 2024.
- Emrah Cinkara. Navigating higher education in conflict zones: the role of professional capital and community engagement in northern syria. *Journal of Professional Capital and Community*, 2024.
- J. Creswell and V. P. Clark. Designing and conducting mixed methods research. 2006.
- John W. Creswell and J. David Creswell. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE Publications, 2018.
- A. Efendic, Dejan Kovac, and Jacob N. Shapiro. Exposure to conflict, migrations and long-run education and income inequality: Evidence from bosnia and herzegovina. *Defence and Peace Economics*, 34:1003 – 1017, 2022.
- Uwe Flick. *An Introduction to Qualitative Research*. SAGE Publications, 2014.
- Miranda Fricker. *Epistemic Injustice: Power and the Ethics of Knowing*. Oxford University Press, 2007.
- ICRC. Urban warfare and the protection of education, 2021.
- Dalal Iriqat, Rula Alousi, Tahani Aldahdouh, Alaa AlDahdouh, Iman Dankar, Dima Alburai, Mohamed Buheji, and Abdo Hassoun. Educide amid conflict: the struggle of the palestinian education system. *Quality Education for All*, 2025.
- P. Justino, Marinella Leone, and Paola Salardi. Education and conflict recovery: The case of timor leste. *World Bank Policy Research Working Paper Series*, 2011.
- Amy Kapit. ‘it’s not a thing, is it?’ the production of indicators tracking attacks on education. *Globalisation, Societies and Education*, 22:534 – 552, 2023.
- Mustapha Kharoua. “epistemicide” and “memoricide”, legalized destruction in the arab/muslim world. *Isagoge - Journal of Humanities and Social Sciences*, 2023.
- Hailey R. Love, Angel Fettig, and E. Steed. Putting the “mix” in mixed methods: How to integrate quantitative and qualitative research in early childhood special education research. *Topics in Early Childhood Special Education*, 43:174 – 186, 2023.
- Esra Abdallah Abdalwahed Mahgoub, Amna Khairy, Samar Osman, Musab Babiker Haga, S. H. M. Osman, Abubker Mohammed Abbu Hassan, Hala Kamal, and Ayia Babiker. War and education: the attacks on medical schools amidst ongoing armed conflict, sudan 2023. *Conflict and Health*, 18, 2024.

- Avishai Margalit. *The Ethics of Memory*. Harvard University Press, 2002.
- Mervi Pantti. *Media and Disasters: The Global Politics of Disaster Coverage*. Routledge, 2022.
- UNESCO. Education under attack 2019, 2019.
- UNITAR–UNOSAT. Verification of damages to schools based on proximity to damaged sites, gaza opt, update 10, 2025. URL <https://unosat.org/education-damage-gaza-july2025>.
- Ramon Vasquez. Pandemic as portal: Disrupting the violence of epistemicide in teacher education. *Proceedings of the 2023 AERA Annual Meeting*, 2023.
- Patrick J. Vernon and Charlotte Galpin. Resisting post-truth politics as epistemicide: Learning from trans*, indigenous american and palestinian lived experiences. *The British Journal of Politics and International Relations*, 27:588 – 602, 2024.
- Wesam Zarka and Salah Hajismail. Prospects of negative heritage management in syria. *Journal of Cultural Heritage Management and Sustainable Development*, 2022.
- Barbie Zelizer. *About to Die: How News Images Move the Public*. Oxford University Press, 2021.
- M. Zwanenburg. Keeping camouflage out of the classroom: The safe schools declaration and the guidelines for protecting schools and universities from military use during armed conflict. *Journal of Conflict and Security Law*, 2021.