Sismopoli, playing cities in risk

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Abstract
The limited attention given to risk management in public policy, combined with a lack of awareness among civil society, has led major international organizations to recommend innovative and effective communication strategies. These strategies aim to engage communities in the critical issues shaping our cities, foster interest in the spaces we inhabit daily, and promote a culture of prevention.

This contribution introduces Sismopoli, a serious game focused on seismic risk reduction from an urban planning perspective. The game serves as a tool to make complex issues more manageable and understandable. Its goal is to stimulate knowledge-building processes by encouraging players to view the territory as a common good, where risk reduction is a vital component and planning is the key tool for addressing priority issues in urban contexts.

Keywords: Urban planning, seismic risk awareness, serious games, board games

1. Introduction

Over the past fifty years, Italy has experienced seven major earthquakes—averaging one destructive event every seven years—compared to the national average of one seismic disaster every 4–5 years over the last 150 years (D'Agostino, 2024). This significant seismic hazard is compounded by the high vulnerability of buildings and the considerable exposure associated with Italy's dense population and long settlement history (Dolce et al., 2021; Guidoboni, 2018).

Nevertheless, few resources have been invested in proactive urban prevention policies or in awareness-raising and knowledge dissemination initiatives. As a result, risk management remains largely reactive, focusing on emergency response and reconstruction (Benigni et al., 2024; Balducci et al., 2021; Coviello et al., 2021; Fera, 2020).

The inherent uncertainty surrounding seismic phenomena and their management (Doyle et al., 2019), combined with low public risk perception and widespread gaps in relevant knowledge and skills, are key factors that hinder or delay the implementation of effective risk reduction and mitigation strategies (Crescimbene et al., 2014). Behavioral sciences highlight cognitive limitations among both public decision-makers and the general population, which obstruct political and administrative choices and divert attention from these pressing issues (Di Bucci et al., 2017; Speranza et al., 2019; UNDRR, 2022).

International organizations have strongly emphasized the importance of "understanding disasters," promoting the involvement of civil society and the adoption of both formal and non-formal educational approaches—accessible even to non-experts—to build a culture of safety and resilience at all levels, including professional training (ISDR, 2005). Seven years after the launch of the Sendai Framework (UNDRR, 2015), the 2022 Global Assessment Report on Disaster Risk Reduction further underscores the need to move away from top-down, solely scientific approaches in favor of more participatory, community-based Disaster Risk Reduction (DRR) strategies (UNDRR, 2022). Despite these global efforts, awareness of seismic risk remains limited, particularly at the community level.

In Italy, even with the two-decade experience of the Edurisk project and its significant efforts in seismic risk communication, this topic continues to struggle for attention within scientific education (Musacchio et al., 2023; Faravelli et al., 2024). Developing scientific expertise in risk management—especially in relation to urban areas and planning—is inherently complex, interdisciplinary, and multidimensional. Disasters are not merely the result of natural hazards but are also deeply rooted in human systems; studying their impacts requires examining exposure and vulnerability in urban and territorial contexts. Therefore, planning and urban policy must play a central role in defining how territories are used and transformed to reduce disaster risk.

Italy's higher education offerings in seismic risk reduction remain limited, especially outside of specialized technical fields. This gap in higher education mirrors shortcomings at the secondary school level, which in turn affects public awareness.

Engaging citizens in the core issues that shape our cities—both in everyday governance and in extraordinary contexts—can foster interest in the places we live and stimulate awareness around caring for and protecting seismically vulnerable urban areas. This process encourages a "return to the territory" in the territorialist sense, where the land is viewed as a common good (Magnaghi, 2012, 2020). Ensuring equitable access and safety becomes a fundamental right. In this light, seismic risk reduction should be seen as a collective responsibility tied to the public good, requiring integrated approaches and shared action (Di Bucci et al., 2017).

To shift societal approaches to risk, traditional training must be complemented by innovative educational and communication methodologies that allow people to imagine and reflect on potential urban futures (Hawthorn et al., 2023). Serious games—defined as games designed for purposes beyond entertainment (Abt, 1970)—can serve as effective tools to support learning about critical topics such as risk reduction (Schouten et al., 2017).

This article explores how game-based learning can support interdisciplinary education while enhancing community awareness of risk from an active citizenship perspective. We present Sismopoli, a serious game we have designed and begun testing, which focuses on seismic risk reduction in relation to urban planning. The complexity of this subject area—its scenario-based nature and the dynamics involved—makes it particularly suitable for interactive learning methods. Game mechanics allow participants to explore different scenarios, make decisions, and analyze their consequences.

To this end, the study was set up on three educational interpretative paths, both as a conceptual framework for the analysis of existing serious games, and as a guide for the development and objectives of Sismopoli: educating on i) the care of the territory, ii) the understanding of risk and iii) the promotion of community participation.

The contribution proposes a first review of the state of the educational offer related to risks in Italy and the use of serious games in the field of risk education in urban areas (Chapter 2); an analysis of existing games based on a taxonomy focused on the three key educational paths (Chapter 3); the illustration of the current version of Sismopoli declined in the proposed educational objectives (Chapter 4); the results of the initial experiments (Chapter 5); the conclusions and considerations for further developments (Chapter 6).

2. Serious game for urban seismic risk reduction

In Italy, the topic of risk reduction remains marginal in higher education courses related to urban and territorial planning. Similarly, an urban or territorial perspective is largely absent in the disciplinary fields—such as geology and engineering—where risk-related issues are typically addressed.

A lexical analysis of Italian university curricula, based on the Ministerial Decree of 16 March 2007, reveals that the terms territory and environment, when referring to spatial organization and transformation, appear in the educational objectives of degree programs in Earth Sciences, Environmental Studies, Human Geography, Engineering, Technology, and Planning. However, a closer look at the degree classes that include competencies in urban and regional planning reveals a notable absence of terms such as risk, prevention, soil defense, safety, and emergency. The term hazard is limited to programs in geological sciences, while vulnerability and exposure are not mentioned at all.

This suggests that risk reduction is still largely confined to scientific and technical domains such as geology, geotechnics, and engineering. Urban planning education, although occasionally intersecting with geological concerns, addresses them only superficially. The result is a foundational training that lacks a comprehensive understanding of the multiple dimensions of risk.

This gap extends to lower levels of education as well. A study of over 160 textbooks across 36 European countries found a general lack of content and activities aimed at raising awareness, building knowledge, or fostering sensitivity around disaster risk reduction (Komac, 2013).

To bridge this gap, it is essential to develop new tools for risk education—tools that connect disciplines, unify fragmented terminologies, and encourage interdisciplinary collaboration. In recent years, simulations, games, and interactive activities have gained traction in urban planning and governance as means of engaging communities on collective issues, stimulating reflection on the future of cities and territories, and imagining alternative scenarios.

The integration of playful elements into serious contexts—recognized by Abt (1970) as a powerful way to achieve educational goals—has significantly evolved in the past two decades, especially with the advent of new technologies (Ciziceno, 2023). The interactive nature, active engagement, and social dimension of serious games make them particularly well-suited to learning in complex domains such as socio-spatial planning (Kolb et al., 1984; McGonigal, 2011; Chow et al., 2011). Within urban and environmental disciplines, serious games have been employed to explore issues such as land use, transportation, ecological sustainability, and natural resource management (Coppard & Goodman, 1979; Ampatzidou, 2018).

Applying this approach to seismic risk reduction from an urban planning perspective reveals the potential of serious games to foster community awareness and make complex concepts more accessible.

In fact, it is possible to identify several shared characteristics between disaster risk reduction and serious games (see Fig. 1).

Fig. 1. Links between disaster risk reduction and serious game features.

1.The unpredictability of seismic events, inherent in the phenomenon's nature, and the resulting uncertainty of public decision makers in making decisions in complex urban contexts, is appropriately reflected in the typical randomness of games (e.g., random dice rolls or card draws).

2.The scenario-based approach of risk management, centered on managing and planning different options under uncertainty, can be effectively simplified through the simulation aspects of games. This experience encourages hypothetical reasoning, the evaluation of options and strategies, both in terms of potential moves and broader spatial configurations.

3.The roles of stakeholders involved in urban planning closely mirror those of the game. Public and private actors, operating at multiple levels of governance and representing civil society in discussions on complex and interdisciplinary issues, can be assimilated to players interacting in role-playing games, board games, live simulations, engaging in direct dialogue on different issues and testing their ability to collaborate.

4.The complexity of governance in urban risk reduction processes, defined by specific objectives, can be compared to game dynamics. These include abstract elements such as constraints, emotions, storylines and a sense of progression, as well as game mechanics, which include interactions between players, time and resource management and strategy development (Werbach and Hunter, 2020).

3. Three educational paths to raise community awareness

Based on research conducted by the CNR working group (Giuffrè et al. 2025), 39 serious games were analyzed that address issues related to natural risks and their management in complex environments, such as urban areas. The aim was to identify potential overlaps, shared approaches and open questions to develop new proposals that could frame urban risk reduction as a common good.

The analysis was structured around several general and specific parameters related to the three educational paths that the research aimed to explore: a) care of the territory, b) understanding of risk, c) community participation (see Fig. 2).

Fig. 2. Parameters considered to analyze the selected serious games

1) Care of the territory

The analysis investigated how games make us reflect on the concept of territory as a common good, that is, an urban space in which the community relates and recognizes itself. Educating to care for the territory means working with communities, in a material sense - protecting the resources of a specific place - and in an immaterial sense, promoting care for others and relationships that connect or facilitate communication between communities and social groups. The parameters used for the analysis of the games referred to (i) the spatial dimension, understood as the representation of buildings, functions, infrastructures and public spaces to interact with, through game boards, digital screens or abstract forms such as narratives and images, (ii) the community dimension, in which care actions of common spaces were proposed, promoting the sense of belonging to places through cooperation and decisions sharing for the protection of structures and public spaces, (iii) environmental sustainability as a collective objective, highlighting its impact on spatial quality and stimulating reflection on the challenges of management and exploitation of resources.

2) Understanding risk

The aim of this training path is to introduce the community to the concept of natural risk as an interaction between a physical phenomenon and society. This perspective frames earthquakes not only as natural events, but also as events that affect people and property, incorporating both the spatial and socio-cultural dimensions. The parameters used for the analysis took into account (i) the specific type of risk, with particular attention to seismic risk, (ii) the identification of the DRM cycle phase(s) referred to in the game, (iii) the role of the different risk factors and their interactions.

3) Community participation
The third training path is based on the idea that planning for prevention and risk reduction has a strong social and collective dimension, which cannot be separated from a process of sharing with communities (Wisner, 2006). The involvement between experts and citizens implements a process of mutual learning that not only improves knowledge, but also promotes a change in perspective and point of view (Musacchio et al., 2019). The parameters used for the analysis referred to (i) the methods of victory, whether they are linked to the achievement of common or individual objectives, (ii) the presence or absence of moments of discussion and cooperation on the choices to be made during the game, (iii) attention to social cohesion as an educational objective, promoting a culture of relationships, belonging and diversity.

The different games analysis focused on seismic risk or multi-risk, read in the light of the three training paths, shows the almost total absence of games that simultaneously satisfy all the parameters considered. In general, it can be noted that there are few cases in which explicit reference is made to the connection with urban planning and almost never all the phases of the disaster cycle are treated, giving priority only to the phases related to preparation and response; individual game modes are preferred to interactive ones, in which shared solutions are sought, and, from the point of view of the victory of the game, the individual victory prevails or, in the best of cases, mixed, to the detriment of collaborative approaches.

4. Sismopoli, the city that dares to play: scientific context, game description and goals
The topic of seismic risk reduction at the urban scale was introduced in Italy starting from the 80s, when some regional public administrations particularly attentive to these issues, started an intense technical-scientific experimentation on some smaller urban centers. On this occasion, the concept of "urban vulnerability" was introduced, overcoming the approach of mitigating the seismic risk of the single building, towards a systemic prevention perspective extended to the entire settlement; a multidimensional concept influenced by the characteristics of the building, the functional systems (Fiore et al., 2018; Anastassiadis et al., 2007; Kyprianou, et al., 2022) and socio-economic factors (Cutter et al., 2003; Pricope et al., 2019; Blackwood and Cutter, 2023) was thus proposed. This approach began to take shape more concretely in this direction after the seismic event that hit the Abruzzo Region on 6 April 2009. Following the extensive urban damage caused by that earthquake, the Italian government introduced a significant funding program of approximately 1.2 billion euros (Castenetto, 2024) to finance risk management interventions in seismically prone territories. Through the National Plan for the Prevention of Seismic Risk (PNPRS), the State launched an ambitious program of Seismic Microzonation (SM) investigations, Emergency Limit Conditions (ELC) analysis and structural interventions on buildings. Although the allocated funding represents only a small fraction of the average annual expected cost of earthquake damage (Dolce 2012), the PNPRS is the first seismic prevention plan in Italy that considers prevention also from an urban planning perspective on a national scale (Bramerini et al., 2013). These efforts have also favored the systematization of various types of knowledge and a more integrated vision of seismic prevention in urban contexts (Tomassoni et al., 2023).

The technical-scientific evolution of this approach subsequently led to the conceptualization of the limit conditions of settlements (Cavinato, 2013) which define a scale of performance levels for the urban center to be preserved in the event of an earthquake (Bramerini et al., 2013), as a reference for the planning of mitigation interventions. Considering emergency management as the minimum objective, in recent years several experiments have been launched that refer to more advanced levels of settlement performance for the recovery start-up phase (Fontana et al., 2024) and for post-earthquake recovery (Cattari et al., 2024). The logic that accompanies these approaches, and that we can find in the proposed research, refers to a gradual involvement of urban functions and systems in seismic risk reduction policies to ensure ever-increasing settlement performance: starting from the urban system responsible for emergency management, the subsequent recovery start-up objective also involves the school function and with the third, recovery, other urban functions are added, creating an increasingly complex system.

4.1 Sismopoli and the three educational paths

Sismopoli is a multiplayer board game, designed for 2-6 players and tested with students aged 16 and up, but also with a wider audience and with different scientific backgrounds. The aim of the game is to improve urban safety in a simulated settlement, divided into neighbourhoods with housing and urban functions, located in a region with variable local seismic effects due to the specific characteristics of the terrain.

In line with the risk management cycle, players must work together to retrofit buildings hosting public and private functions and ensure the safety of roads and public spaces in preparation for a potential earthquake. This will allow them to effectively manage the emergency phase, facilitate recovery and gradually rebuild more safely.

The performance requirements for the settlement are based on a scale of three safety levels to be achieved (see Fig. 3), gradually more complex: from the minimum safety level (the emergency management) to an intermediate level (the beginning of the recovery phase of the settlement), up to the complete level (the total reconstruction of the affected settlement).

Fig. 3. Different levels of settlement safety: a. emergency management; b. early recovery; c. long-term recovery.

The choice of the security level to be pursued, defined in agreement between the players, implies a different complexity of the gaming experience: each level corresponds to a different number of elements to protect, resources to invest and time to allocate. The main objective is to reduce the vulnerability (transform the buildings from red to green) of all the public use functions considered in the system, as well as of the "interfering" residential functions on strategic routes, whose collapse can interrupt the main communication routes and cause significant delays to emergency operations (Basaglia, 2018). The selected system is highlighted by a red line that connects the various elements and changes configuration depending on the objective, making the game board a dynamic tool (see Fig. 3).

The perimeter path of the board includes: "Interventions", to reduce the vulnerability of private and public buildings; "Knowledge", to deepen the understanding of seismic risk; "Bonus" and "Unexpected", where players encounter positive or unexpected critical situations; and finally, "Earthquake", which triggers the seismic event, affecting all players and elements on the board.

The game is designed to achieve two victories: a collective one, in which the entire urban system reaches the expected safety level, marking the end of the game, and an individual one. If the collective goal is not achieved at the time of the earthquake, the individual success is determined by the number of residential and public use functions still existing in each neighborhood, as well as their vulnerability class.

The general objective of Sismopoli is to contribute to a greater awareness of seismic risk and, as previously mentioned, to stimulate knowledge processes in terms of care of the territory as a common good, considering

risk reduction as a crucial component. The proposed educational paths, translated into various forms in the dynamics and rules of the game, – education on the territory, risk and participation – represent in our opinion the key aspects to address the issue of risk prevention.

The theme of "care of the territory" has been structured around the three parameters identified in Fig.2. The spatial dimension is represented in a game board explicitly inspired by a medium-sized urban system, divided into neighborhoods and streets, where urban and residential functions are positioned. There are ordinary urban functions that satisfy the essential needs of daily life and the residential function, with several homes located along the connecting roads and a central public square, which serves as an emergency area in the event of an earthquake. The key functions related to emergency management are also present. The collective dimension is in line with the specific goal of the game: to make the city safer by prioritizing public functions, streets and the main square, taking into account the available resources, time constraints and priorities of each group of players. Interventions on the urban system and its components lead to a reduction in the potential environmental sustainability caused by debris production and land consumption, which would otherwise occur to meet post-earthquake housing demand.

The theme of "risk understanding", structured around the management of the seismic event, is organized according to the phases of the disaster cycle: the prevention phase, in which the actors strengthen the elements of the chosen safety system and prepare to manage the emergency effectively; the response phase, in which the operational functionality of the three strategic buildings must be guaranteed and the capacity of the emergency area in the main square must be sufficient to accommodate all displaced residents; the recovery phase, in which the reconstruction of collapsed buildings begins, damaged structures are reinforced to reduce vulnerability, and new earthquake-resistant homes are built to better withstand future seismic events. In order to implement targeted interventions aimed at achieving specific levels of safety, actors must understand the role of individual risk factors and their interactions. The components of risk – geological hazard, building vulnerability, and exposure of people and property – form the basis of the game dynamics.

The theme of "community participation" is structured around the assignment of roles: each player is responsible for the safety of a strategic or ordinary function and of one of the six city districts, thus representing both individual interests and those of the entire community. The game includes both collaborative and individual victory conditions, but they are not equivalent. During the game, several moments of discussion and decision-making take place, from the definition of collective objectives to the determination of priority interventions.

Figura 4. Laboratorio Sismopoli

5. Sismopoli Laboratory: playability and first evaluations of the increase in awareness

After developing the prototype and conducting initial team tests, a preliminary assessment of the game's usability and playability was carried out in 2024 during three events: a dedicated workshop at the Institute of Environmental Geology and Geoengineering of the National Research Council (CNR-IGAG); the "I4SCIENCE – European Researchers' Night" event, part of the Horizon Europe - Marie Skłodowska-Curie Actions (MSCA) program for 2024–2025; and the "Malnisio Science Festival 2024." Participants, aged 10 to 49, came from diverse educational and professional backgrounds. Two game masters led the sessions, guiding gameplay and encouraging discussion and group reasoning with active engagement.

After playing, participants completed a 24-item questionnaire adapted from the "Game Experience Questionnaire" (Ijsselsteijn et al., 2013), tailored specifically to serious games and Sismopoli. Preliminary results provided valuable insights into the game's usability and engagement. The mechanics were found to be well-balanced and easy to follow; all participants successfully engaged with the instructions and gameplay on a board they found visually and structurally engaging. This is particularly notable given that a third of the participants were between 10 and 15 years old. Fewer than 10% struggled to understand the game's objectives initially, and 90% agreed that the number of tokens was appropriate for gameplay.

Emotionally, players appeared entertained and engaged. Nearly all expressed a desire to play again and maintained focus throughout, even while others took their turns—actively following decisions made by their peers. Only two participants reported moments of distraction. Most players aimed to make as many moves as possible, hoping their token would land in either the "intervention" or "bonus" spaces. The game's challenge, heightened by time constraints, was seen as satisfying. Around 70% feared landing in the "earthquake" space, which ends the game—indicating successful creation of tension and emotional involvement. Overall, results suggest strong performance in terms of rule clarity, enjoyment, and challenge, with minor adjustments needed to improve the engagement of the educational content.

However, the survey also revealed a notable inclination toward individual competition over collaboration. Despite the game allowing both individual and collective victory modes, approximately 60% of participants admitted to focusing their actions within their own areas of expertise to increase their chances of winning. Only 25%

engaged in discussion with other players, and just one-third reported appreciating or offering advice, indicating limited cooperation.

A second, more structured evaluation phase was carried out as part of the institutional project "Roma Scuola Aperta – Mappa della Città Educante 2024–2025," promoted by the Municipality of Rome to offer educational and training initiatives in schools. The Sismopoli Laboratory was introduced at the "Galileo Galilei" High School of Applied Sciences to assess the game's effectiveness in raising awareness about seismic risk, particularly regarding fostering a sense of responsibility toward the territory as a common good.

The lab was structured in two phases: an initial training session introducing the key concepts of urban seismic risk reduction, followed by a gameplay session to apply the knowledge in an experiential context. Topics addressed spanned multiple disciplines—earth sciences, engineering, urban and territorial planning, environmental and civic education.

To evaluate the laboratory's effectiveness, students completed a paper-based group test consisting of 30 multiple-choice questions, categorized into the three educational themes central to the research: the territory as a common good, risk, and community. The questionnaire included both cognitive and non-cognitive items and was administered twice: at the beginning (pre-test) and end (post-test) of the laboratory. In the first round, responses were based on prior knowledge and opinions; in the second, students answered after having experienced the game and associated discussions.

Evaluation was based on a scale from 1 to 4, reflecting the degree of alignment with the concept of risk awareness—understood here in line with Gambino (2005), as the recognition of territory as the outcome of complex and historically determined relationships between natural and human factors.

An initial set of non-evaluative questions gathered sociographic data (e.g., school distance from home and mode of transport) to provide context regarding students' community relationships and their use of public services.

Questions relating to territory prompted reflection on the idea of the city as the "home of society" (Salzano, 2008)—a place of interaction, functionality, and shared space, where care for the urban environment becomes a collective responsibility. These questions, which were directly addressed in gameplay, encouraged reflection on environmental stewardship and social responsibility.

The risk section assessed technical understanding of hazard factors, their interactions, seismic exposure in Italy, emotional responses, and capacity for reaction. It also addressed necessary skills, involved disciplines, and key stakeholders in risk management.

Finally, the participation section evaluated the extent to which individuals were willing to contribute, collaborate in group settings, and share life experiences in a civic context.

The lab was tested with a fifth-year class of 17 students. Results from the pre-test showed a relatively high baseline of knowledge: on a scale of 1 to 4, scores ranged from 2.8 to 3.6, with a class average of 3.2. The post-test showed a slight improvement, with a minimum score of 3.1, a maximum of 3.6, and an average of 3.3—indicating that, although the class was already well-prepared, the game contributed to a modest enhancement in awareness and understanding.

6. Conclusions

Disaster risk reduction at the urban scale represents a highly complex field of application. It involves multiple disciplinary areas, a variety of public and private stakeholders, and social issues that directly affect citizens and civil society at large. Despite the growing urgency of this issue—highlighted by the increasing frequency of extreme events in Italy and beyond—there remains a noticeable reluctance among public decision-makers and a general

lack of awareness within civil society. This disconnect is also evident in the education sector: disaster risk management is inadequately addressed in both higher education and in primary and secondary school curricula. As a result, the topic is often relegated exclusively to scientific disciplines, where it is approached in a highly sectoral and fragmented manner.

Leading international organizations are urging greater efforts to raise risk awareness in a comprehensive manner—one that encompasses all phases of the disaster cycle. They advocate for innovative and diverse modes of knowledge transmission, including peer-to-peer, formal, and non-formal learning methods.

In this context, the CNR research group has developed Sismopoli, a serious game designed to raise awareness about seismic risk in urban environments. Serious games are increasingly recognized as effective tools for conveying important messages in engaging and interactive formats. Sismopoli aims to foster awareness not only among school and university students, but also within broader civil society, by stimulating reflection on environmental and territorial issues that impact us all.

Sismopoli's primary objective is to promote greater risk awareness and to encourage a renewed sense of connection to the territory—framed as a catalyst for political and cultural change that recognizes the territory as a common good.

Inspired by existing practices in both technical planning and participatory engagement, Sismopoli uses a board game format to simulate the management of an urban area located in a seismic zone. The game draws upon theoretical and regulatory frameworks from the field of disaster prevention, reinterpreting them within the gameplay as models of territorial intervention. In particular, the game simulates an actual risk prevention initiative currently active in Italy, financed by the National Plan for the Prevention of Seismic Risk (Article 11, Law 77/2009). Since 2012, this initiative has involved over 3,500 Italian municipalities located in medium to high seismic risk zones—making the game an authentic reflection of real-world practice.

A review of 39 risk management games revealed a striking lack of tools that address risk reduction across the full disaster cycle. Very few incorporate urban planning perspectives. Sismopoli aims to fill this gap by offering a comprehensive, planning-based approach to seismic risk.

Initial playability testing across various events showed that the game mechanics are intuitive and the gameplay is enjoyable, while still engaging players in achieving risk-related objectives.

The current phase of the research focuses on evaluating the effectiveness of Sismopoli in increasing awareness of seismic risk. A structured educational laboratory was recently implemented at a secondary school in Rome as part of the institutional initiative Roma Scuola Aperta – Mappa della Città Educante 2024–2025, which promotes educational programs across schools. The evaluation was carried out through pre- and post-activity questionnaires, yielding promising results regarding student engagement and learning.

Simultaneously, the game is being disseminated more widely through public outreach efforts, including participation in scientific festivals and communication activities promoted by the National Research Council (CNR). These efforts aim to bring the game into classrooms, communities, and broader public settings.

The ultimate goal of Sismopoli is to initiate a broader path of public awareness, starting from simplified, engaging experiences that introduce the complex issue of seismic risk reduction in urban environments. The next phase will involve integrating the simulation into citizen science initiatives, allowing participants to apply the knowledge gained from the game in real-world contexts, directly within their own territories.

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