Chapter 3
Multimedia Educational Application for Risk Reduction

Ana Iztúriz
Universidad Pedagógica Experimental Libertador, Venezuela

Yolanda Barrientos
Universidad Pedagógica Experimental Libertador, Venezuela

María A. González
Universidad Pedagógica Experimental Libertador, Venezuela

Larry Rivas
Universidad Pedagógica Experimental Libertador, Venezuela

Matilde V. de Bezada
Universidad Pedagógica Experimental Libertador, Venezuela

Simón Ruíz
Universidad Pedagógica Experimental Libertador, Venezuela

ABSTRACT

The 21st century has brought changes and innovations in educational technology that should be incorporated in the curriculum at all educational levels. Therefore, it is necessary to apply modern technologies in learning processes. This work was based on basic cognitive learning theories and principles, and used software, such as Freehand, Adobe Photoshop, Jigsaw Puzzle Creator, Brainsbraker and Jigsaw Puzzle Lite, to create a multimedia version of the SALTARIESGOS board game. The game was applied and validated with students from elementary school of 2nd, 4th, 5th and 6th grades. The results we obtained can be considered satisfactory based on the student’s opinion, and the pedagogical strategy was as an effective tool for achieving our goals. The educational contribution of this interactive version of the game will promote and sensitize school community members at different urban and rural areas, in order to enhance the preventive culture in disaster risk reduction.

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INTRODUCTION

Education in the 21st century outlines poses some inherited and new challenges as response to the population growth, the marginalization, the migrations, the economic-political blocks in which the world has been divided. As a result we have led to the present environmental crisis due to the impact of threats and societal vulnerabilities. UNESCO declared, in the Millennium Objectives, the need that half of the planet inhabitants should be alphabetized and therefore obligatory primary education be reached as one goals to achieve for 2015 (UN, 2005).

Education for disaster risk reduction (DRR) is a transdisciplinary exercise aimed at developing knowledge, skills and values which will empower people of all ages, at all levels (Dey, 2006).

During any catastrophe children are the most affected and vulnerable to such adversities. Safety culture promotion and disaster preparedness among school members will aware them on environmental dynamics and safety (Abhyankar, 2006). According to the International Federation of Red Cross and Red Crescent Societies the education is a much broader concept in its theoretical and practical implications and a more systematic vision of the concepts, skills and values offered on DRR.

Based on these commitments, the incorporation of formal and informal education for risk management in Latin America has had a non harmonious and stable advance in spite of the regional efforts carried out by the EDUPLANhemisférico, PREANDINO, CAPRADE, PREDECAM among others (UN-ISDR, 2007). Part of the obstacles have been the limitations in the incorporation of the transverse core on disaster risk reduction into school curricula, as well as the inappropriate school infrastructure, and the background of teachers and students to reach the safety school standards existing in other continents.

BACKGROUND

Instruccional games are used to develop cognitive processes, values, emotion control and group exclusion handling. Jensen (1999, 2000) indicated that educational activity improved attention, planning, memory, language, creative and divergent thought. Also, it allows societal integration and worldwide understanding (Szczureck, 1989, Amaya, 2005).

Recently, new educational developments involving ITC’s has been reported in Argentina, such as: ¡Alerta Sismo! Prevención Sísmica en las Escuelas, ¡Alerta Sismo II! Plan de Emergencia Familiar, designed to increase the preventive culture towards the main dominant geologic threats (Malmold and Balmaceda, 2005 a; 2005 b; 2006); and the ABC Desastres (UN-ISRD, 2006). This last author points out that Colombia, Venezuela, Peru, Chile, Cuba, Nicaragua, El Salvador, and Costa Rica have had successful experiences in previous preparation for disasters. It is important to note that, in Mexico, the teaching on DRR is obligatory from the legal viewpoint, they have several study cases and instructional materials related to this study matter. It is also important to point out that not all these efforts develop the application of ITC’s as teaching and learning strategies.

The International Strategy for Reduction of Disasters has produced a very significant educational resource production in multimedia format on DRR (UN-EIRD-UNICEF, 2005) such is the case of the game “Stop Disaster” (UB-ISRD, 2007). The UK High School Teacher Association made an interactive website in 2007 for multi users that allows the exploration and discovery of drills related to adverse events, as well as learning about the nature of hazards and risks (University of Northumbria, UK-Disaster and Developing Center) (ISRD-IDRC-Prevention Web, 2008).

The Venezuelan educational system has limited instructional resources related to risk and disaster reduction subjects, especially those associated
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