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Virtual Emergency Preparedness Gaming Simulation as New-Era Training and Planning tool

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ABSTRACT

Emergency preparedness suffers great challenges, because of the vast number of threats needing consideration and the limited resources to carry out the programs. In developed countries like the United States, technical disaster relief has surpassed natural disaster relief as the main focus of emergency preparedness. Compared with natural disasters, technical disasters demonstrate new characteristics. Technical disasters may not have precedents. Intentional human-caused disasters like terror attacks can be highly creative. Because of these, traditional hazard analysis method based on historical records may not work for technical disaster preparedness. New methods are needed. Aware of this new trend, Information Systems department of New Jersey Institute Technology, New Jersey, U.S., started the research work in utilizing information systems to facilitate man-caused or technical disaster preparedness planning from 2002. The suggested solution is a Virtual Emergency Preparedness Gaming Simulation system. It is called "virtual" because participants join the simulation through Internet. It is called "gaming" because the participants are divided into competitive roles such as defense, attack, defense intelligence, and attack intelligence. It is all-man simulation, with no pre-defined modals, which makes this method flexible and easy to implement for different targets and purposes. Experiments are conducted to test the effects of this method, especially some important skills and competencies like Situation Awareness, Mental Rehearsal, Critical Thinking, and Creative Thinking.