

Participatory documentary filmmaking for disaster literacy and community resilience in Lembang Fault

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ABSTRACT

Background: Indonesia's position along the Pacific Ring of Fire exposes it to high seismic risk, particularly in the Lembang Fault zone of West Bandung Regency. Despite existing disaster education initiatives, these programs remain inadequately contextualized within local socio-cultural realities, contributing to a substantial disparity in effective risk communication. **Purpose:** This study examines how participatory documentary filmmaking, grounded in local wisdom, can serve as a culturally embedded medium for strengthening disaster literacy among communities along the Lembang Fault. **Methods:** Employing a qualitative action research approach, this study engaged a pentahelix collaboration involving community organizations, academia, government, media, and the private sector. The primary intervention was the co-creation of the documentary film *Menyasar Lembang*, mapping geological hazards alongside the cultural narratives of at-risk Sundanese communities. **Results:** The integration of participatory storytelling with indigenous knowledge systems fostered a dialogic learning space that cultivated multidimensional disaster risk understanding. The film reinforced both scientific literacy and local value systems, while the research produced a replicable conceptual model of community-based documentary filmmaking for disaster literacy, encompassing facilitation, risk assessment, community production, and evaluation. **Conclusion:** The co-produced, culturally embedded documentary *Menyasar Lembang* demonstrates significant potential as a catalyst for collective learning, cultural revitalization, and grassroots resilience. **Implications:** This research offers a scalable and replicable model for disaster risk communication applicable across other vulnerable regions in Indonesia. Theoretically, it affirms the capacity of participatory visual media, particularly documentary film, to bridge scientific knowledge and indigenous wisdom in building community resilience.

Keywords: Community-based communication; disaster literacy; documentary film; local knowledge; participatory media

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INTRODUCTION

Indonesia, as an archipelagic nation positioned along the Pacific Ring of Fire, lies at the convergence of four major tectonic plates: The Eurasian, Pacific, Philippine, and Indo-Australian plates. This geological and geographical setting makes the country highly vulnerable to earthquakes, tsunamis, volcanic eruptions, landslides, and extreme climatic events (Dede et al., 2024). According to the National Disaster Management Authority, Indonesia recorded over 3,500 disaster events in 2023 alone, affecting millions of citizens and underscoring the persistent gap between scientific risk knowledge and community-level preparedness (Rosyida et al., 2023). This staggering frequency of disasters reflects not only the country's inherent geophysical exposure but also the structural inadequacies in how disaster risk information is communicated, understood, and acted upon at the community level. The challenge is not merely technical; it is fundamentally communicative and cultural. Communities that lack the capacity to interpret, internalize, and respond to disaster risk information remain disproportionately vulnerable, regardless of the sophistication of early warning systems or government mitigation infrastructure. The Lembang Fault represents one of the most critical seismic threats within this national landscape. This active fault line runs 29 kilometers through West Bandung Regency, crossing five populated sub-districts vital for tourism and economic activities,

thereby increasing regional vulnerability and risk.

The Lembang Fault has been studied extensively in geological and paleoseismological research. Supendi et al., (2018) describe it as having sinistral (left-lateral) movement with a slip rate of 3 to 5.5 mm/year, indicating a high likelihood of future earthquakes. Additionally, the 2021 Indonesian Disaster Risk Index (IRBI) gave West Bandung Regency a disaster risk score of 107.31, placing it in the very high-risk category for seismic events (InaRISK, 2026). These figures are particularly alarming given that the fault traverses densely inhabited residential areas, agricultural zones, and one of West Java's most visited tourist destinations. The potential human and economic toll of a major seismic event along this fault is therefore substantial. The Lembang area is further distinguished by its dense population, active tourism economy, and the presence of the Sundanese cultural community, whose indigenous knowledge systems and oral traditions offer a unique and underexplored resource for disaster risk communication. This socio-cultural richness, combined with extreme geological vulnerability, makes Lembang a critical and representative case for studying the intersection of local wisdom and disaster literacy, a combination rarely examined in Indonesian media studies. The convergence of high physical risk and rich cultural heritage in a single geographic locus creates both an urgent need and a distinctive opportunity

for innovative, culturally grounded disaster communication approaches.

Despite these findings, public awareness and preparedness levels remain low. The core issue stems from a common assumption in formal mitigation frameworks: that top-down dissemination of scientific data will automatically produce behavioral change. As a result, most strategies remain technocratic and overlook socio-cultural factors essential for community resilience (Imperiale & Vanclay, 2021). Government-led disaster communication campaigns have predominantly relied on printed materials, official announcements, and standardized training modules that, while scientifically accurate, fail to resonate with the lived realities and cultural frameworks of local communities. This disconnect between the language of scientific risk and the language of everyday community life represents one of the most persistent barriers to effective disaster preparedness in Indonesia.

Such programs often ignore community-level engagement, assuming communities are passive recipients. Yet local communities possess rich stores of knowledge, stories, myths, tales, and histories passed down for centuries. Dismissing these cultural resources represents a failure to translate scientific risks into actionable grassroots awareness. When paired with participatory methods, these resources can significantly strengthen disaster risk reduction programs. The recognition that communities are not blank slates awaiting expert instruction, but

rather active knowledge holders with centuries of accumulated environmental wisdom, is fundamental to any genuinely effective disaster literacy initiative. Participatory approaches that honor and integrate this existing knowledge base are therefore not merely preferable but epistemologically necessary.

The gaps within formal structures regarding community preparedness point to the need for a community-oriented model, the Community-Based Disaster Risk Management (CBDRM) approach. This model gives primacy to local communities' roles and contributions as disaster risk mitigators, using their indigenous resources, while also building grassroots institutional capacities. Various community-based organizations, such as the *Forum Kesiapsiagaan Dini Masyarakat* (FKDM), *Kelompok Masyarakat Peduli Bencana* (KMPB), and STEPPA, have arisen in the Lembang District. These organizations, initiated by the residents with endorsement from the Regional Disaster Management Agency (BPBD), engage in education, risk mitigation, evacuation plans, and early warning systems programs. However, suboptimal coordination among these entities, as well as insufficient government support and public engagement, continue to hinder their effectiveness. The existence of these organizations demonstrates genuine community motivation and capacity for self-organization in the face of disaster risk; what remains lacking is a coherent, culturally resonant communication framework that can

unify their efforts and extend their reach to the broader community.

Insights from international models, such as Japan's BOKOMI framework, provide significant lessons for enhancing community resilience in disaster risk management (Honjo, 2021; Shiwaku et al., 2016). This model revolves around three core tenets: self-help, cooperative assistance, and public aid. It has demonstrated success in bolstering community readiness following both the 1995 Kobe Earthquake and the 2011 Great East Japan Earthquake. Adaptations of such models are evident within Indonesia, particularly in regions like Kampung Badran, Yogyakarta, and parts of Gujarat, India, underscoring that the permanence of disaster preparedness initiatives substantially relies on proactive involvement from communities, educational establishments, and local governments. The BOKOMI experience illustrates that community resilience is not a product of government intervention alone, but emerges from the sustained cultivation of social cohesion, shared responsibility, and culturally embedded preparedness practices. These international precedents affirm the value of community-centered approaches and provide a comparative lens through which the Lembang context can be understood and strengthened.

Community-based disaster risk reduction efforts in Lembang District have yet to fully capitalize on the potential of integrating local wisdom into disaster preparedness education. Although initiatives to date have

primarily focused on strengthening the internal capacities of community organizations, these efforts remain limited by the absence of comprehensive collaboration with broader community networks, stakeholders, and the reinforcement of supportive government policies. Such limitations hinder the scalability and sustainability of community-based disaster management initiatives. This finding points to a structural gap not only in organizational capacity but in the communicative infrastructure through which disaster knowledge is produced, shared, and sustained within the community.

This condition underscores a significant research gap that operates at three levels: (1) existing studies have examined either geological risk or community-based management in Lembang, but rarely both in integration; (2) the role of audio-visual media, particularly documentary film, as a culturally sensitive medium for disaster literacy in Indonesian contexts remains largely unexplored in the film and media studies literature; and (3) no study has yet examined how participatory documentary production can serve as both an educational intervention and a catalyst for the revitalization of Sundanese indigenous knowledge systems in disaster risk contexts. Without integrative media, disaster literacy remains fragmented. It stays siloed within technical geological science or community management, lacking a unifying medium to bridge the two (Rosfiantika, 2022).

Previous studies reinforce the paramount importance of local wisdom in disaster mitigation.

Local wisdom cultivates preparedness and resilience, shaped by communal experiences in navigating environmental hazards (Setiawati et al., 2022). This ecological perspective is vital for fostering a culture of mitigation deeply rooted in local contexts. Hidayat and Yatminiwati (2023) advocate for the integration of local wisdom into disaster education, positing it as a mechanism to empower communities and mitigate disaster impacts. Within the Sundanese cultural context specifically, local wisdom is embedded in oral traditions, mythological narratives, and customary practices (*adat*) that encode centuries of environmental knowledge. The *Sangkuriang* legend, for instance, is widely recognized as a cultural encoding of the volcanic and seismic history of the Bandung Basin, demonstrating how indigenous communities have historically processed and transmitted geohazard knowledge through narrative (Dede et al., 2024). This perspective highlights the necessity of culturally aware education as a foundational aspect of collective disaster risk awareness. The erosion of such traditions under the pressures of modernization and urbanization therefore represents not only a cultural loss but a tangible reduction in community disaster resilience.

In addition, community-based disaster management is a model of a paradigm shift, utilizing local knowledge to encourage communities to become active participants in disaster management planning (Rozi et al., 2021). In this context, the storytelling technique is highly beneficial. Storytelling embodies a narrative

technique that enables the audience to experience and reflect on their lives (Ririnisahawaitun et al., 2022). Narrative-based communication has been shown to enhance emotional engagement, facilitate knowledge retention, and promote behavioral change more effectively than purely informational formats, particularly in communities with strong oral traditions. The integration of storytelling into disaster literacy programs therefore represents a methodologically sound and culturally appropriate strategy for communities like those in Lembang.

The present study adopts the concept of disaster literacy, referring to an individual's ability to comprehend, analyze, and employ information on disasters. In crisis situations characterized by the rapid spread of misinformation and disinformation, high disaster literacy enables communities to critically evaluate information validity, make informed decisions, and improve collective safety (Brown et al., 2014). This conceptualization moves beyond a narrow understanding of literacy as mere information reception, recognizing instead that genuine disaster literacy requires active cognitive engagement, critical thinking, and the capacity to apply knowledge in dynamic, high-stakes situations. In the contemporary media environment, where social media platforms simultaneously accelerate both the spread of accurate risk information and dangerous misinformation, the cultivation of disaster literacy as a critical competency has never been more urgent.

Defining local wisdom requires understanding the notions, ethics, and insights of a community, deeply embedded within its societal fabric (Simanjuntak & Chintia, 2022; Suherman et al., 2021). Local wisdom is traditional, meaning there is a fully reciprocal relationship between the community and its surroundings, making it an essential principle for living (Maria, 2018; Ramadhani et al., 2024). However, there is a valid concern regarding the gradual disappearance or erosion of moral, social, and local cultural wisdom within modern social groups (Usman et al., 2020). This erosion is particularly pronounced in areas experiencing rapid tourism development and demographic change, such as Lembang, where the influx of external cultural influences and economic pressures can displace traditional knowledge systems and weaken the intergenerational transmission of indigenous environmental wisdom.

Within the domain of film and media studies, documentary film occupies a distinctive position as a medium capable of bridging scientific knowledge and community epistemologies. Nichols' (2001) seminal taxonomy of documentary modes, expository, observational, participatory, reflexive, performative, and poetic, provides a foundational framework for understanding how documentaries construct reality and engage audiences. The participatory mode, in particular, is highly relevant to this study, as it foregrounds the interaction between filmmaker and subject, positioning community

members as active co-constructors of the documentary's knowledge claims (Nichols, 2001, 2024). This aligns with the broader tradition of participatory cinema, which, as articulated by Rouch and later developed by Rouch, (2009); White, (2021), emphasizes the ethical and epistemological dimensions of community-centered visual production. Furthermore, visual pedagogy theory posits that audio-visual media can activate multiple cognitive pathways simultaneously, making complex information more accessible and emotionally resonant than text-based formats alone (Ahn, 2022). Documentaries that visually record events possess a unique narrative and aesthetic art that can be used to elicit critical awareness, empathy, and in-depth learning (Ahn, 2022; Mulia & Sitepu, 2024). In media, television, and film studies, documentaries are seen as a cinematic art capable of reconstructing social phenomena, narrating real events through subjective interpretations, and serving as vehicles for advocacy and education.

All the local stories collected through this method are used to sustain local narratives via storytelling techniques. This includes the *Sangkuriang* myth, which preserves elements of the seismic history of the Lembang region. On an international level, there are success stories like the *smong* narrative from Simeulue, which, during the 2004 Aceh tsunami, saved a significant number of people by instilling an organic, ancestral culture of preparedness.

This study therefore addresses the following

research objective: to develop and evaluate a participatory documentary filmmaking model as a culturally embedded medium for strengthening disaster literacy among communities in the Lembang Fault region, through the co-production of the documentary film *Menyasar Lembang* within a pentahelix collaboration framework.

RESEARCH METHODS

This study employs a qualitative action research approach to enhance culturally embedded disaster literacy in communities near the Lembang Fault. Conducted in two phases, Phase 1 (2019–2022) for capacity mapping, organizational development, and preliminary community engagement, and Phase 2 (2023–2024) for active intervention culminating in the co-production of *Menyasar Lembang* and its community dissemination on May 9, 2024, the research serves a dual purpose: facilitating participatory social change while generating usable theoretical knowledge. Action research is a practical methodology for co-creating knowledge and driving socio-political transformation, emphasizing culturally significant narratives and their influence on grassroots disaster preparedness (Coghlan, 2023).

The research adopts community-partnered documentary filmmaking as its primary social intervention, functioning as both an educational resource (White, 2021) and a knowledge-production mechanism. Participatory mode

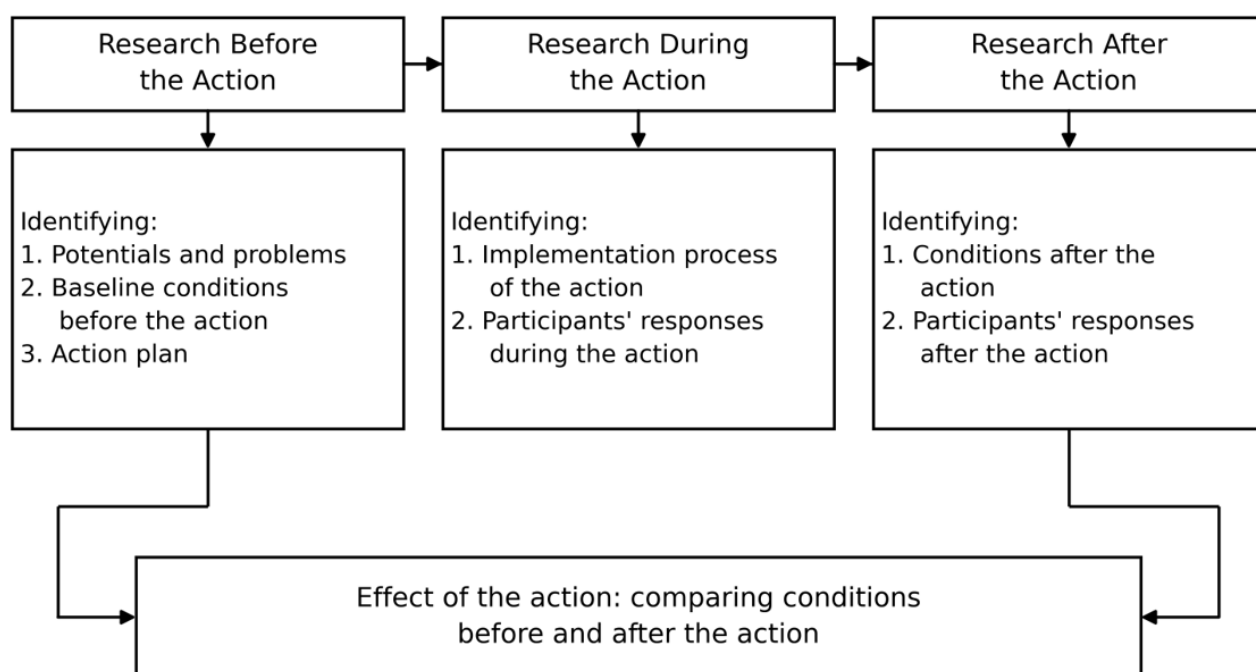
of documentary, community members are positioned as active co-constructors of the film's knowledge claims rather than passive objects of observation, integrating community mobilization with systematic research to translate scientific data and traditional knowledge into accessible visual formats (Nichols, 2024).

A total of 24 informants were selected through purposive sampling across four categories: (1) community organization leaders and members from FKDM, KMPB, STEPPA, Avengers, Endog Lini, Maung Andir, and IKTM (n=15); (2) local knowledge holders and cultural practitioners in Sundanese oral traditions and the *Sangkuriang* narrative (n=4); (3) government representatives from BPBD West Bandung Regency (n=2); and (4) academic and geological experts for scientific validation (n=3). Selection criteria included direct involvement in disaster risk management, possession of relevant local or institutional knowledge, and willingness to participate in both interviews and the documentary production process. Participants from FKDM, KMPB, STEPPA, Avengers, and Endog Lini were further positioned as active co-researchers, with their lived experiences shaping all project stages from planning and implementation through to evaluation and reflection.

Empirical data collection combined in-depth interviews, participatory observation, and comprehensive literature reviews (Davis et al., 2019; Dhobi, 2023). Participatory observation covered the full 29-kilometer Lembang

Fault stretch from Padalarang to Batu Kuda, documenting physical vulnerabilities alongside social relations, traditional customs, and oral histories. The literature review encompassed colonial-era records, European explorers' accounts of the Bandung Basin, and indigenous narratives including the *Sangkuriang* legend, analyzed through historical methods of heuristics, source criticism, interpretive analysis, and historiographic synthesis (Putri et al., 2024; Solikhah, 2023). The action research follows Mulyaningsih & Sugiyono's iterative cycle of planning, action, observation, reflection, and re-planning (Pennisi et al., 2024; Widowati, 2022). The overall logic of this cycle, which organizes data collection before, during, and after the action and compares the resulting conditions, is presented in Figure 1.

Data analysis employed six-phase thematic analysis: familiarization, initial coding, theme searching, theme reviewing, theme defining, and final reporting (Braun & Clarke, 2006). Coding was conducted independently by two researchers and cross-verified for analytical consistency. Thematic analysis was integrated with Participatory Rural Appraisal (PRA) methods to assess physical, social, and cultural threats, resources, and vulnerabilities. The documentary concept was validated through focus group discussions within a pentahelix collaboration involving academia, community, government, media, and the private sector, producing both peer-reviewed academic outputs and the documentary film *Menyasar Lembang* as a sustainable, media-based framework for community resilience.



Source: Research Documentation, 2019

Figure 1 Core Activities of the Action Research

RESULTS AND DISCUSSION

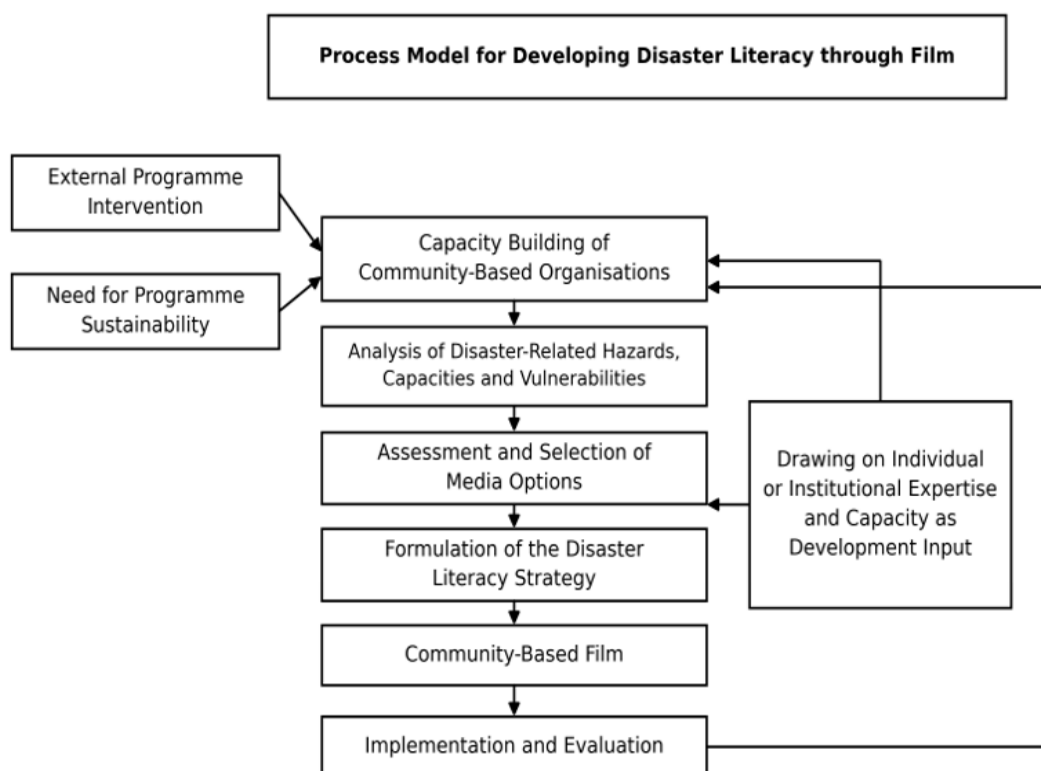
This section presents the findings of the participatory action research in three integrated parts: (1) the process and outcomes of community-based documentary production; (2) the five-phase narrative structure of *Menyasar Lembang* as a model of visual pedagogy; and (3) the conceptual model of documentary-based disaster literacy developed from the research findings.

Research highlights the efficacy of a community-based approach in documenting the integration of local wisdom among communities residing along the Lembang Fault. As the primary output of the project's second year, the documentary film *Menyasar Lembang* moves beyond the simple visual representation of geological threats. Instead, it captures the intricate social and community relations intertwined with these environmental risks.

During this second phase, the initiative transitioned into an active action research project, culminating in one of the first short educational documentaries titled *Storytelling in Disaster Literacy Based on Local Wisdom in the Lembang Fault*. This phase prioritized a co-creation framework where community members functioned as co-authors and narrators of their lived experiences, rather than passive information recipients. This adheres to the participatory mode of documentary, wherein the filmmaker's interaction with subjects becomes a visible and constitutive element of the film's meaning-making process (Nichols, 2024).

The production utilized a participatory methodology that centered local voices across all stages, from thematic selection to post-production. Driven by a collaborative network of community-based organizations (FKDM, KMPB, STEPPA, Avengers, and Endog Lini), the workflow involved thematic dialogues, risk mapping, and videography workshops. This process established local residents as active co-creators of contextually grounded disaster content. The positioning of community members as active agents in the co-construction of visual knowledge, rather than passive subjects, is fundamental to the ethical and epistemological integrity of participatory documentary practice (White, 2021).

The full sequence of this participatory workflow is summarized in Figure 2, which sets out the stages of community-based documentary film production traced during the second phase of the research. As Figure 2 indicates, the process moves from external program intervention and the recognition of a sustainability requirement, through the strengthening of community-based organizational capacity, the analysis of disaster-related hazards, capacities and vulnerabilities, and the assessment of media options, towards the formulation of a disaster literacy strategy that culminates in a community-based film and its subsequent implementation and evaluation. Each stage represented in Figure 2 draws on individual and institutional expertise as a development input, so that external technical assistance supports rather than supplants community decision-making.



Source: Second-Year Research Field Documentation (2024)

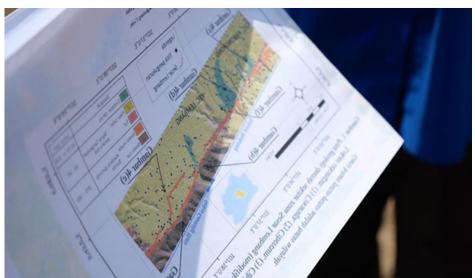
Figure 2 Stages of Community-Based Documentary Film Production

The Lembang Fault was selected due to its extreme geological vulnerability; this active 29-kilometer fault line intersects densely populated areas and thriving tourist zones, escalating potential disaster exposure. In response, the documentary serves as a medium for transformative learning, employing a context-sensitive and dialogic communication approach. Ultimately, as detailed in Table 1, the film's compelling narrative structure and cinematic aesthetics are strategically engineered to elevate public consciousness and foster sustainable community engagement in disaster literacy.

Read as a corpus rather than as discrete excerpts, the nine clips presented in Table 1 trace a deliberate movement across the cognitive and affective registers of disaster literacy. The opening clips establish cultural familiarity and observational tension, positioning the audience

within a landscape they already recognize before any technical information is introduced. The middle sequence, encompassing participatory mapping, simulation exercises, and recorded emotional responses, documents the behavioral and affective dimensions of the literacy intervention, while the closing clips foreground institutional collaboration and collective preparedness. This progression corresponds to the distinction Brown et al. (2014) draw between the reception of disaster information and the capacity to appraise and act upon it: the film does not merely present hazard data but stages the process through which a community comes to interpret that data. The visual grammar of the clips, alternating between intimate portraiture and wide landscape framing, reinforces the relationship between individual agency and

Table 1 Collaborative cinema: selected key scenes and production visual milestones

Film Clip	Note	Cinematic Function	Figure
Clip 1	Showcases traditional storytelling practices in Lembang as the foundation of the film's introductory narrative.	Establishes cultural context; activates audience identification with local oral tradition	
Clip 2	Captures the daily rhythms of local life juxtaposed against the silent yet imminent threat of seismic activity.	Creates dramatic tension through observational contrast; raises risk awareness	
Clip 3	Features Pak Ano delivering disaster mitigation insights through the lens of culturally rooted practices.	Positions local knowledge holder as epistemic authority; bridges science and tradition	
Clip 4	Chronicles the active involvement of community members in participatory mapping and site identification for disaster risk.	Documents CBDRM process; reinforces community agency	
Clip 5	Documents interactive disaster simulations and training exercises conducted with local residents.	Demonstrates behavioral learning outcomes of the literacy intervention	
Clip 6	Illustrates public emotional responses when confronted with disaster-related information.	Captures affective dimension of disaster literacy; humanizes risk communication	

(continued on next page)

Table 1 (continued)

Clip 7	Offers a reflective narrative moment as Pak Ano bridges scientific reasoning with indigenous knowledge through a relational and grounded dialogue.	Enacts epistemic negotiation between geoliteracy and Sundanese symbolic knowledge	
Clip 8	Visualizes collaborative frameworks under the pentahelix model.	Documents cross-sectoral partnership structure	
Clip 9	Concludes with a powerful portrayal of community solidarity and collective preparedness in the face of potential disaster scenarios.	Affirms community resilience as the film's transformative outcome	

Source: *Menyasar Lembang* film stills and Second-Year Research Field Documentation, 2024

shared territorial risk that the pentahelix framework seeks to institutionalize.

Complementing the film’s development, a participatory dialogue session was convened on May 9, 2024, with representation from multiple community stakeholders and local organizations, including FKDM, Maung Andir, and IKTM. During this forum, participants conveyed various insights and constraints encountered in the independent production of disaster education videos. Despite these limitations, community members demonstrated high levels of commitment and creativity in disseminating disaster-related content through digital platforms such as Instagram and TikTok, albeit with modest production value.

The discussions generated several pressing insights, foremost among them the recognition of a critical need for synergistic collaboration between grassroots communities, government agencies, and academic institutions in constructing a sustainable and inclusive disaster education ecosystem. One notable contribution came from Pak Ibnu, a representative of the Maung community, who highlighted the imperative to clearly differentiate scientific knowledge from local epistemologies in disaster-related communication. He illustrated this through local beliefs, such as the perception that monkey behavior may signal the onset of an earthquake. This distinction reflects the ‘epistemic tension’ inherent in participatory

documentary: the challenge of representing multiple, sometimes contradictory knowledge systems within a single coherent narrative without privileging one over the other (Nichols, 2024).

The treatment of this epistemic tension within the film merits particular attention, since it bears directly on what disaster literacy is taken to require. Rather than resolving the tension by ranking scientific explanation above local observation, the documentary holds the two accounts in view simultaneously, allowing the audience to see where they converge and where they do not. Observations such as changes in animal behavior are presented as part of the community's accumulated attentiveness to its environment, while the geological account of fault movement is presented as the explanatory framework within which such attentiveness may be interpreted. This procedure is consistent with the conception of disaster literacy advanced, in which the decisive competence is not the passive acceptance of authoritative information but the capacity to weigh sources against one another and to judge their validity (Brown et al., 2014). It also reflects the ethical requirement identified that participatory production should avoid converting community knowledge into raw material for expert interpretation (White, 2021).

Building on this convergence of knowledge systems, Pak Ano introduced a culturally grounded framework known as the 4M Framework: *Mikawanoh Lembur* (knowing one's

village), *Mulahsara Alam* (caring for nature), *Mikaweruh Adat* (understanding customary traditions), and *Mageuhan Iket* (strengthening symbolic awareness) (Personal communication, May, 1, 2024). This framework was developed inductively from field data across both phases of the research, through iterative dialogue sessions with community members, cultural practitioners, and local knowledge holders. Its validity was confirmed through member-checking with Sundanese cultural practitioners and cross-referencing with existing literature on Sundanese indigenous ecological knowledge (Dede et al., 2024; Suherman et al., 2021). These four pillars articulate a comprehensive integration of indigenous values into processes of risk identification, ecological preservation, cultural revitalization, and symbolic literacy in disaster awareness.

Each pillar of the 4M framework addresses a distinct dimension of disaster literacy, and their sequence is itself instructive. *Mikawanoh Lembur* operates at the scale of territorial knowledge, encouraging residents to read their own village as a landscape carrying a legible seismic history rather than as neutral ground. *Mulahsara Alam* translates that territorial awareness into an ethic of environmental stewardship, linking mitigation to the everyday practices of land and water management that condition the severity of secondary hazards. *Mikaweruh Adat* situates preparedness within customary social organization, drawing on the reciprocal obligations that structure communal

life and that determine how rapidly households can be mobilised. *Mageuhan Iket* addresses the symbolic register, sustaining the shared markers of Sundanese identity through which collective commitments are recognized and renewed. Taken together, the pillars proceed from place to environment to social structure to symbol, so that preparedness is framed not as an external requirement imposed upon the community but as an extension of obligations the community already acknowledges. In this respect the framework corresponds closely to the argument that local wisdom supplies the ecological and moral grounding upon which durable preparedness rests (Setiawati et al., 2022; Hidayat & Yatminiwati, 2023).

The film's synopsis reinforces the pivotal function of public consciousness in addressing the threat of natural disasters in the Lembang region, establishing local wisdom not merely as supplementary but as a foundational element in fostering community participation. Through a nuanced narrative, the film invites audiences to reflect on the historical pattern of disasters in the area, while bringing attention to influential figures such as Pak Ano and a researcher who jointly engage in community-centered education efforts. The documentary effectively depicts a trajectory of social transformation, charting the evolution of the community from one marked by limited disaster awareness to a more informed and resilient collective, capable of articulating and enacting proactive disaster responses grounded in their own cultural identity.

Menyasar Lembang's narrative is divided into five thematic phases, each depicting the community's transformed disaster literacy through the use of local wisdom. These phases were developed by the research team as an original analytical framework derived from the iterative action research process, drawing on narrative theory (Labov & Waletzky, 1997) and the concept of transformative learning (Mezirow, 2018) to structure the community's socio-psychological journey. These phases envelope the film's narrative and reflect the sociocultural aspects of the Lembang community, including resistance to and adaptation of disaster risk through visual pedagogy.

The first phase, Introduction (Equilibrium), encapsulates the ordinary daily flow of life in Lembang through the lens of the community storytelling tradition that has largely vanished due to modernity. This segment provides the socio-cultural backdrop: the community and nature, oral traditions, and the wisdom of the ancestors. It depicts the balance of culture before the onset of disruption.

The second phase, Conflict (Disruption), introduces scientific discourse into the community, particularly the seismic hazard of the Lembang Fault. The story introduces Pak Ano as a key local actor who bridges modern empirical geology and traditional storytelling. His character captures the first form of epistemic negotiation as the community begins to understand earthquake risk and integrates scientific, empirical, and traditional perspectives.

In the third phase, Recognizing Disruption, the narrative shifts to the emotional and psychological pain experienced by community members dealing with social stigma, misinformation, and a lack of reliable knowledge sources. The film explores the duality of fear and understanding, old and new, action and inaction. This phase elucidates psychological barriers to accepting information on impending disaster risks, which may contradict existing sociocultural norms.

The fourth phase, Attempt to Repair Disruption, is grounded in the penta-helix approach, which unites grassroots community organizations, educational and research institutions, public administration, the private sector, and media. This phase highlights how appreciation of relationships and diverse knowledge sources makes disaster literacy building progressive and sustainable. The film illustrates social cooperation as a mechanism to rebuild cohesion and restore adaptive capacities.

The fifth and closing phase, Reinstatement of Equilibrium, reflects the emergence of a more self-sufficient and disaster-prepared community. This renewed balance is not a return to the pre-disruption status quo but a manifestation of culturally and intergenerationally strengthened resilience. The community has internalized adaptive behaviors, institutional memory, and collective preparedness that blend modern and traditional elements. Strengthened cultural values have renewed youth activism, forming a new social order that is educated and empowered

to face unknown challenges.

The narrative serves both as a pedagogical and cinematic tool, exemplifying stages of community awakening and empowerment for disaster preparedness and resilience. Viewed through the lens of visual pedagogy, the five-phase structure functions as a scaffolded learning sequence: each phase progressively builds the audience's cognitive and affective engagement with disaster risk, moving from cultural identification (Phase 1) through critical awareness (Phases 2–3) to collective action and empowerment (Phases 4–5) (Ahn, 2022). This pedagogical architecture distinguishes *Menyasar Lembang* from conventional disaster information films, which typically operate in expository mode and prioritize information transfer over transformative engagement (Nichols, 2024). It demonstrates how participatory storytelling, combined with local knowledge, enhances disaster preparedness, communication, and visual literacy when tailored to context.

The stages recorded in *Menyasar Lembang* were crystallized into a conceptual model for developing disaster literacy through documentary films. This model, presented as an original contribution of this research, was derived inductively from the two-phase action research process and subsequently validated through focus group discussions with pentahelix stakeholders. This model ensures that disaster literacy remains an ongoing, evolving process rather than a one-off activity.

The model begins with external program intervention, which acts as the first impulse bringing discourse on disaster risk and mitigation to the community. External actors, primarily from academia or government, initiate discussions and provide impetus for addressing challenges.

The next stage involves developing sustainability strategies, ensuring literacy initiatives continue beyond a single project. This focuses on integrating disaster education as a permanent feature of community participation, strengthening community-based organizations to enhance self-sufficiency and resilience. The goal is to create grassroots organizations capable of autonomously managing, modifying, and expanding disaster-related activities.

Subsequently, the model proceeds to assessing levels of risk, capacity, and vulnerability. Communities, assisted by researchers, conduct localized assessments across physical, social, and cultural dimensions. This participatory diagnostic exercise fosters co-identification of contextual risks, strengths, and challenges. Insights inform the selection of appropriate media formats, with special attention to visuals for their potential to enhance knowledge transfer and cultural expression.

After media selection, the model emphasizes developing disaster literacy frameworks tailored to the community's needs, communication modes, and population characteristics. The central activity is the production of community-based documentary

films, enabling local members to become storytellers and knowledge creators. Participatory production ensures narratives are rooted in lived experience and cultural context, increasing acceptability.

To strengthen efficacy and legitimacy, the model includes collaboration with experts and institutions. These collaborations enhance documentary content and align it with broader disaster governance frameworks.

The final step is implementation and evaluation, where the finished documentary is disseminated and its effects assessed. Evaluation in this study was conducted through post-screening focus group discussions with community participants (n=18), assessing changes in self-reported disaster awareness, knowledge of local risk indicators, and stated preparedness behaviors. Participants reported increased confidence in identifying seismic risk signs, greater familiarity with evacuation routes, and stronger identification with community-based preparedness organizations following engagement with the film. The documentary thus functions as a tool for change in understanding and practicing preparedness and resilience.

The film demonstrates that integrating local knowledge into audiovisual narratives substantially enhances public understanding of complex risks. By involving grassroots stakeholders, such as FKDM, KMPB, STEPPA, Avengers, Endog Lini, and Maung Andir, throughout thematic development, videography training, field recording, and post-production

editing, the film emerges as a co-created knowledge artifact rooted in community realities. This supports the argument that contextualized visual representation grounded in authentic experience is more effective than top-down models in fostering engagement and awareness (White, 2021).

This aligns with the participatory visual methodology proposed by White, which emphasizes positioning community members as active agents in the co-construction of visual knowledge rather than passive subjects. The documentary functions as a dialogical arena where scientific and local epistemologies engage in constructive negotiation. Pak Ano embodies this as a cultural and epistemic broker, bridging geoliteracy with Sundanese symbolic and ritualistic knowledge systems (Pak Ano, personal communication, May 10, 2024). His role within the film aligns with what Nichols (2024) describes as the 'social actor' in participatory documentary, an individual whose authentic voice and situated knowledge become the primary vehicle for the film's argument. His representation promotes knowledge egalitarianism, strengthening community conviction in preparedness and mitigation messages.

The participatory approach illustrates how cross-sectoral penta-helix collaboration (community, academia, government, private sector, and media) overcomes challenges in grassroots educational media production. This was evident in the May 9, 2024, community

forum with FKDM, Maung Andir, and IKTM, where participants openly discussed challenges despite limited funding and technology. Their commitment to delivering disaster preparedness information via TikTok and Instagram proved crucial. The success of community media production lies not primarily in technological sophistication but in community desire and active participation.

Discussion forums enabled deeper epistemological engagement on differentiating and integrating scientific and local knowledge systems. Pak Ibnu emphasized distinguishing empirical science from local beliefs, such as animal behavior signaling catastrophes. Pak Ano later articulated this into the 4M framework, which revitalizes traditional wisdoms eroded by modernization and tourism. It serves as both an educational tool and a symbol of community resilience.

The documented process forms a conceptual model of community-based disaster literacy adaptable to various contexts. Key components include external intervention, sustainability planning, local organizational strengthening, risk and vulnerability assessments, media selection, context-based strategies, participatory filmmaking, expert collaboration, and evaluation. Active community participation defines each component, positioning locals as knowledge co-creators and catalysts for social change.

This research firmly establishes documentary film as a versatile tool for

advocacy, public education, and socio-cultural empowerment beyond entertainment and information. Situated within the broader landscape of participatory cinema theory (Rouch, 2009; White, 2021) and visual pedagogy (Ahn, 2022), this study contributes to film and media studies by demonstrating that the participatory mode of documentary production is not merely an ethical choice but an epistemologically productive methodology for generating culturally grounded disaster knowledge. The film transcends being an audiovisual product to become a medium of dialogue fostering cross-flow among actors and epistemic fields. Ultimately, community resilience building involves constructing narratives that articulate collective identity, values, and socio-economic realities of populations most susceptible to disaster risks.

Several limitations qualify these findings and delimit the claims the study can support. The evaluation reported here rests on self-reported change gathered through post-screening discussion rather than on measured behavioral outcomes, and no pre-intervention baseline was administered against which those reports could be calibrated; the evidence therefore establishes plausibility rather than magnitude of effect. The participant group, drawn largely from residents already affiliated with community-based disaster organizations, is also more disposed towards preparedness than the wider population of the fault zone, so the film's reception among less engaged audiences remains untested.

Finally, the model was developed within a single cultural setting, and the specifically Sundanese resources on which it draws are not transferable in their content. What is transferable is the procedure: the identification of locally authoritative knowledge holders, the negotiation of an interpretive framework with them, and the positioning of that framework as the organizing logic of the film rather than as decorative local color. The comparative experience of BOKOMI in Japan (Honjo, 2021; Shiwaku et al., 2016) suggests that such procedures endure precisely where they are re-grounded in local institutional and cultural forms rather than imported intact.

CONCLUSION

This study demonstrates that *Menyasar Lembang* transcends artistic production to function as a transformative social intervention that reconstructs disaster literacy through local cultural values. By employing participatory filmmaking, the research successfully repositions community groups—including FKDM, KMPB, STEPPA, Endog Lini, and Maung Andir—from passive information recipients into active producers of culturally grounded disaster narratives. Epistemologically, the study bridges modern scientific knowledge and grassroots understanding through the localized 4M Framework: *Mikawanoh Lembur* (knowing one's village), *Mulahsara Alam* (caring for nature), *Mikaweruh Adat* (understanding customary practices), and *Mageuhan Iket* (strengthening symbolic identity), establishing a crucial

epistemic equilibrium that enhances community ownership in disaster risk communication. The film's five-phase narrative arc simultaneously enriches its cinematic dramaturgy and mirrors the community's socio-psychological journey toward collective resilience within a pentahelix framework. This research further introduces a modular, replicable community-based disaster literacy model spanning intervention, sustainability, organizational strengthening, risk assessment, media strategy, and post-evaluation—each component adaptable to the socio-cultural context and resource capacity of other at-risk communities across Indonesia. Ultimately, this study affirms that effective disaster risk communication is less about top-down technical data transfer and entirely about the collaborative co-creation of meaningful narratives rooted in local identity.

Future research should employ mixed-methods designs with pre- and post-intervention measurements to strengthen evidence of impact, and extend this model to other culturally distinct disaster-prone regions. For practice, local governments and BPBD should formally integrate community-based documentary production into risk communication strategies, educational institutions should embed participatory visual media literacy into school curricula, and community organizations should be supported in developing sustainable digital dissemination through platforms such as YouTube, TikTok, and Instagram.

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Ethical clearance: This study involved human participants, including in-depth interviews with community informants (Pak Ano, Pak Ibnu, and members of FKDM, KMPB, STEPPA, Avengers, Endog Lini, Maung Andir, and IKTM) and participatory observation activities. All participants provided informed consent prior to their involvement. The research was conducted in accordance with the ethical principles of the relevant institutional ethics university. Participants' identities are disclosed only where explicit consent was granted for named attribution within the documentary and academic publication.

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REFERENCES

- Ahn, C. (2022). Documentary genre in environmental education. In *Oxford Research Encyclopedia of Education*. Oxford University Press. <https://doi.org/10.1093/acrefore/9780190264093.013.1822>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>

- Brown, L. M., Haun, J. N., & Peterson, L. (2014). A proposed disaster literacy model. *Disaster Medicine and Public Health Preparedness*, 8(3), 267–275. <https://doi.org/10.1017/dmp.2014.43>
- Coghlan, D. (2023). Action research as the social science of change and changing. In *Handbook of Research Methods in Organizational Change* (pp. 19–46). Edward Elgar Publishing. <https://doi.org/10.4337/9781800378520.00012>
- Davis, K., Minckas, N., Bond, V., Clark, C. J., Colbourn, T., Drabble, S. J., Hesketh, T., Hill, Z., Morrison, J., Mweemba, O., Osrin, D., Prost, A., Seeley, J., Shahmanesh, M., Spindler, E. J., Stern, E., Turner, K. M., & Mannell, J. (2019). Beyond interviews and focus groups: A framework for integrating innovative qualitative methods into randomised controlled trials of complex public health interventions. *Trials*, 20(1), 329. <https://doi.org/10.1186/s13063-019-3439-8>
- Dede, M., Kusumaningsih, S. N., Widiawaty, M. A., Nandhita, N. G. A., Wahyuni, S., Khosihan, A., Utami, N. F., Wulandari, P., Setiadi, E. M., & Ismail, A. (2024). Disaster, environment and local indigenous knowledge in Indonesia. *E3S Web of Conferences*, 600, 02001. <https://doi.org/10.1051/e3sconf/202460002001>
- Dhobi, S. (2023). Social research methods and methodologies. *Patan Prospective Journal*, 3(2), 168–174. <https://doi.org/10.3126/ppj.v3i2.66187>
- Hidayat, Z., & Yatminiwati, M. (2023). The role of local wisdom-based disaster education and training through education levels in disaster-prone areas. *International Journal of Accounting and Management Research*, 4(1), 1–8. <https://doi.org/10.30741/ijamr.v4i1.991>
- Honjo, Y. (2021). Lessons from the Great Hanshin-Awaji Earthquake in Terms of “Build Back Better.” In *Build Back Better* (pp. 99–112). https://doi.org/10.1007/978-981-16-5979-9_6
- Imperiale, A. J., & Vanclay, F. (2021). Conceptualizing community resilience and the social dimensions of risk to overcome barriers to disaster risk reduction and sustainable development. *Sustainable Development*, 29(5), 891–905. <https://doi.org/10.1002/sd.2182>
- InaRISK. (2026). *Indeks risiko bencana Indonesia*. Inarisk.Bnpb.Go.Id. <https://inarisk.bnpb.go.id/>
- Labov, W., & Waletzky, J. (1997). Narrative analysis: Oral versions of personal experience1. *Journal of Narrative and Life History*, 7(1–4), 3–38. <https://doi.org/10.1075/jnlh.7.02nar>
- Maria. (2018). Local wisdom of indigenous society in managing their customary land: A comparative study on tribes in Indonesia. *E3S Web of Conferences*, 52, 00023. <https://doi.org/10.1051/e3sconf/20185200023>
- Mezirow, J. (2018). Transformative learning theory. In *Contemporary Theories of Learning* (pp. 114–128). Routledge. <https://doi.org/10.4324/9781315147277-8>
- Mulia, L. A., & Sitepu, P. D. (2024). The application of narrative elements in explaining the premise of documentary film “Perayaan Detik Mengiringi Detak.” *Proceedings of the International Moving Image Cultures Conference (IMOVICCON 2023)*, 123–135. https://doi.org/10.2991/978-94-6463-390-0_13
- Nichols, B. (2001). *Introduction to documentary*. Indiana University Press.
- Nichols, B. (2024). *Introduction to documentary*. Indiana University Press.
- Pennisi, S., Lathrop, A., & Pilato, K. A. (2024). How can practitioner action research support the design, implementation, and evaluation of on-campus mental health and addiction services? *Educational Action Research*, 32(4), 622–640. <https://doi.org/10.1080/09650792.2023.2229402>
- Putri, A. A., Nurjihan, F., Tarigan, R. C. B. B., & Febriana, I. (2024). Pengembangan teks laporan penelitian dalam penyusunan historiografi sejarah. *Kohesi: Jurnal Pendidikan Bahasa Dan Sastra Indonesia*, 5(1), 15–28. <https://doi.org/10.57094/kohesi.v5i1.1653>

- Ramadhani, N. P., Fahmi, A. N., & Nurhayati, A. (2024). Nilai kearifan lokal dalam tradisi kelahiran anak pada masyarakat adat Tamansari Wuluhan. *JIIPSI: Jurnal Ilmiah Ilmu Pengetahuan Sosial Indonesia*, 4(1), 32–41. <https://doi.org/10.21154/jiipsi.v4i1.2846>
- Ririnisahawaitun, R., Yuliyanti, S., Farlina, B. F., & Junardi, H. (2022). Pengaruh story telling tentang kesiapan menghadapi bencana gempa bumi terhadap self efficacy anak prasekolah. *Coping: Community of Publishing in Nursing*, 10(2), 123. <https://doi.org/10.24843/coping.2022.v10.i02.p01>
- Rosfiantika, E. (2022). *Pengembangan kapasitas organisasi pengurangan risiko bencana berbasis komunitas di Kecamatan Lembang Kabupaten Bandung Barat*.
- Rosyida, A., Aziz, M., Firmansyah, Y., Setiawan, T., Pangesti, K. P., & Kakanur, F. (2023). *Buku data bencana Indonesia 2023*. BNPB.
- Rouch, J. (2009). The camera and man. In *Principles of Visual Anthropology* (pp. 77–98). Walter de Gruyter. <https://doi.org/10.1515/9783110221138.77>
- Rozi, S., Ritonga, A. R., & Januar, J. (2021). ‘Local community-based disaster management’ The transformation of religious and local wisdom values in preparation to deal with natural hazards in West Sumatra, Indonesia. *Jàmbá - Journal of Disaster Risk Studies*, 13(1). <https://doi.org/10.4102/jamba.v13i1.1020>
- Setiawati, E., Rizal, M. S., & Budiarti, N. A. (2022). Dewi Kilisuci Figure; disaster mitigation in the ecofeminism perspective. *Humaniora*, 13(3), 197–203. <https://doi.org/10.21512/humaniora.v13i3.7902>
- Shiwaku, K., Ueda, Y., Oikawa, Y., & Shaw, R. (2016). School disaster resilience assessment in the affected areas of 2011 East Japan earthquake and tsunami. *Natural Hazards*, 82(1), 333–365. <https://doi.org/10.1007/s11069-016-2204-5>
- Simanjuntak, A. S. H., & Chintia, Y. (2022). Local wisdom untuk solusi masyarakat global. *Jurnal Riset Rumpun Ilmu Sosial, Politik Dan Humaniora*, 1(2), 72–77. <https://doi.org/10.55606/jurrish.v1i2.151>
- Solikhah, M. R. (2023). Pendekatan sejarah dalam penelitian pendidikan. *Ta’limDiniyah: Jurnal Pendidikan Agama Islam (Journal of Islamic Education Studies)*, 3(2), 79–102. <https://doi.org/10.53515/tdjpai.v3i2.63>
- Suherman, A., Ma’mun, T. N., Darsa, U. A., & Ikhwan, I. (2021). The values of local wisdom in Wawacan Pandita Sawang Manuscripts. *LOKABASA*, 12(2), 233–243. <https://doi.org/10.17509/jlb.v12i2.40613>
- Supendi, P., Nugraha, A. D., Puspito, N. T., Widiyantoro, S., & Daryono, D. (2018). Identification of active faults in West Java, Indonesia, based on earthquake hypocenter determination, relocation, and focal mechanism analysis. *Geoscience Letters*, 5(1), 31. <https://doi.org/10.1186/s40562-018-0130-y>
- Usman, J., Syabuddin, S., Gunawan, G., Sulaiman, S., & Fauzan, F. (2020). Revitalizing local wisdoms for dealing with the disruption era: A case of Aceh. *Proceedings of the Proceedings of the 19th Annual International Conference on Islamic Studies, AICIS 2019, 1-4 October 2019, Jakarta, Indonesia*. <https://doi.org/10.4108/eai.1-10-2019.2291701>
- White, T. (2021). Interactive and immersive documentary methods for community resilience & disaster reduction. *Photographies*, 14(1), 95–107. <https://doi.org/10.1080/17540763.2020.1847177>
- Widowati, W. (2022). Upaya meningkatkan kompetensi guru dalam menyusun RPP melalui supervisi akademik dengan teknik pertemuan individual di sekolah dasar. *Jurnal Pendidikan Dasar*, 10(1), 73–79. <https://doi.org/10.20961/jpd.v10i1.64412>