Student's awareness for hazard mitigation of earthquakes and volcanic eruptions

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After the 2004 Tokachi-oki Earthquake, special discussion was conducted in our classroom. Basic questions are, where they were and what doing, and what they did at the time, and to determine their own seismic intensity. Most students were awakened by the shock of I=3 to 5+ at 04:50, and turned TV for quick information, and returned to sleep. Surprisingly, 3 out of 84 students did not felt. Only several followed active safer responses; checking gas/fire, opening the entrance door, inspecting outdoor, and talking with family or friends. 18% of them utilized web information from the first day, while 23% didn't use at all for the following one month.

Student's responses after viewing a video of earthquake disaster in 20th Japan and examination of basic information, were given back to them, and we discussed the awareness of natural hazards. Because of their own fresh experience of the earthquake, many expressed they became deeply interested in earthquake and realized their own situation left without any proper hazard awareness.

Shallow-in-land earthquakes (SIE) had occurred so intermittently more than half century up to the 1948 Fukui earthquake and repeatedly gave severe damages despite of their smaller magnitudes. This fact is, surely known among scientists, students, however, are almost complete lack of knowledge with an exception of Hanshin-Awaji disaster. One another main factor for large human loss was caused mainly by tsunami, but most students complained they didn't know the proper knowledge on mechanism and emergency responses for tsunami hazards.

Above situation may be caused by multiple reasons including the improper education system, insufficient public information, and lack of proper training and communication over wider generation. An additional factor is the half century long peaceful time period where people including most of officials, reporters, and of course school teachers were grown up.

We also discussed volcanic hazards including the recent difficulties at Mt. Usu. One video clip illustrated the hotel manager, who refused evacuation from the resort town and insisted his reasoning. From the discussion, students realized there are two different viewpoints; some worry unbelievable risky action, while others express sympathy and evaluate their correct reasoning. They also pointed out some constructive proposals; importance of people's view point, common understanding of basic information before the crisis.

Another subject was the former mayor's decision of the acceptance of hazard map. Students couldn't imagine such difficulties are so recent stories. Scientists first realized the problem after the 1985 Ruiz disaster, then Mt. Unzen triggered social interest on pyroclastic flow, and then 1993 Okushiri tsunami disaster finally encouraged the local mayor turning to safer direction.

The 1980 eruption of Mt. St. Helens gave a strong impact in world volcanologists, but it was almost completely stranger's world for the students. IAVCEI's video set served efficient stimulation for awareness. Such videos and other visual images are very important tools for the young generation.

Specialists who are working in the relating fields must participate more positive role in two ways; reconstructing basic historical data for future generation, and of course, assisting and cooperating with officials, people and media for the coming and/or ongoing phenomena. Actions taken during the calm stage is the most important for hazard mitigation.