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Emergency Training in Non-University Education: Geographical Literacy and Preventive Culture in Spain's Civil Protection Training Plan

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Received: 29 June 2026; Revised: 16 October 2026; Accepted: 10 November 2026; Available online: 18 November 2026

ABSTRACT: Spain's Civil Protection Emergency Training Plan makes annual emergency education compulsory in non-university institutions regulated by Spain's Education Act. This paper examines the policy design through a qualitative documentary analysis centred on the published national agreement, with geographical literacy as an interpretive framework. A traceable matrix distinguishes explicit provisions, matters left to implementation, and outcomes that cannot be inferred from documents. The Plan establishes common minimum training, risk-map-based contextualization, prior training for instructors, and inclusive methodologies. Its national agreement does not specify common student-performance rubrics or a school-level educational continuity protocol; these are design questions rather than evidence of implementation failure. Focused comparisons with Japan and New Zealand identify ways of linking curriculum, school organization, and community participation without ranking national effectiveness. The study contributes a traceable policy-design analysis of the Spanish mandate, linking geographical literacy to proposed preparedness tasks. Eight proposals and evaluation indicators are offered for subsequent testing. The analysis does not establish whether the Plan has improved learning, reduced territorial inequalities, or strengthened school resilience.

Keywords: Geographical literacy; Emergency education; Disaster risk reduction; Civil protection; School safety; Educational institutions

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1. Introduction

The frequent occurrence of environmental, technological, and social hazards has turned school safety into a first-order educational issue. Emergencies can no longer be interpreted as training external to the official curriculum, reserved for administrative protocols or occasional drills. Floods, forest fires, extreme heat episodes, storms, technological accidents, *etc.*, affect the daily life of educational communities and show that the school is simultaneously an exposed space, a place of protection, and an institution capable of producing a preventive culture [1]. Under this premise, the Civil Protection Emergency Training Plan for non-university educational institutions approved in Spain in 2025 [2] offers a case of special analytical interest for educational research.

The Plan emerged after the catastrophic floods associated with the cut-off low of 29 October 2024 and the subsequent regulatory reform that made emergency training compulsory in non-university institutions [3,4]. The agreement adopted by the Sectoral Conference on Education on 12 June 2025, published in the Official State Gazette on 23 October 2025 through the Resolution of 20 October 2025 [5], covers public and private institutions providing education regulated by Organic Law 2/2006. It requires planning to begin in the 2025–2026 academic year and establishes annual minimum training of at least two hours in Early Childhood and Primary Education and at least four hours in the remaining non-university stages. Specific hazards may be distributed across school years according to applicable risk maps. The Ministry's announcement identifies potential access to the materials for around 25,000 institutions, more than eight million students and nearly 800,000 teachers [6]; these are announced access figures, not verified participation results.

The LOMLOE (Organic Law 3/2020), amending the Education Act, supplies a broader educational basis through sustainability, ecological transition and climate education [7]. It should be distinguished from the specific emergency-training mandate in Article 10.6 of Law 17/2015, introduced by final provision four of Royal Decree-Law 7/2024 of 11 November [4]. Spain's 2024 National Civil Protection Strategy also connects preventive habits with education [8]. The Plan therefore joins an existing policy trajectory while specifying a common requirement for non-university institutions.

The relevance of the case does not lie only in its regulatory novelty. Its main interest lies in the possibility of analysing how a national education system translates disaster risk reduction into materials, learning objectives, methodologies and institutional responsibilities. At the international level, for example, the Sendai Framework for Disaster Risk Reduction (2015–2030) [9] emphasizes the need to understand risk, strengthen governance, invest in resilience, and improve preparedness to respond and recover better. For its part, the Comprehensive School Safety Framework (2022–2030) states that school safety should encompass the protection of students and staff, educational continuity, risk reduction and learning for resilience [10]. The Spanish Plan can therefore be read as a national response to a global agenda calling for risk-informed education systems.

This paper proposes interpreting the Plan through the concept of geographical literacy. This choice does not imply reducing emergency education to a specific subject; rather, it highlights that every emergency occurs in a territory, affects people and groups unequally, is communicated through maps and alerts, requires spatial decisions and demands an understanding of relationships between the physical environment, settlements, infrastructure, mobility, inequality and social memory. Geography provides tools for moving from a generic understanding of hazard to a situated reading of risk. Consequently, emergency training should not consist only of knowing what to do when an alert is issued, but also of understanding why certain places are more vulnerable, how exposure is socially constructed and how a school community can act before, during and after a critical event.

The General Objective (GO) of this paper is to analyse the Civil Protection Emergency Training Plan as an educational policy for a preventive culture, assessing its strengths, limitations and implementation

conditions. On this basis, four Specific Objectives (SOs) are proposed: (SO1) to describe the design and contents of the Plan; (SO2) to examine its alignment with international frameworks for school safety and risk reduction; (SO3) to assess the role of geographical literacy as a pedagogical guiding thread; and (SO4) to propose improvements aimed at a territorialized, inclusive and evaluable implementation.

Given the critical and reflective approach of this documentary study, the four specific objectives guide the analysis rather than separate research questions. The study does not propose a new general theory linking geographical literacy and disaster education, a relationship already examined in previous research [11,12]. Its contribution is a traceable policy-design analysis that applies that relationship to the Spanish national mandate through explicit documentary criteria and translates the resulting design questions into observable school tasks and implementation proposals. The following sections therefore distinguish what the Plan prescribes from pedagogical interpretations and hypotheses requiring field evaluation.

The authors' previous work examined geographical literacy in the Valencian regional master plan and its citizen guide [13]. The present study focuses on a distinct policy instrument: the national school-training mandate, examining its minimum requirements, educational responsibilities and assessment needs. The contribution is therefore an application to this specific mandate, rather than the introduction of geographical literacy, school mapping or preventive culture as new concepts.

2. Conceptual Framework: Risk, School and Geographical Literacy

Risk and emergency education lies at the intersection of three fields: (1) disaster risk reduction; (2) citizenship education; and (3) school safety. A hazard may originate in a physical process, but disaster risk arises through its interaction with exposure, vulnerability, and capacities. This distinction shifts attention from an exceptional event to the conditions that influence its consequences. The literature on social vulnerability shows that the effects of the same hazard are distributed unequally by age, gender, income, disability, support networks, housing, mobility, or access to reliable information [14].

In education, this perspective requires moving beyond a pedagogy focused solely on behavioural instructions. Explaining in class that one should not cross a ravine during a flood, or that during an earthquake it is advisable to shelter under a safe structure, is necessary but insufficient if students do not understand the environment in which they live, evacuation routes, meeting points, the location of flood-prone areas, the meaning of alerts, the limits of individual risk perception and the conditions that make it difficult for certain people to act [15]. For this reason, emergency education must integrate conceptual knowledge, practical skills, attitudes of co-responsibility and the capacity for contextual judgement [16].

Recent studies on risk reduction education confirm this need. Lownsbery [17] argues that the field of child and youth education for risk reduction remains fragmented, making it necessary to move towards agendas more centred on learning. Tyas et al. [18], in a systematic review of the implementation of risk reduction education, identify gaps in curricular integration, limited use of local knowledge, and the need to incorporate pedagogies more coherent with twenty-first-century competences. Other authors, such as Seddighi et al. [19], conclude, based on a review of school programmes for natural hazards, that educational interventions can improve preparedness and knowledge, but often face a lack of resources, policy gaps and insufficient teacher training.

The available evidence also points to the importance of continuity and practical experience. For example, Yildiz et al. [20], through a quasi-experimental longitudinal study with schoolchildren in Turkey, examined changes in risk perception and preparedness following disaster education. Such studies provide a rationale for sustained, contextualized learning [21], but they do not establish a minimum effective number of teaching hours for the Spanish Plan.

Geographical literacy offers a particularly useful and interesting framework for this progression. The term can be understood as the capacity to think spatially, interpret relationships between society and the environment, use geographical representations and make informed decisions about territorial problems [3].

In the field of emergencies, this literacy makes it possible to connect local and global scales, since a student can analyse why a specific street floods, how the urbanization of a basin influences risk, what role alert systems play, why certain neighbourhoods have less recovery capacity, and how climate change modifies probabilities and intensities.

Several studies have highlighted this contribution. Gong et al. [11], for example, state that school geography can serve as a carrier discipline for risk reduction education because it integrates physical and human processes and enables dimensions of knowledge, response, action, participation, and curricular integration to be addressed. Other authors, such as Kamil et al. [12], show that geographical literacy can improve disaster knowledge among secondary school students. Meadows [22] argues that geographical education has a distinctive advantage for understanding global environmental challenges holistically.

Nevertheless, geographical literacy should not be confused with a rigid disciplinary transfer (Figure 1). In this regard, schools need interdisciplinary approaches: natural sciences to understand physical processes; social sciences to analyse vulnerability and community organization; physical education to practise safe movement; tutoring to work on emotional support; language to interpret messages and combat disinformation; technology to read alerts and data; and values education to address solidarity and inclusion. Geography functions here as an articulating axis, its role being to situate learning in specific places and to show that emergencies are territorial, relational and political phenomena.

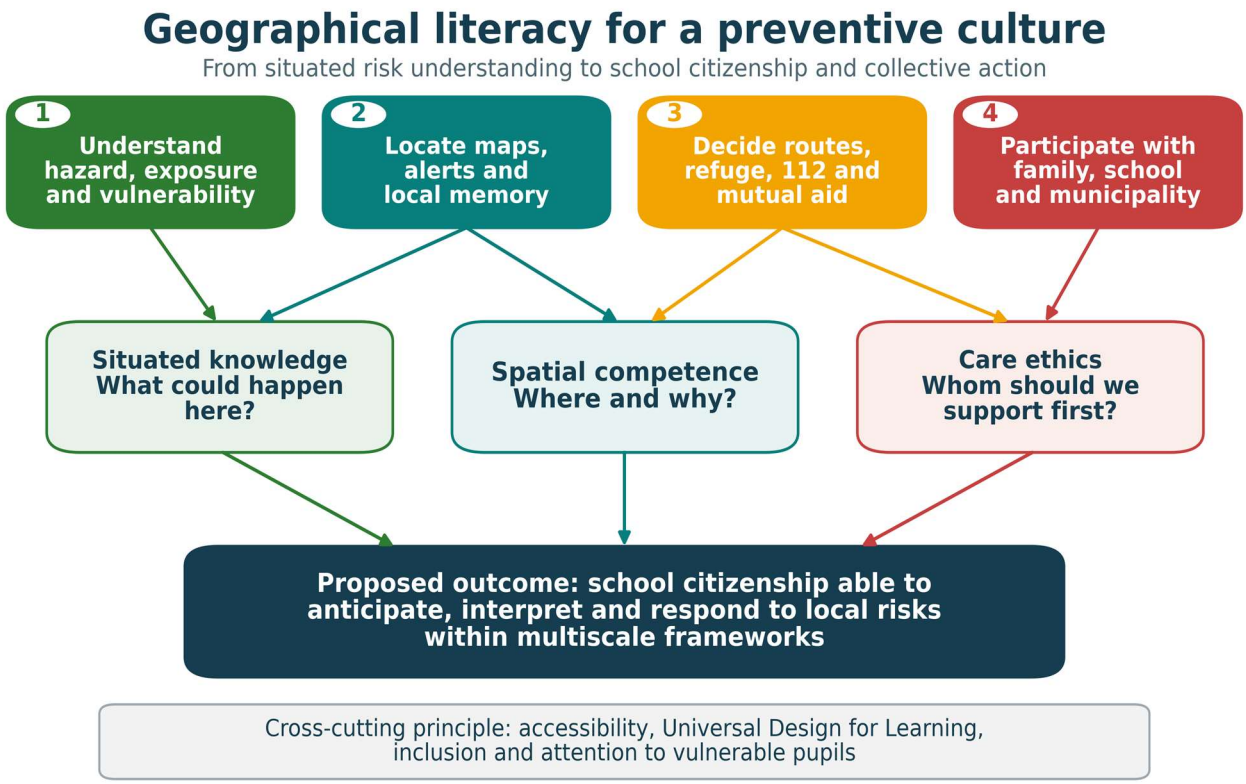


Figure 1. Conceptual framework of geographical literacy for a preventive culture. The framework connects four learning actions with situated knowledge, spatial competence and care ethics, with spatially informed school citizenship as a proposed outcome. The arrows represent conceptual relationships, not measured causal effects; 112 is the emergency telephone number, and Universal Design for Learning is written in full in the figure. Source: GADRRRES [10], Gong et al. [11] and United Nations [9]; own elaboration.

The international agenda reinforces this orientation. The Sendai Framework emphasizes that understanding disaster risk is a prior condition for effective action [9]. The comprehensive school safety framework proposes an all-hazards approach, with objectives to protect the educational community, plan for continuity, and promote knowledge and skills for resilience [10]. UNESCO [23,24], in relation to climate

education, states that curricula should be action-oriented, scientifically rigorous, holistic, and connected to school and community life [23,24]. The UNICEF report should also be highlighted [1], as it estimates that at least 242 million students experienced school disruptions related to climate events in 2024 [1].

With these premises, a preventive culture can be defined as shared knowledge, habits, values, and institutional practices that support collective anticipation, risk reduction, and response. In their analysis of disaster risk management and civil protection in Spain, Pastrana Huguet et al. [25] link its development to sustained interaction among institutions, education, and citizens. Morote and Olcina's review of Spanish geography education [21] further places natural-risk teaching within an established educational research trajectory. In schools, prevention therefore involves more than distributing advice or possessing an evacuation plan: it requires opportunities to interpret local risk, rehearse decisions, identify barriers to participation and review practice. A document may prescribe these opportunities; whether they become shared routines requires observation of implementation.

3. Materials and Methods

This is a qualitative documentary case study of policy design, not an impact evaluation or a systematic literature review. The focal primary document is the national agreement published in BOE-A-2025-21354 [5], including its nine sections and minimum-content annex. Its full text is used to examine the mandate, responsibilities, training requirements, territorial adaptation, inclusion and monitoring. No classroom observations, interviews, participation records, student assessments or regional implementation datasets are analysed.

Sources are selected purposively by their function in the analysis (Table 1). Inclusion requires a direct role in establishing the Spanish mandate, identifying its official resource structure, specifying an international school-safety criterion, or supporting a stated pedagogical interpretation. The Spanish legal context includes education and civil-protection provisions [4,7,8]. International frameworks [9,10] supply normative comparators, while selected official policies from Japan and New Zealand support the focused comparison in Section 4.4 [26–30]. These country cases illustrate contrasting organizational arrangements; they are not a representative international sample.

The Plan portal and guide catalogue [2,31] provide the descriptive inventory of ten thematic guides. This inventory is not treated as a separate sample overlapping the regulatory sources, nor as a systematic content analysis of every age, language or downloadable guide variant. Academic literature is used to justify interpretations and proposals, with preference for relevant reviews, primary studies, and work addressing Spain. No exhaustive search, bibliometric coverage, screening flow or numerical quality score is claimed.

The unit of analysis is a provision or identifiable section of the national agreement. Extraction records the source locator, the explicit requirement, and its scope. The framework uses seven dimensions: risk understanding and territorial adaptation; multi-hazard coverage and training time; governance and prior instructor training; inclusion; participation; monitoring and learning assessment; and educational continuity. These dimensions derive from the study objectives and the Sendai and Comprehensive School Safety frameworks [9,10]. They organize the evidence rather than constitute a validated measurement scale.

Analysis proceeds from extracting provisions to comparing their scope with the framework and then formulating pedagogical implications. Table 2 retains the source locator alongside each interpretation. An explicit provision is distinguished from an implementation-dependent requirement and from a matter not specified in the national agreement. The latter classification means only that the focal document does not operationalize that matter; it does not demonstrate absence from regional rules, school practice, or every guide. Recommendations in Section 5 are identified as proposals. No independent double coding or inter-rater reliability statistic is reported. The matrix makes the textual basis inspectable, while interpretation remains qualitative and potentially contestable. The documentary and bibliographic checks were completed on 19 October 2026; the governing Spanish legal references and the official announcement of potential access to materials were rechecked on 21 October 2026.

Table 1. Source groups and their roles in the documentary analysis.

Source Group	Documents and Scope	Analytical Role
Spanish legal sources	National agreement [5]; education and civil-protection framework [4,7,8].	Direct extraction from the agreement; legal context for its mandate.
Official resources	Plan portal and ten thematic guides [2,31].	Descriptive inventory; no exhaustive coding of all guide variants.
International sources	Sendai [9]; CSSF [10]; selected Japanese and New Zealand sources [26–30]; UNESCO [23,24]; UNICEF [1].	Normative criteria and focused policy comparison; contextual background.
Academic literature	Reviews and primary studies on disaster education, geographical literacy, vulnerability and preventive culture.	Support interpretations and proposals; no claim of systematic coverage.

Source: own elaboration.

Table 2. Documentary evidence and limits of inference for the national agreement.

Dimension	Evidence in the Agreement [5]	Documentary Interpretation	Limit of Inference
Risk and territory	sections 6.1 and 6.3: hazard priorities and complementary training refer to applicable risk maps.	Territorial adaptation is explicitly provided for.	School-level map use and quality are not measured.
Hazards and time	sections 6.1 and 6.2 and content annex: at least 2 or 4 h annually; common topics and specific hazards.	The duration is a floor, not a ceiling; specific hazards can be distributed.	No effective time threshold or learning gain can be inferred.
Governance and training	sections 4, 5.1, 5.3 and 5.4: administration-led timetable; mixed instructors; prior training and continuing-education provision.	Responsibilities and a training route are specified.	Coverage, competence and regional resource differences need data.
Inclusion	sections 2.3, 7.2 and 8.3: disability, vulnerable groups, inclusive measures and UDL.	Inclusion is an explicit design commitment.	Accessibility in activities and outcomes is not verified.
Participation	sections 2.2(g) and 7.1: educational-community participation and active student learning.	Participation is prescribed; co-design is a possible operational extension.	Frequency and influence of participation require observation.
Assessment	section 9: inspection and ministerial reporting on execution.	Monitoring is required; common performance tasks and rubrics are not specified here.	No conclusion about assessment in every region or school.
Continuity	section 7.1 mentions recovery and resilience skills; compare CSSF Pillar 2 [10].	No school-level education-continuity protocol is specified in this agreement.	This does not show that schools lack other continuity plans.

Source: own elaboration.

4. Results: Documented Provisions and Implementation Questions

4.1. Design, Contents and Pedagogical Logic

The Civil Protection Emergency Training Plan is presented as a structural response to the need to train the educational community for emergencies of natural and human origin. Its declared purpose is to promote a culture of prevention, self-protection and appropriate response, with particular attention to safe, resilient and inclusive school environments [2]. The most significant element is its compulsory nature for public and private institutions providing non-university education regulated by Organic Law 2/2006 [5].

The national agreement combines common minimum content with territorial adaptation (Table 2). section 6.1 allows specific hazards to be distributed across school years according to applicable risk maps, while section 6.3 permits complementary training based on national and autonomous-community maps.

Thus, territorialization is already recognized in the design [5]. The analytical question is how these provisions can become learning tasks that address the institution's surroundings and different groups' exposure, rather than whether the Plan acknowledges geographical diversity.

The official resource catalogue is organized around ten thematic guides [2,31]. The first addresses prevention, self-protection, alerts, calling 112, and information versus disinformation; the second concerns environmental risks and large gatherings. Guides three to eight cover floods and coastal risks; earthquakes, seaquakes and tsunamis; volcanic risk; adverse weather; forest fires; and technological risks. The ninth addresses emotional support and the tenth families. The catalogue groups resources by educational level. This descriptive inventory identifies the scope of the materials; it does not establish their classroom use or learning effects.

The inclusion of emotional and family support should also be highlighted. Emergency education is often reduced to technical procedures: how to evacuate, where to take shelter, whom to call. However, emergencies produce fear, uncertainty, rumours, loss, and communication conflicts. Incorporating the emotional component makes it possible to recognize that preparedness is not only cognitive, but also affective and social. Similarly, the guide for families broadens the unit of intervention, since students do not act in the abstract, but within households, neighbourhoods and care networks. This orientation is close to the tradition that understands children and young people not only as recipients of protection, but also as agents capable of transferring learning to their families and communities [32,33].

The Plan also incorporates an active methodological logic, since it refers to collaborative learning, active participation, individual and collective protection, life skills, empathy, emotional intelligence, inclusion and Universal Design for Learning [2]. These principles suit a field in which meaningful learning requires practice, deliberation, and contextualization. A student may memorize what a red warning is, but will only understand its scope if he or she works with local examples, interprets consequences for different people, analyses routes and rehearses decisions.

The Plan specifies a mixed delivery model involving emergency services, local or regional Civil Protection, volunteers and teachers section 5.1, [5]. Section 5.3 [5] assigns the National School of Civil Protection, in collaboration with educational training services and, where appropriate, regional schools, the provision of prior training for these instructors; volunteers must pass the required course. Section 5.4 [5] also permits educational administrations to include emergency-specific provision in continuing teacher education. The School's wider function in specialized civil-protection training is established in Article 32 of Law 17/2015 [4]. These are explicit capacity-building provisions, although the national agreement itself supplies no participation or competence results.

From a curricular point of view, the Plan offers a powerful basis for working on transversal competences. Calling 112 involves clear communication; identifying reliable information connects with digital and media competence; analysing environmental risks requires geographical observation; drills incorporate bodily and spatial coordination; emotional support is linked to coexistence and well-being; and the family guide opens up spaces for Service-Learning (SL). If implemented ambitiously, the Plan can articulate interdisciplinary learning situations in which students investigate their environment, draw up risk maps, design preventive messages, compare protocols and propose improvements for their institution.

4.2. Design Strengths

The first strength is the common national mandate. Its compulsory scope provides a legal basis for universal access to minimum training [5]. This is a design feature, not evidence that all institutions have participated or that differences in preparedness have narrowed. Its comparative interest lies in the attempt to connect a national requirement with decentralized educational delivery.

The second strength is its multi-hazard approach. The Plan is not limited to a dominant hazard; it includes natural and technological threats, situations involving large human gatherings, and information,

disinformation, and emotional support. This breadth is consistent with international all-risk and all-hazard frameworks. It also prevents the curriculum from being conditioned by the most recent disaster. However, the multi-hazard approach requires territorial prioritization. A broad catalogue can become diluted if all risks receive the same treatment in all institutions. The key is not to teach everything in the same depth, but to teach a common framework and explore in greater depth the risks most relevant to each school community.

The third is the open availability of materials. The official portal provides didactic resources organized by level and available in different languages. This openness favours implementation, can reduce material-preparation demands and allows teachers, families and administrations to share a common basis. In addition, the existence of specific guides facilitates a gradual entry point for institutions with no previous experience. However, the availability of materials is not equivalent to pedagogical capacity. An open resource may be underused if teachers do not have the time, training, and support needed to adapt it to their classroom context.

A fourth strength is the explicit introduction of inclusion. The resolution and the guides mention disability, vulnerable students, and Universal Design for Learning (UDL). This emphasis is essential because emergencies do not affect everyone in the same way. For example, a drill that does not take into account reduced mobility, hearing difficulties, language barriers, anxiety, dependence on medication, or family responsibilities may leave support needs unaddressed. Inclusion must therefore be translated into specific protocols, accessible materials, understandable signage, support roles and the participation of those who know students' needs. Otherwise, the reference to inclusion risks remaining a rhetorical principle.

Articulation with Civil Protection and emergency services provides a route to connect educational practice with specialist knowledge. The Plan also includes teachers among instructors and provides for prior training [5]. Reviews and studies of disaster education support attention to curricular integration, practical learning and school-community relationships [19,34], without permitting a universal causal ranking of delivery models. Japan offers a relevant example of integrating disaster education with school safety planning and community cooperation; Section 4.4 develops this comparison.

4.3. Design Limits and Hypotheses for Implementation

The annual minimum of two or four hours is a documented requirement, not a maximum (section 6.2 of [5]). It therefore cannot establish the total time devoted to emergency learning or demonstrate that the programme is insufficient. A testable implementation question is whether institutions connect this minimum with curricular activities, tutoring and practical exercises. Evaluations would need to record actual exposure and learning outcomes before drawing conclusions about the adequacy of training time [35].

Territorial inequality is likewise an implementation hypothesis. The national agreement leaves the timetable to competent educational administrations, taking account of context and resources (section 4 of [5]), but this study contains no regional allocation or school-participation data. Comparative research should examine whether access to instructors, adapted materials and repeated practice varies between territories, and whether differentiated support narrows those differences. The existence or direction of an inequality cannot be inferred from administrative decentralization alone.

A directly identifiable design limit concerns learning assessment. Section 9 establishes ordinary educational inspection and ministerial reporting, including statistical information on execution [5], but does not set out common student-performance tasks or attainment rubrics. This distinction between administrative monitoring and learning evaluation underpins the proposed indicators. It does not mean that regional authorities or individual institutions lack assessment instruments.

The agreement already provides for risk-map-based prioritization (sections 6.1 and 6.3 of [5]). The remaining pedagogical question is whether learners use maps to relate hazards to routes, exposure, accessibility and response options. Failure to do so would be a possible weakness to investigate, not a documented result of this study. Geographical literacy supplies a way to specify these observable tasks:

locating a flood-prone route, explaining why it is exposed and justifying an alternative with official information [11,12].

Emotional support is part of the minimum-content annex and the guide inventory [5,31]. A question for subsequent observation is how teachers balance risk awareness, emotional safety, and a sense of capacity to act. This analysis does not measure anxiety or attribute psychological effects to the materials. Age-appropriate scenarios and opportunities to ask for help are proposed as safeguards when translating the mandate into teaching.

Information versus disinformation is also an explicit minimum content ([5], annex, item 1). Its inclusion provides a basis for media-literacy tasks, such as checking the source, date, and territorial coverage of an alert. The study proposes assessing these tasks directly; it cannot establish from their mention in the agreement that learners can perform them during an emergency.

Section 7.1 explicitly promotes active student participation [5], so the Plan should not be characterized as treating students solely as passive recipients. Research on children, families and disasters [32,33] suggests ways of extending that provision into co-production: reviewing accessible routes, contributing to communication materials and discussing drill feedback. The extent to which such participation occurs remains an empirical question.

Finally, the agreement mentions recovery and resilience skills in section 7.1 [5], but it does not specify a school-level protocol for maintaining education during closure, transport disruption, or loss of access to learning resources. The Comprehensive School Safety Framework treats educational continuity as a distinct management responsibility ([10], Pillar 2). The inference is therefore a difference in documentary scope, not proof that Spanish institutions lack continuity plans.

4.4. Focused Comparison with Japan and New Zealand

Japan illustrates integration across curriculum and school organization. Official MEXT guidance links school safety plans and crisis-management manuals with cross-curricular safety education adapted to local conditions, including safety mapping, practical exercises and cooperation with families and communities [26]. Kitagawa's historical analysis distinguishes subject-based learning about disaster processes from practical guidance through school activities, while documenting difficulties in consistently combining them [27]. This is an institutional pathway relevant to Spain, not evidence of uniform Japanese practice or superior outcomes.

New Zealand offers a complementary resource-led approach. The National Emergency Management Agency's What's the Plan, Stan? provides adaptable, curriculum-linked learning for Years 1–8 [28]. Its teacher guidance connects local hazards, mapping, community knowledge and practical preparation across learning areas [29]. A national study of an earlier version, using 2011 focus groups and a 2012 school survey, identified whole-school use as facilitating uptake and lack of awareness and perceived training needs as barriers [30]. These historical findings concern implementation of a resource, not current national learning outcomes.

The comparison concerns three shared questions: the institutional entry point, the connection between curriculum and local practice, and the support needed for uptake. Japan illustrates links between learning and safety management; New Zealand illustrates adaptable teaching support and the conditions for its implementation. Spain's compulsory annual minimum offers a different entry point. A transferable proposal is to connect that minimum with designated school responsibilities, local learning tasks and support for instructors. Adaptation must account for Spain's devolved education system and hazard profiles; the sources do not permit a causal ranking of national effectiveness.

5. Discussion and Proposals

The principal interpretive issue is how territorial understanding could influence preparedness. Previous research already connects geographical literacy with disaster learning [11,12]; the present contribution is a traceable policy-design analysis of the Spanish mandate. Three proposed mechanisms can be distinguished: spatial interpretation makes generic warnings relevant to a learner's route and surroundings; analysis of exposure and vulnerability reveals why the same instruction may be difficult for different people to follow; and participatory mapping can make local knowledge available for collective planning [36,37]. These mechanisms require curricular practice and organizational capacity. They are plausible pathways to investigate, not effects established by this documentary analysis.

For example, a school flood exercise could require students to locate their usual access route on an official hazard map, identify an accessibility barrier, and explain a safer option under an authorized scenario. An assessment would distinguish accurate map reading from a justified decision and check whether staff incorporate the identified barrier into planning. This connects geographical knowledge with an observable task and a possible organizational response. Improvements in a classroom task would still not establish safer behaviour in a real event. Figure 2 represents the proposed implementation cycle; Table 3 summarizes the eight proposals.

The first proposal is to make the Plan's existing territorial provisions operational at school level. Each institution could prepare a risk diagnosis using official cartography, consultation with municipal civil protection, and age-appropriate observation. Participatory mapping can connect expert and community knowledge [36], while reviews of local and scientific knowledge identify integration processes without establishing uniform preparedness effects [37]. Maps should therefore be checked by competent services before informing protocols. The diagnosis should identify exposure, routes, and accessibility barriers rather than ask students to enter hazardous areas or devise unauthorized emergency instructions.

Table 3. Summary of implementation proposals and suggested verification.

Proposal	Suggested School Action	Proposed Lead and Support	Suggested Verification
Local diagnosis	Translate applicable risk maps into a school risk and accessibility map.	School team with municipal civil protection.	Dated map checked against official information.
Curriculum	Link a local risk scenario to interdisciplinary learning tasks.	Teachers and curriculum coordinators.	Task products and students' reasoned decisions.
Student participation	Invite accessible contributions to drill review and verified messages.	Teachers and student representatives.	Documented contributions and follow-up actions.
Instructor preparation	Connect prior training with practical design and assessment tasks.	ENPC, educational training services and schools.	Training records and reviewed activity plans.
Community coordination	Agree communication channels and an annual activity calendar.	School leadership, families and local services.	Calendar, responsibilities and accessible messages.
Evaluation	Pilot performance rubrics alongside administrative monitoring.	Teachers with educational administrations.	Baseline and follow-up tasks; inclusion checks.
Educational continuity	Connect learning to plans for closure, access, and safe return.	School leadership and competent authorities.	Scenario review and identified support needs.
Emotional care	Use age-appropriate scenarios and adapt participation when needed.	Teachers and relevant support professionals.	Feedback on understanding, participation and distress.

Source: own elaboration. These proposals have not been tested as part of this study.

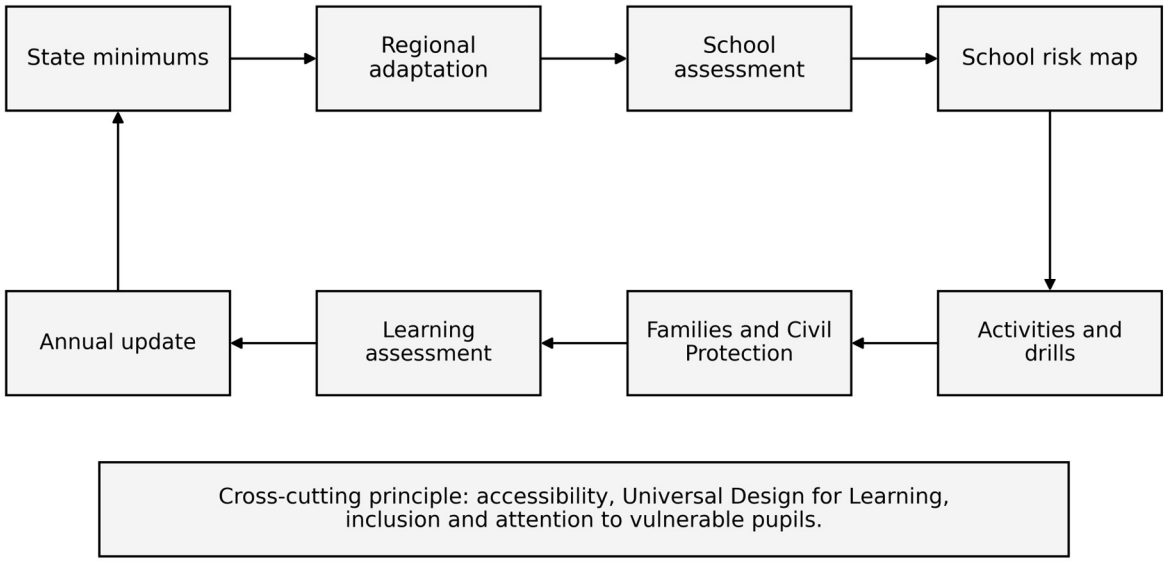


Figure 2. Proposed cycle for territorialized and evaluable implementation of the Plan. The arrows indicate the proposed sequence and feedback, not observed implementation or demonstrated effects. Universal Design for Learning is written in full in the figure. Source: own elaboration.

The second proposal is to connect the Plan's minimum content with interdisciplinary learning situations. Comparative curricular research provides examples of linking risk education with local problems and practical work [38]. In Primary Education, an activity could involve reading a weather warning and identifying a safe route using official information. Secondary students could compare a historical event with current land-use and hazard maps. Vocational Training could adapt tasks to the risks and responsibilities of each professional field. Research on proactive learning, school practice and learning theory offers grounds for designing these connections [39–41]; their effectiveness in the Spanish Plan would need evaluation.

The third proposal is to extend the Plan's explicit commitment to active participation into student contributions to preparedness. Peek [42] discusses children's vulnerabilities and capacities; Tanner [43] examines child-led responses; and Fernandez and Shaw [44] study youth participation through science clubs. These studies support considering students as contributors, while responsibilities for safety remain with competent adults and authorities. Suitable activities include reviewing drill feedback, producing verified multilingual messages, and gathering community memories of past events.

The fourth proposal is to operationalize the prior-training provision in section 5.3 and connect it with continuing professional development under section 5.4 [5]. Training could include map interpretation, inclusive scenarios, emotional support, communication, and assessment. Paci-Green et al. [45] distinguish school-safety policy commitments from implementation conditions, supporting attention to responsibilities and resources. Attendance records, completed design tasks, and school-level follow-up could be examined; this study does not diagnose teachers as unprepared.

The fifth proposal is to connect the family guide with a planned school–families–municipality relationship. Mutch [46] examines schools' community role after the New Zealand earthquakes, while Pacheco et al. [47] discuss place attachment and shared representations in children's resilience. These sources support considering schools within wider social networks, without establishing the effects of the Spanish Plan. Institutions could agree on accessible communication channels, family activities and responsibilities, and competent local services, and then examine who participates and who faces barriers.

The sixth proposal is to connect administrative monitoring with learning assessment. Johnson et al. [35,48] provide methodological grounds for examining intended outcomes, implementation and transfer. Table 4 proposes six complementary levels. These are candidate indicators, not validated instruments or

measures already applied to the Spanish Plan. Performance tasks would require age-appropriate rubrics, piloting, and attention to accessibility before use across institutions (Table 4).

Table 4. Suggested indicators for evaluating the implementation of the Plan.

Evaluation Level	Suggested Indicators	Interpretive Use
Input	Adapted materials; trained teachers; link with civil protection; initial diagnosis; updated protocols.	Checks whether the institution has the minimum conditions to implement the Plan without depending only on external agents.
Pedagogical process	Hours taught; active methodologies; school risk maps; drills; student participation; adaptation to local risks.	Makes it possible to distinguish between formal compliance and situated, practical and territorialized learning.
Learning and transfer	Interpreting alerts; map reading; identifying safe routes; calling 112; decision-making in scenarios; reliable communication.	Assesses what students know how to do and whether they can transfer it to their home and community.
Participation and agency	Products produced by students; campaigns for families; school committees; local-memory interviews; service-learning projects.	Measures whether students act as co-producers of preventive culture and not only as recipients of instructions.
Organization and continuity	Improvement of the self-protection plan; evacuation times; clarity of roles; accessibility of routes; plan for temporary closure of the institution.	Evaluates whether the Plan modifies school organization and strengthens educational continuity after an emergency.
Equity and inclusion	Adjustments for disability; linguistic accessibility; emotional supports; attention to vulnerable students; review of physical and communicative barriers.	Identifies who may be less protected and which supports need to be strengthened.

Source: GADRRRES [10], Johnson et al. [35,48] and Paci-Green et al. [45]; own elaboration. Indicators are proposed for piloting, not validated measures.

The seventh proposal is to incorporate educational continuity scenarios explicitly. The Plan focuses mainly on prevention, self-protection, and immediate response, but comprehensive school safety requires anticipating how the right to education will be maintained if the building becomes unusable, transport is interrupted, some students lose materials or connectivity, or the educational community requires subsequent psychosocial support. This dimension should not be confused with a simple replacement by remote teaching. It requires curricular prioritization, communication with families, coordination with social services, emotional care, procedures for safe return, and support for groups with lower recovery capacity. At this point, the relationship between educational continuity and inclusion should be treated as an equity criterion, not an administrative annex.

The eighth proposal is to use age-appropriate language and scenarios that combine risk awareness with emotional support. Activities should help learners identify reliable information, ask for assistance, and understand authorized protective actions. They should also allow staff to identify distress and adapt participation. The intended outcome is informed confidence; possible benefits or adverse emotional effects would need evaluation rather than assumption.

Taken together, the proposals translate existing regulatory commitments into tasks that could be examined during implementation. Their common requirement is a documented link between local risk information, learning activity and school decision-making. This framework remains to be tested for feasibility, accessibility and educational value in different stages and territories; the present study does not demonstrate that it produces resilient institutions.

6. Conclusions

The main conclusion, consistent with Gong et al. [11] on the contribution of geography to disaster education and with Pastrana Huguet et al. [25] on preventive culture in Spain, is that emergency education

can be interpreted as a continuing educational and institutional responsibility. The Spanish Plan provides a compulsory national basis, minimum annual training, territorial adaptation, prior instructor training, and inclusive participation. These documented provisions support its potential, but do not establish its effects on learning or community preparedness.

The analysis identifies alignment with international priorities in risk understanding, participation and inclusion, together with matters not operationalized in the national agreement: common student-performance rubrics and a school-level educational continuity protocol. The adequacy of actual teaching time, regional equity, and instructor preparedness remain empirical questions. The comparison with Japan and New Zealand identifies relevant arrangements for connecting learning and school organization without implying equivalent contexts or demonstrated superiority.

The specific contribution is a traceable policy-design analysis of the Spanish mandate through geographical literacy and its translation into observable preparedness tasks. Understanding a warning, locating exposure, recognizing an accessibility barrier, and justifying an authorized response are proposed intermediate learning outcomes. Connecting these outcomes to school planning offers a hypothesis about resilience, rather than evidence of a causal effect.

The eight proposals link local diagnosis, interdisciplinary learning, participation, instructor preparation, community coordination, assessment, continuity, and emotional care. They extend or operationalize provisions already present in the Plan. Their educational value will depend on testing whether institutions can implement them with available resources and whether learners can perform the intended tasks.

The study is limited to documentary design and interpretive comparison. It does not provide a systematic analysis of every guide variant, a representative country comparison, an independent coding-reliability estimate, or empirical implementation data. Absence of detail in the national agreement must not be generalized to regional policy or school practice. Future research should record actual training time, instructor preparation, accessible participation, performance tasks and continuity arrangements, and compare these across institutions and territories. Longitudinal and field-based evaluation is needed before attributing changes in preparedness to the Plan.

The policy implication is to evaluate the connection between what the national agreement requires and what school communities can demonstrate in practice. Geographical literacy offers specific tasks for that evaluation, while civil-protection expertise, educational governance and inclusive resources remain necessary conditions. The Plan's contribution to a preventive culture is a possibility to be investigated through implementation, not a result established by its approval.

Statement of the Use of Generative AI and AI-Assisted Technologies in the Writing Process

During preparation and revision of this manuscript, ChatGPT Pro 6.0 (OpenAI) was used to assist with figure preparation, English translation, literature and policy-reference checking, consistency review, and the drafting and editing of manuscript text and reviewer responses. AI assistance did not provide empirical implementation data or validate the proposed framework. The authors are responsible for the accuracy, references, and final content of the article.

Author Contributions

Conceptualization—Á.-F.M.; Methodology—Á.-F.M. and J.O.; Formal Analysis—D.L.-R. and B.M.-V.; Investigation—Á.-F.M., D.L.-R., B.M.-V. and J.J.-N.; Writing—Original Draft Preparation—Á.-F.M.; Writing—Review & Editing—J.O., A.B., D.L.-R. and B.M.-V.; Visualization—J.J.-N. and D.L.-R.; Supervision—J.O. and A.B.

Ethics Statement

Not applicable. The study is based on documentary analysis of publicly available institutional documents and academic literature and did not involve humans or animals.

Informed Consent Statement

Not applicable.

Data Availability Statement

No new empirical implementation data were collected. The focal national agreement and contextual sources are publicly available and cited. Table 2 provides the source locators and interpretations underlying the policy-design analysis; Tables 3 and 4 contain proposals rather than observed results.

Funding

This research was supported by the R&D&I project "INCLUCOM—Curricular Models and Historical-Geographical Competencies of Teachers for the Construction of Inclusive Identities" (PID2021-122519OB-I00), funded by MCIN/AEI/10.13039/501100011033/ and by FEDER—A Way of Making Europe.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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