

From Classrooms to Emergency Tents: A Visual Case Study of Learning Continuity After the 2026 Flores Earthquake in Nagekeo, Indonesia

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ABSTRACT

Earthquakes can interrupt education not only through the physical destruction of school facilities but also by rendering apparently standing buildings temporarily unsafe for teaching and learning. This study examined how educational continuity was maintained following the 2026 Flores earthquake through a visual case study of a vocational secondary school in Aesesa, Nagekeo, East Nusa Tenggara, Indonesia. A qualitative visual-documentary design was employed using ten field photographs documenting damaged school facilities, outdoor areas, and temporary tent-based learning. Publicly available records from disaster and education authorities were used to contextualize the visual evidence. The photographs were analyzed through descriptive visual coding and thematic analysis, focusing on physical disruption, spatial adaptation, material resources, and observable indicators of educational continuity. Four themes emerged: disruption of conventional learning spaces, transition to temporary outdoor classrooms, continuity through material and organizational improvisation, and the coexistence of educational resilience with environmental vulnerability. The photographs document a rapid re-establishment of recognizable classroom activities despite loss of access to conventional facilities. However, open-sided tents, non-permanent flooring, and limited environmental protection demonstrate that continuity should not be equated with complete recovery. The findings suggest that temporary learning spaces function as transitional educational infrastructure connecting emergency response with longer-term school recovery. Post-disaster education policy should therefore integrate rapid learning continuity, structural safety assessment, improved temporary learning conditions, psychosocial support, and disaster risk reduction education within a comprehensive school resilience framework.

Keywords
Education in Emergencies
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Introduction

Disasters can transform educational environments within minutes. Damage to classrooms, ceilings, windows, circulation areas, utilities, and supporting infrastructure may interrupt teaching even when a school compound itself remains accessible. The disruption is particularly consequential because schools perform functions extending beyond academic instruction: they provide routine, social interaction, institutional stability, and connections between children, families, and communities [1]–[4]. Consequently, educational recovery has increasingly been recognized as an integral component of disaster recovery rather than an activity that should begin only after physical reconstruction has been completed.

This issue became particularly relevant in Flores, East Nusa Tenggara, Indonesia, following the earthquake of August 15, 2026. The Indonesian Agency for Meteorology, Climatology, and Geophysics (BMKG) updated the event to magnitude 7.7, with a depth of 15 km and an epicenter approximately 30 km northeast of Mbay, Nagekeo. Aesesa experienced an estimated intensity of VII MMI, at which damage to buildings may occur and occupants are likely to evacuate structures [5].

The consequences extended directly into the education sector. Initial government assessment reported 253 affected education units across seven districts in Flores, including Nagekeo. Emergency tents, school kits, and other educational supplies were subsequently mobilized as part of the response [6]. By early September, emergency learning had become an important modality across the affected region; government reporting indicated that 1,504 education units were operating through emergency-school arrangements, while 17 emergency classroom tents had been distributed to Nagekeo [7]. Further government assistance for schools in Nagekeo and Ngada included educational materials and financial support for 61 affected schools [8].

Such responses align with the concept of education in emergencies (EiE), which emphasizes safe, equitable, and relevant learning opportunities during crises [9]. The Comprehensive School Safety Framework (CSSF) similarly conceptualizes educational resilience around safer learning facilities, school safety and educational continuity management, and risk

reduction and resilience education [10]. These principles correspond with the Sendai Framework for Disaster Risk Reduction, which emphasizes understanding risk, strengthening governance, investing in resilience, improving preparedness, and "Build Back Better" during recovery [11].

Temporary learning spaces are frequently used when conventional school buildings become unavailable. Experience from previous disasters in Indonesia shows that temporary structures can rapidly restore access to learning [12]. However, educational continuity is conceptually different from educational recovery. A tent can enable instruction to resume, but resumption alone does not demonstrate that the learning environment is physically comfortable, pedagogically equivalent, psychologically supportive, or sustainable. Contemporary school-resilience literature therefore emphasizes the interaction among physical facilities, organizational capacity, human resources, community relationships, and disaster preparedness [13]–[18].

Research in Indonesia has examined disaster preparedness, disaster education, safe-school implementation, and resilience-building [15]–[20]. Yet immediate post-disaster adaptation is often represented statistically or retrospectively, while the material transformation of schooling itself receives less attention. Visual data offer a useful method for examining this transformation because photographs can document spatial arrangements, physical conditions, material objects, and the reorganization of everyday institutional practices [21]–[24].

Accordingly, this study examines photographic documentation of post-earthquake schooling in Aesesa, Nagekeo. It addresses three questions: What forms of physical disruption are visible in the school environment? How was teaching spatially reorganized when conventional classrooms could not be used? What does this visual transition reveal about educational continuity and school resilience during the immediate recovery period? The study does not attempt to measure learning achievement, psychological trauma, satisfaction, or individual perceptions. Instead, it focuses on what can be defensibly interpreted from visual and documentary evidence.

Materials and Methods

A. Research Design and Case Context

The study employed a qualitative visual-documentary case study. Visual case research is appropriate when spatial organization, material conditions, and observable practices constitute important evidence [21]–[24]. The case concerned post-earthquake educational activity at SMKN 1 Aesesa, a public vocational secondary school in Aesesa District, Nagekeo Regency, East Nusa Tenggara. Public education records identify the institution as a government vocational secondary

school in Aesesa [25]. Contemporary school and media documentation also reported damage to its learning spaces and the subsequent use of emergency tents for instruction.

The earthquake context was established through official documentation from BMKG and the Indonesian Ministry of Primary and Secondary Education. These documents were used only to establish the timing, magnitude, geographical context, and wider educational response. They were not used as substitutes for primary observations contained in the photographs.

B. Visual Data and Analytical Procedure

The primary dataset consisted of ten post-earthquake field photographs. Five photographs documented interior or circulation areas showing physical damage or debris; four showed teaching and learning taking place beneath temporary tarpaulin structures; and one documented an open school-ground area with a simple pole framework associated with adaptation of the outdoor environment.

Analysis followed principles of visual qualitative research [21]–[24] and thematic analysis [26]. Each image was first examined descriptively without interpreting motivations or psychological conditions. Observable elements were recorded under five categories: physical condition, spatial function, material infrastructure, human activity, and environmental exposure. Initial codes included *fallen building material*, *scattered fragments*, *visible wall cracking*, *inaccessible conventional space*, *temporary shelter*, *reuse of classroom furniture*, *teacher-led activity*, *student seating*, *open-sided learning environment*, and *outdoor spatial adaptation*. Codes were subsequently compared across images and grouped into higher-order themes following qualitative data-reduction principles [27].

Interpretation was deliberately conservative. Facial expressions were not used to infer emotions, and the photographs were not treated as evidence of trauma, learning effectiveness, satisfaction, attendance rates, or academic achievement. Similarly, visible cracking and debris were interpreted as evidence of physical disruption but not as an engineering determination of structural integrity.

Table 1. Visual Coding Framework

Visual evidence	Initial codes	Analytical category	Theme
Fallen interior materials and damaged surfaces	Physical damage, debris	Infrastructure disruption	Disruption of conventional learning spaces
Fragments scattered across floors and corridors	Circulation hazard, damaged glazing/materials	Accessibility and safety	Disruption of conventional learning spaces
Cracking adjacent to windows/walls	Visible building damage	Perceived/observable facility risk	Disruption of conventional learning spaces

Visual evidence	Initial codes	Analytical category	Theme
Tarpaulin supported by wooden/bamboo poles	Temporary shelter, improvised classroom	Spatial substitution	Transition to temporary learning spaces
Students seated on school chairs outdoors	Reused furniture, classroom configuration	Material adaptation	Continuity through improvisation
Teacher positioned within temporary class	Organized instructional activity	Institutional continuity	Continuity through improvisation
Open sides and natural ground surface	Environmental exposure	Temporary infrastructure limitation	Resilience with continuing vulnerability

Because identifiable students appear in several photographs, publication requires appropriate institutional permission and compliance with applicable consent and child-protection requirements. Where such permission is unavailable, faces and identifying details should be obscured. No individual student was identified or analyzed in the present study.

Results

A. Physical Disruption of Conventional Learning Spaces

The first visual pattern concerns the loss of normal indoor learning conditions. Several photographs show substantial fallen material inside a classroom, including large detached components and smaller debris. Other images show numerous fragments distributed across interior and corridor floors. In one corridor, cracking is visible near a window and wall junction. Together, the photographs document that disruption extended beyond a single isolated object and affected several types of school space.



Fig. 1. Visible post-earthquake disruption to school facilities. (A) Fallen structural and interior materials within a classroom; (B) scattered debris across a school circulation area; and (C) visible wall cracking and debris adjacent to classroom windows.

The significance of these observations lies not in determining engineering damage severity, which photographs alone cannot establish, but in demonstrating interruption of ordinary spatial use. Floors that normally function as circulation or instructional surfaces contain scattered debris,

while portions of the interior show detached material. Such conditions provide a visible rationale for restricting normal classroom use pending inspection and clearance.

This interpretation is consistent with official BMKG guidance following the earthquake, which advised people to avoid buildings that were cracked or damaged. BMKG also recorded VII MMI shaking in Aesesa [5]. The broader education-sector assessment subsequently documented damage to schools in Nagekeo and other Flores districts [6].

Importantly, the photographs do not establish that every classroom was structurally unsafe. Rather, they show that the school experienced sufficient visible physical disruption to make conventional educational space problematic and to require an alternative arrangement.

B. Transition from Permanent Classrooms to Temporary Outdoor Learning

The second theme is a distinct spatial transition from enclosed classrooms to temporary outdoor learning areas. Four photographs show groups of students assembled beneath tarpaulins erected on simple wooden or bamboo supports. The shelters are situated on open school grounds and have roofs but little or no permanent enclosure at the sides.

Despite the change in physical setting, the spatial organization remains recognizably classroom-like. Students are seated in rows or groups on conventional wooden school chairs, while an adult instructor occupies a position from which teaching or supervision can occur. Books, papers, bags, tables, and other educational objects are visible. Thus, the physical container of schooling changed substantially, but several material and organizational conventions of classroom instruction were retained.



Fig. 2. Temporary tent-based learning as an educational continuity response after the earthquake. (A) Outdoor temporary learning space established using a tarpaulin shelter and existing school furniture; (B) organized teaching and learning activities continuing within the temporary setting. Faces were blurred to protect participant privacy.

The visual evidence therefore suggests spatial substitution rather than suspension of schooling. A damaged or unavailable permanent classroom was functionally replaced by an outdoor instructional space. Similar emergency strategies were implemented more broadly after the Flores earthquake, as the Ministry of Education distributed emergency classroom tents to affected districts, including Nagekeo [7].

This finding corresponds with experiences from other emergencies in which identifying alternative learning locations enabled schools to resume instruction before reconstruction was completed [28]. Temporary learning spaces therefore operate as a bridge between immediate humanitarian response and restoration of permanent educational infrastructure.

C. Learning Continuity Through Material and Organizational Improvisation

A third pattern concerns what was retained rather than what was lost. The temporary classrooms incorporate existing school furniture and conventional learning materials. Students remain assembled as organized groups, school uniforms are visible, instructional materials are being handled, and teachers continue to occupy facilitative positions within the learning space.

These observable features are important because educational continuity requires more than physical shelter. It also depends on the reassembly of routines, resources, roles, and interactions that make schooling possible. The photographs show a relatively low-technology adaptation: tarpaulin, locally available structural poles, existing furniture, paper-based materials, and teacher presence combine to produce a functioning temporary learning environment.

This represents a form of organizational improvisation. It does not demonstrate that teaching quality remained unchanged, but it demonstrates that the school was capable of converting available resources into an alternative instructional arrangement. School-resilience research has similarly emphasized that resilience emerges from combinations of physical, human, institutional, and relational capacities rather than from infrastructure alone [13]–[16].

D. Educational Resilience Coexisting With Environmental Vulnerability

The final theme reveals an important tension. The photographs provide evidence of continuity, but they simultaneously reveal the limitations of emergency infrastructure. The tents have non-permanent roofs, open sides, and ground surfaces composed largely of grass or soil. Permanent walls, acoustic barriers, conventional classroom flooring, and the environmental control normally provided by a school building are absent.

These conditions should not automatically be interpreted as evidence of poor learning outcomes. The photographs cannot demonstrate whether heat, wind, noise, rainfall, dust, or visual distractions actually affected students during specific lessons. Nevertheless, the architecture visibly offers less environmental separation than an enclosed classroom and therefore remains potentially sensitive to such conditions.

This distinction is essential. Resuming instruction is evidence of continuity, but continuity is not equivalent to full recovery. The photographic case shows a school that has restored the function of gathering teachers and learners while still operating with temporary infrastructure. In resilience terms, this represents an adaptive phase rather than an endpoint.

Discussion

The central contribution of this case is the visualization of a transition from infrastructure disruption to functional educational adaptation. The photographs capture two conditions existing almost simultaneously: conventional school spaces displaying visible post-earthquake damage and temporary outdoor spaces in which organized instruction has resumed. This juxtaposition provides a material representation of educational resilience.

The finding is compatible with Mutch's argument that schools are important institutions throughout disaster preparedness, response, and recovery [3]. It also aligns with school disaster resilience frameworks that treat educational institutions as systems composed of infrastructure, people, management arrangements, external relationships, and environmental conditions [13], [14]. A school can therefore lose access to one component—its conventional classroom infrastructure—while maintaining partial functionality through other components, particularly human organization and adaptive use of space.

The case also illustrates the relevance of the CSSF distinction between Safer Learning Facilities and School Safety and Educational Continuity Management [10]. The temporary tents primarily address continuity: they provide an immediately usable location for school activities. They do not by themselves resolve the safer-facility problem represented by damaged permanent buildings. A resilient recovery strategy consequently requires both functions. Temporary classrooms can preserve access to education while inspection, repair, retrofitting, or reconstruction establishes safer permanent facilities.

This point is reinforced by the INEE Minimum Standards, which emphasize not simply access to education during crisis but access to safe, inclusive, relevant, and appropriate learning environments [9]. International experience shows that temporary learning spaces are valuable precisely because they can be established rapidly [12]. At the same time, UNICEF has recently cautioned that conventional tents and short-term temporary structures are not necessarily adequate as long-duration solutions; resilience requires more sustainable and adaptable learning infrastructure [29].

For Nagekeo, this distinction has practical relevance. The national response appropriately prioritized emergency tents and school supplies immediately after the earthquake [6]–[8]. The visual evidence suggests why such interventions matter: a simple shelter combined with existing

school furniture can restore the spatial possibility of instruction. Yet the next phase should examine ventilation, shade, weather resistance, flooring, accessibility, sanitation, drinking water, lighting, classroom density, acoustics, and evacuation arrangements. These variables were not measured in this study and should form part of a subsequent temporary-learning-space assessment.

The Indonesian Satuan Pendidikan Aman Bencana (SPAB) policy provides an appropriate institutional mechanism for extending emergency adaptation into longer-term resilience. Regulation No. 33 of 2019 explicitly addresses protection of students and education personnel, disaster preparedness and mitigation, emergency response, post-disaster handling, and continuity of educational services [30].

However, Indonesian research indicates that sustainability cannot be assumed. Sakurai *et al.* found that some externally supported school-disaster-preparedness activities in Banda Aceh were not maintained when ownership, institutional arrangements, and funding were insufficient [16]. More recent evaluations of SPAB likewise emphasize variation in preparedness and implementation [19]. This suggests that emergency tents should be embedded within a school-level continuity plan rather than treated as an isolated humanitarian provision.

The post-earthquake period also creates an opportunity for risk reduction and resilience education. The event itself can become locally meaningful curriculum material. Students can examine why particular parts of buildings failed, map evacuation routes, identify safe assembly areas, discuss earthquake information from BMKG, develop family preparedness plans, and participate in drills. Research has consistently shown the potential of school-based disaster education to strengthen knowledge and preparedness, although program quality and long-term sustainability vary [17], [18], [20], [31]–[34].

This is particularly relevant because students need not be conceptualized only as disaster victims. Child-centered DRR literature emphasizes their potential as active participants in risk reduction [31]. Indonesian evidence also indicates that disaster learning can extend beyond students to families through intergenerational knowledge transfer [18]. A temporary classroom could therefore become not only a site where ordinary subjects continue but also a setting in which the disaster experience is converted into practical preparedness knowledge.

At the same time, the findings should not be romanticized. Calling the visible adaptation "resilience" must not shift responsibility for adequate educational infrastructure onto teachers and students. Resilience is not the ability to tolerate indefinitely poor conditions. The photographs instead illustrate adaptive capacity under constraint. Didham and Ofei-Manu argue that adaptive capacity should be linked to quality education and effective learning environments

rather than understood merely as coping [35]. Disaster recovery should consequently move from emergency accommodation toward safer, more durable, and pedagogically appropriate facilities.

The study has several limitations. Ten photographs provide a narrow temporal and spatial record. They do not reveal conditions throughout the entire school, variation across days, student attendance, instructional quality, learning achievement, disability access, teacher workload, psychosocial well-being, or the perspectives of students and families. Visual data are selective representations shaped by where and when a camera is positioned [21]–[24]. Furthermore, photographs of visible damage cannot replace professional structural assessment. The study therefore offers a visual account of adaptation, not an evaluation of engineering safety or educational effectiveness.

Future research should combine photographic documentation with short interviews with school leaders, teachers, students, and parents; facility assessment; learning-environment observations; and follow-up documentation during reconstruction. Such longitudinal evidence would enable researchers to trace the transition from emergency continuity to educational recovery and, ultimately, to improved disaster resilience.

Conclusion

This visual case study documents how schooling continued after the 2026 Flores earthquake despite visible disruption to conventional school facilities in Aesesa, Nagekeo. Photographs showing fallen materials, debris, damaged interior areas, and cracking stand in clear contrast to images of teachers and students reassembling beneath temporary tarpaulin shelters using existing school furniture and learning materials.

Four interconnected findings emerge: conventional learning environments were disrupted; educational activity was spatially transferred outdoors; existing resources and routines enabled rapid organizational adaptation; and the resulting continuity remained dependent on temporary and environmentally exposed infrastructure.

The case demonstrates why post-disaster educational resilience should be understood as a process rather than a binary condition of school closure or reopening. Emergency tents can restore access rapidly, but recovery requires progression toward safe permanent facilities, institutionalized continuity planning, disaster preparedness, and risk-reduction education. In the Nagekeo context, the transition from damaged classrooms to temporary learning spaces therefore represents an important first stage of recovery—but not its completion.

Conflict of Interest

The authors declare no conflict of interest.

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