MSU MIND Lab's Undercover UXO

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In 2010, the Media, Interface and Network Design Lab at Michigan State University completed a computer training game, *Undercover UXO*, to provide unexploded ordnance and mine-risk education to Cambodian children.[1] As a result of conflicts throughout the past three decades, landmines and explosive remnants of war have caused more than 44,000 injuries and nearly 20,000 deaths in Cambodia.[2] In 2010, 71 people were killed and 215 were injured by landmines, ERW and cluster munitions.[2]

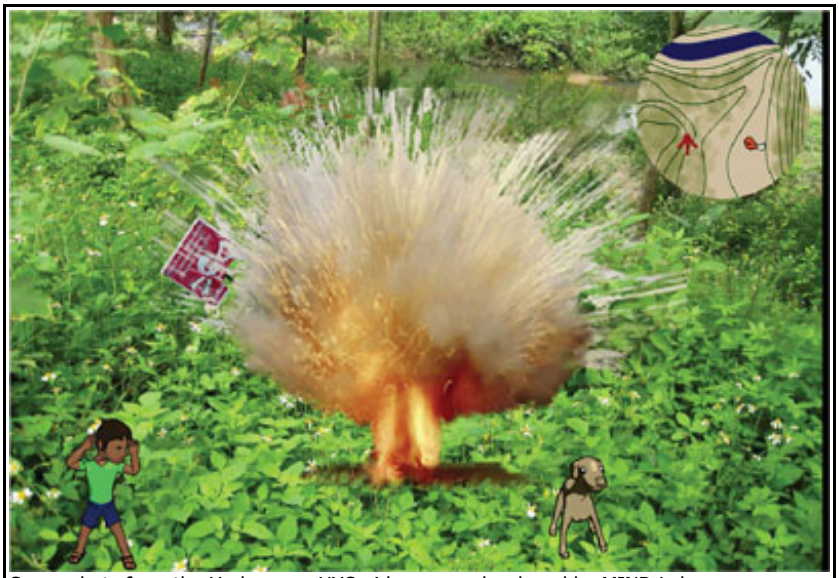
Looking for an innovative way to provide MRE, the Golden West Humanitarian Foundation, a nonprofit charity based in the United States, approached the MIND Lab in MSU's Telecommunication, Information Studies and Media Department with the idea for creating a video game to be used for MRE.[3] The resulting game, *Undercover UXO,* was completed in partnership with the One Laptop per Child Program and with funding from the Office of Weapons Removal and Abatement in the U.S. Department of State's Bureau of Political-Military Affairs (PM/WRA).[1]

The Game

The video game teaches children to identify and avoid landmines and unexploded ordnance. To add to its appeal, the Khmer narration is by Cambodian Chhom Nimol, the lead singer of a California-based (U.S.) rock band, Dengue Fever.[4] As the project leader and an Assistant Professor of Telecommunication, Information Studies and Media at MSU, Dr. Corey Bohil said: "It should be fun enough that a kid wants to play this game over and over again … and get enough repetition that when it transfers out into the real world, it translates into actual changes in behavior."[5]

In the game, the player must navigate through a maze of images of Cambodian landscapes plagued with UXO to find food for a pet. Visual cues, similar to those in real life, indicate nearby landmines or UXO. If the pet steps on a landmine, it is startled, an explosion occurs,

Screenshots from the Undercover UXO video game developed by MIND Labs.
Images courtesy of MIND Labs.



Screenshots from the Undercover UXO video game developed by MIND Labs.

and a mine-identification specialist appears to explain the missed cues. As children learn to successfully identify and avoid UXO, they are able to complete the game faster and move on to other levels. The repetition inherent in the levels of the game is essential to help children successfully identify and avoid mines in real-life situations.[1]

In May 2011, the game was distributed to children in Phnom-Penh for testing before dissemination in rural areas more affected by landmines and UXO.[1] Testing results showed "that the game stimulated spontaneous, excited competition among the children to detect the landmines."[6] The game also fueled impromptu peer-to-peer teaching, in which children would teach each other where onscreen landmines could be found. These interactive and enthusiastic responses suggest that long-term retention is likely.[6] Although this testing was successful, there are no plans for wide-scale fielding in rural Cambodia at present because of the lacking computer and electrical infrastructure.[1,7]

Originally designed for the XO-1 laptop, a newer version of the game can be used on most personal computers as well. There are also plans to make it available for Macintosh and Linux systems and smart phones.[8] In addition, the game can be adapted easily to other locales and situations by changing some of the visuals and the language.[9] Golden West is currently looking for funding to continue the development and fielding of Undercover UXO in Cambodia and other countries and believes it can have a greater impact in recent post-conflict areas.[7]

Organization and Other Games

While the first MIND Lab opened at MSU in 1998, today there are 10 MIND Labs at different universities throughout the United States and Europe. Though research projects vary between labs, this consortium shares a common focus, examining the "integration of media, communication, and technology."[10] The international consortium is directed by Dr. Frank Biocca, a former Professor of Telecommunication, Information Studies and Media at MSU, who currently teaches at Syracuse University.

MSU's Games for Education and Learning Lab, a sister to its former MIND lab, is a division of MSU's program for Serious Game Design, a part of its Telecommunication, Information Studies and Media Department. In its serious games study track, MSU students and professors work to develop interdisciplinary games not only for entertainment but for education.

The MSU MIND Lab developed other serious games, including the creation of a virtual environment to teach inner-city youth about healthy social interaction and a program that uses writing workshops and visual media to support teenage Rwandan genocide survivors.[11] Games recently developed by the GEL Lab at MSU include Dealertown Ford, designed to teach players about car financing, and Olympus, a fantasy "exergame" that requires physical activity and immerses


Screenshots from the Undercover UXO video game developed by MIND Labs.

players in Greek mythology.[12] All of these games have educational purposes, and games like Undercover UXO may even save lives.

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Endnotes

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