

Applications of WebGIS to Educating Disaster Risk Reduction for Chinese and Japanese Students

*Jiali SONG¹, Takashi Oguchi², Hiroyuki Yamauchi², Takuro Ogura¹

1. Graduate School of Frontier Sciences, The University of Tokyo, 2. Center for Spatial Information Science, The University of Tokyo

In this world of globalization and information explosion, WebGIS (Web Geographic Information Systems) can effectively support education in natural and social sciences. We should utilize this technology and for better human life. Research on mortality due to natural disasters has shown that nations with higher levels of education experience lower levels of mortality. This suggests that young students are knowledgeable and will contribute to future disaster risk reduction (DRR) if they are well educated. Hence, it is important to introduce DRR into high school education such as classes of geography. At present Chinese researchers are preparing disaster-related compulsory curricula for high school DRR education, and are designing special textbooks for this purpose. In Japan, some researchers have already constructed online WebGIS systems for DRR education using hazard maps available on the Internet. However, such DRR activities tend to be insufficient because of limited cognition of citizens about information related to hazards and risks. This study aims to construct an improved online DRR system for high school education using WebGIS technology along with hazard information including maps for China and Japan. In August 2018, Japanese students used the system in an event funded by the Japan Society for the Promotion of Science. After that, a similar educational event was held in a high school in China. During these activities, students compared paper hazard maps with electronic hazard maps and used both of them for consideration. At the end of each event, the feasibility and effectiveness of the system were surveyed by questionnaires to evaluate the understanding of students about WebGIS and relevant knowledge. The results indicate that students in both countries prefer teaching materials like the constructed DRR system for school classes. However, there are some differences between the two countries. For example, the Chinese students thought that analysis of dangerous areas using the layer of flooding areas was more difficult than the Japanese students, reflecting differences in DRR knowledge. To improve the applicability of the system, further educational activities will be conducted in the near future.

Keywords: WebGIS, Disaster risk reduction, Geography education

