

Overcoming challenges of science outreach: Leveraging mobile technology for earthquake education in Latin America

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INTRODUCTION AND MAIN RESULTS

This presentation provides information on the Educientistas digital strategy, an innovative initiative for scientific dissemination in regions with limited access to the Internet and technology, which empowers young people as agents of change in their communities. The results are five educational pillars.

Keywords: Science Education, Mobile Application, Disaster Resilience, International Monitoring, Culture of Peace.

Introduction

The Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) operates the International Monitoring System (IMS), a network of 337 facilities in 89 countries that uses four technologies (seismic, hydroacoustic, infrasound, and radionuclide) to detect nuclear explosions. Disseminating this complex science, especially in regions with unequal access to technology such as Latin America and the Caribbean, is a challenge.

Traditional methods face logistical and resource constraints. To overcome these obstacles and reach young audiences, the San Calixto Observatory has developed the “Educentistas” is a mobile educational digital strategy designed to work without an internet connection, overcoming barriers to access.



Map International Monitoring System (IMS) showing stations located in Bolivia (LPAZ, SIV and IS08)

Methodology

Main Objectives

- Promote a culture of peace: Educate about the crucial role of international monitoring and verification (CTBTO) for global security.
- Promote local resilience: Provide practical and contextualized tools for seismic prevention and response in Bolivia.
- Empower young people: Turn students into agents of change through applied scientific knowledge.

Implementation Phases

1. PHASE 1 (Implemented): Seismic Prevention and Response Module.



2. PHASE 2 (In Testing): “Guardians of the Planet” Module on IMS technologies and the work of the CTBTO.

Results

“Tectonic Ring” analogy



“Earthquake Preparedness” sociodrama



“Seismologist for a Day” outreach



“Seismic Emergency” guides



“CTBTO: Guardians of the Planet” role-playing game

Conclusions

This Android App (serves as offline too) is an innovative and accessible tool for bridging the gap in scientific outreach. The implementation of the CTBTO module after the trial period. This teaching methodology, based on role-playing, helps students recognize the function of IMS technologies and understand the essential role of the CTBT verification regime as pillars of international security.