網路虛擬演習系統之建置與評估

Construction of an Internet Virtual Mass Casualty Drills System in a Medical Center

中文摘要

災難反應可以大致分為三期，即平時擬定反應計劃及標準作業程序，並且教育訓練反應人員，災難發生時災難應變，災難應變後的復原重建。災難教育訓練是落實災難應變計劃重要的一環。近年來網路資訊技術蓬勃發展，網際網路成為適合提供災難教育的途徑，因此本研究希望利用 ASP 及 JavaScript 技術建構一套可以經由網際網路操作的制定災難反應計劃與練習的工具，利用這套工具使用者可以建構符合「災難現場管理系統」的指揮架構。此外，使用者也可以經由角色扮演，練習災難反應時擔任該職責所應採取的行動。本研究之研究步驟依次為：一、演習流程資料收集；二、演習流程及結構分析；三、系統開發；四、系統測試。本研究已開發出一套符合事件指揮系統的災難計劃制定工具，讓使用者可以依據『精靈』指引，按部就班地制定出災難現場管理系統。另一方面還提供一個虛擬演習的練習工具，參與者可以在網際網路的環境下操作桌上演習，此桌上演習工具可以單人或多人實施。演習者依據他所扮演的角色作出正確的災難反應，當演習者反應錯誤時，系統會依據事先建立的標準作業程序，提出正確的指示。在系統評估部分，利用問卷調查訪問兩次演練中共四十七名參與虛擬演習者，發現有超過八成的參與者認為本系統有助於協助他們了解災難時的反應內容及程序，而有百分之八十七的參與者在增加災難反應知識的客觀評估中有進步。本研究所建構之網際網路災難虛擬演習系統的確有助於災難反應的訓練。

英文摘要

Disaster training is very important for disaster preparedness. As the progress of the information technique, the Internet is a suitable environment to carry out disaster education. In this paper we review articles about the educational theories, challenges and methods of disaster training as well as some advanced disaster training computer software systems. In this study, Active server page and Javascript techniques were applied to construct the web-based disaster planning and virtual exercise computer system after analyzing the rehearsal plans in Taiwan. This system contains two major tools. One is the disaster planning tool. Users can easily complete their disaster response plan by following the step-by-step guide and build their incident command system for various disasters. The other part is an Internet virtual exercise tool. Participants can play table-top exercises using their browsers on their computers connecting to Internet. If participant has wrong response, the computer system will correct the response according to the pre-built

disaster response plan. For evaluation, forty-seven persons were included in two virtual drills. More than eighty percent of users granted that this system could help them to familiarize the disaster response contents and procedures. In a subjective survey about improving the knowledge of disaster response plan, eighty-seven percents of users got improved. Thus, we concluded that the web-based disaster planning and virtual exercise computer system is helpful to disaster training.