

Systematic Integration of Disaster Risk Reduction Education for Natural Hazards into the Education System

STEAME for Saving Life (STEAME-DRREC) | Erasmus+ KA2

Central policy proposal

Formal establishment of a National Framework for Disaster Risk Reduction Education (DRRE) and School Resilience, with the gradual and systematic integration of DRRE into the existing curricula at all levels of education. The proposal does not provide for a new subject or a substantial increase in curriculum content; it draws on existing learning objectives, structures, and materials and connects teaching with school preparedness, safety, and educational continuity.

1. Purpose and policy rationale

This policy paper sets out a scientifically grounded and practicable framework of guidance for integrating DRRE into the curricula and everyday school practice in Cyprus. Its aim is to strengthen students' knowledge, skills, attitudes, and behaviours, teachers' professional preparedness, and the safety, preparedness, and resilience of the school community.

DRRE should go beyond the communication of instructions and the periodic conduct of drills. It encompasses understanding hazard, exposure, vulnerability, and coping capacity; interpreting scientific, geographical, and social information; applying protective actions; making evidence-informed decisions; and participating responsibly in the creation of safer schools and communities.

The existing gap lies in systematically connecting, in pedagogical terms, school safety provisions and preparedness drills with the objectives, content, activities, and assessment of the curricula. The proposal seeks to support the transition from fragmented initiatives to stable and institutionally supported implementation.

2. Evidence base and feasibility

The proposal is aligned with the Sendai Framework 2015–2030, the Comprehensive School Safety Framework 2022–2030, the Preparedness Union Strategy, the European Climate Risk Assessment, the Council Recommendation on learning for the green transition, and GreenComp. For Cyprus, the 2026 Eurydice report identifies a reference to preparedness in the primary education Health Education curriculum and mandatory procedures through the Civil Defence Plan and preparedness drills, but no corresponding formal requirement in initial teacher education.

STEAME for Saving Life provides evidence of feasibility from primary education: it connected DRRE concepts, curricula, authentic events, and real-world data with collaborative design, classroom implementation, feedback, and reflection. In the final evaluation ($n = 123$), 94.3% reported a clearer understanding of integration across different subjects, 91.1% an ability to identify curriculum links, 87.8% an ability to combine objectives, 86.2% an ability to design an integrated lesson, and 88.6% an ability to implement activities. Extension to other educational levels requires appropriate adaptation.

3. Guiding principles

- integration into the curriculum without increasing curriculum content, while simultaneously pursuing subject-specific and DRRE objectives
- authenticity, local relevance, and the use of valid scientific data
- experiential, inquiry-based, collaborative, context-based, or problem-solving-based learning
- inclusion, equity, accessibility, and the active participation of all students
- pedagogically sound use of technology, with non-digital or low-technology alternatives
- connecting teaching with school safety, families, and the community
- gradual implementation, evaluation, and evidence-informed revision.

4. Key elements of the proposed national framework

4.1. A common and progressively differentiated learning competency framework

A common national framework of knowledge, skills, attitudes, and behaviours should be established for each age group. At younger ages, emphasis should be placed on recognising hazards, seeking help, and applying simple protective actions; at older ages, the focus should be on inquiry, data interpretation, mapping, evaluating options, and participating in plans to improve school and community safety. The thematic areas cover the distinction among phenomenon, hazard, and disaster; exposure, vulnerability, coping capacity, and resilience; the stages from prevention to recovery; the interpretation of valid information; and responsible communication, cooperation, and solidarity.

Minimum expected level by the end of Primary Education. By the completion of Primary Education, every child should, at a basic and age-appropriate level, be able to distinguish between a natural phenomenon, a hazard, and a disaster; identify key hazards and vulnerable locations within the school and their immediate environment; interpret simple maps and warnings; take appropriate protective action; seek help; and collaborate responsibly in mapping and preparedness activities. This level should serve as a common reference point for learning design and formative assessment, rather than constituting a new standalone or examinable subject. The framework also links DRRE with climate adaptation, sustainable development, and social justice, with particular emphasis on the equitable distribution of exposure, vulnerability, resources, and capacities for protection.

4.2. Integration into the curricula and assessment

It is proposed that DRRE entry points be mapped across subject areas in which related objectives already exist, such as Science, Geography, Mathematics, Language, Health Education, Social and Civic Education, Education for Sustainable Development, Physical Education, Design and Technology, the Arts, and Digital Technologies. For each alignment, the educational level and subject objective, the DRRE objective, the locally relevant hazard context, the pedagogical approach, resources, learning product, and assessment criteria should be specified. The project's O1/A2 deliverable provides an initial evidence-based foundation and includes numerous mapping points across most of the subject areas mentioned above.

Country-specific adaptation of implementation. In Greece, DRRE may be integrated into Primary Education both cross-curricularly across individual subjects and through the Skills Workshops, with links to specific curriculum objectives. In Cyprus, corresponding integration may be achieved through the existing curricula, cross-curricular approaches, and their official implementation guidelines. In this way, a common core of learning competences and pedagogical principles is maintained, while implementation is adapted to each country's institutional and curricular context.

Assessment should be integrated into existing subject procedures through scenarios, mapping, data interpretation, problem-solving, portfolios, collaborative products, practical applications, and the justification of decisions, without an additional examination or a separate assessment system.

4.3. Connecting learning with preparedness, safety, and educational continuity

Safety plans and preparedness drills should be integrated into a complete learning cycle: preparation within subjects, investigation of local hazards and safe routes, implementation of the drill, and structured review and feedback. In this way, they acquire both protective and pedagogical value. Implementation should be age-appropriate and avoid alarmism, dramatisation, and the unwarranted creation of fear.

4.4. Student participation, inclusion, and rights

Active participation should be established in the official curriculum implementation guidelines. Specific forms of participation should be provided for, including hazard identification, hazard and safe-route maps, assessment of the accessibility of emergency procedures, production of information materials, formulation of proposals, and review of preparedness drills. Students' observations should be taken into account when school safety procedures are revised. Materials and activities should include adaptations for students with disabilities, health conditions, language difficulties, migrant or refugee backgrounds, or other needs. Following the pilot implementation, a realistic minimum framework of participatory activities may be defined for each educational level.

4.5. Initial teacher education and continuing professional learning

DRRE should be systematically integrated into existing courses in pedagogy, didactics, digital education, and school experience within initial teacher education programmes. Future teachers should be able to identify curriculum entry points, use local cases and reliable data, design age-appropriate and inclusive activities, connect teaching with school preparedness, and assess subject-specific and DRRE objectives. Practical application should be documented through a lesson plan and, where feasible, classroom implementation and reflection.

University-based micro-credential programmes. In parallel, universities may develop and offer micro-credential programmes in DRRE for in-service teachers, educational leaders, and other professionals with related responsibilities, focusing on curriculum integration, the design of learning activities, school preparedness, and the use of data and digital tools. Their development, award, and quality assurance should fall within the responsibility of universities, in accordance with the applicable institutional and regulatory framework.

4.6. Initial teacher education and continuing professional learning

Continuing professional learning should be organised as a multi-phase process rather than a fragmented seminar: conceptual and pedagogical development, collaborative design, supported classroom implementation, documentation, presentation, feedback, and reflection. In Cyprus, it can be integrated into the existing structures of the Cyprus Pedagogical Institute. It should be differentiated according to role, strengthen school leadership, and support school-based or regional communities of practice. Completion should be assessed through evidence of implementation and not solely through attendance.

Implementation should not depend on specialised facilities or expensive equipment. All schools should have basic access to a computer or portable devices, a reliable connection, presentation facilities, and simple scientific, geographical, and construction materials, as well as official maps, hazard data, warnings, and emergency plans. Accessibility, non-digital or low-cost alternatives, and targeted support for schools with greater needs should be ensured.

4.7. National repository and the effective use of resources

A user-friendly repository should be organised within an existing official educational platform, containing DRRE–curriculum alignments, differentiated lesson plans, scientifically validated sources and data, maps, local case studies, assessment tools, templates for reviewing drills, accessible and multilingual materials, and student products. Materials should be classified by educational level, subject, and hazard and reviewed for scientific validity, pedagogical and age appropriateness, accessibility, personal-data protection, and alignment with the curriculum.

Digital maps, geospatial applications, simulations, artificial intelligence, and virtual or augmented reality should be used only when they serve a clear learning objective, add pedagogical value, and meet data-protection and cybersecurity requirements. Where possible, they should be accompanied by a non-digital version. The repository should be enriched following review and updated regularly.

4.8. Institutional coordination and partnerships

Coordination can be organised through existing administrative structures or a small interdepartmental group. The Ministry sets the policy direction and coordinates; the Safety and Health Unit provides technical guidance; the Cyprus Pedagogical Institute assumes responsibility for pedagogical coordination and professional learning; the Education Directorates and curriculum teams integrate the guidance and monitor implementation; schools incorporate the activities into their planning; universities and research centres support scientific substantiation, initial teacher education, and evaluation; civil protection, rescue, health, meteorological, and geological services provide expertise and data; and local authorities connect learning with the community. Pedagogical responsibility remains with education bodies and schools.

European cooperation. European partnerships can be used to facilitate the exchange of expertise, the development and adaptation of open educational resources, collaboration among schools addressing shared risks, and the implementation of pilot or comparative initiatives.

5. Gradual implementation

- **Phase 1 – Preparation.** Definition of coordination arrangements, consolidation of existing mappings, safety policies, and resources, identification of age-specific competencies, priority hazards, the professional learning model, quality criteria, and minimum support needs, and issuance of clear guidelines.
- **Phase 2 – Pilot implementation.** Implementation for one full school year in representative schools across different educational levels, sizes, geographical areas, hazard profiles, and levels of infrastructure, including special education. It includes multi-phase professional development, implementation within existing subjects, ongoing pedagogical support, active student participation, linking drills with learning objectives, and simple data collection.
- **Phase 3 – Evaluation and expansion.** Assessment of pedagogical quality, feasibility within the available teaching time, adequacy of resources, equity of access, student participation, teacher support, and learning outcomes. Revision of the framework, guidelines, and materials before gradual national expansion and the definition of a realistic minimum framework for each educational level.

6. Monitoring, funding, and sustainability

Monitoring should be simple, supportive, and integrated into existing school planning: brief documentation of subjects and activities, use of learning products already generated as evidence, brief feedback from teachers and students, and periodic evaluation of a representative sample of schools. The results should be used to update guidelines, materials, and professional learning programmes, without additional examinations or bureaucracy.

Funding support should be incorporated as a priority into existing budgets for curricula, professional learning, educational materials, digital support, and school safety. Provision should be made for stable budget allocations, priority for reusable and low-cost solutions, targeted support for schools with greater needs, and the complementary use of national and European funding. Continuation should not depend on temporary projects, one-off purchases, or the voluntary efforts of individual teachers.

7. Proposed immediate next steps

- Defining the competent coordination structure and clarifying roles.
- Developing a common and progressively differentiated DRRE learning competency framework for all educational levels.
- Using and adapting the mappings, methodological guidance, and activities of STEAME for Saving Life.
- Integrating the applied professional learning model into existing professional development and support structures.
- Making scientifically validated, accessible, and readily usable materials officially available through an existing platform.
- Strengthening the connection between teaching and plans for preparedness, safety, and educational continuity.
- Ensuring equitable access, technical support, and the effective use of resources.
- Piloting the approach for one school year and revising it before gradual national expansion.

Intended transition

From fragmented awareness-raising activities and formal preparedness drills to a stable, inclusive, and institutionally supported dimension of everyday learning, school operations, and education policy.

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