The Natural Disaster and the Role of Science Museums

16 Nov. 2017

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- BS in Astronomy, The Seoul National Univ.
- MA in Broadcasting and Journalism, Sogang Univ.
- Ph.D in Design, The Seoul National Univ. of Science and Technology
- Former Reporter, the Science Dong-A and the Digital Times
- Former Representative, NASA Museum Alliance in Korea

Over 30 years, I authored several science books for children. I engaged in producing a TV series related to science, ‘Hogisim Cheonguk’ (Curiosity Heaven). I had a key role in founding a bi-weekly science comic magazine, ‘Children’s Science Donga,’ and two newspapers including ‘The Digital Times’. I designed and managed a lot of science events and contests including the ‘Nobel Science Essay Contest’.
I. Science Technology Risk & Social Issues in Korea
### Science Technology Risk and Hazard

<table>
<thead>
<tr>
<th>Science Technology Risk</th>
<th>Hazard</th>
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<tbody>
<tr>
<td>Risks by the science and technology</td>
<td>GMOs, radioactive waste, chemicals, vaccines, antibiotics, nanotechnology, transmission towers, nuclear power, cybercrimes, industrial accidents, genetic manipulation, etc.</td>
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<tr>
<td>Risks through science and technology to find causes or find countermeasures</td>
<td>Environmental pollution, epidemics, natural disasters (earthquakes, tsunamis, typhoons, volcanic activity, heatwaves, heavy snow, heavy rain, dust, dirt, floods, drought, wildfires)</td>
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Case I: Sewol Ferry Disaster (16 April 2014)

Deaths: 304 persons (students 261 persons)

The Sewol Ferry disaster contributed to the political downfall of President Park Geun-hye, at last ending her presidency.

Park Blue House doctored files on Sewol sinking
- Korea JooAng daily, Oct 13, 2017

Documents indicate former president lied about her role during Sewol sinking
- The Korea Herald, Oct 12, 2017
Case II: Gyeonju earthquake (12 September 2016)

Strongest-ever earthquake hits Korea, tremors felt nationwide
- The Korea Times, 2016-09-12

After Gyeongju earthquake, stress tests for nuclear power plants moved up one year
- The Hankyoreh, Sep.19, 2016

Status of nuclear power plants in Korea

Major earthquake hits Pohang, CSAT delayed
- Korea JoongAng Daily, Nov 16, 2017
III. Science Technology Risk & Science Museum
Do you think the following risk factors need to be exhibited and educated in the science museum? (N=196)

Source: D. Hong. (2016), Risk Information Communication in Science and Technology Between Science Museum and Users in the EPL Model
Recognition / interest / necessity of exhibition and education of science and technology risk factors (N=36)

Source: D. Hong. (2016), Risk Information Communication in Science and Technology Between Science Museum and Users in the EPL Model
Future science and technology risk perception by major (N=1,154)

Source: D. Hong. (2016), Research on future science and technology risks, KOFAC
Science museums influence the knowledge and attitudes of the individual.

According to a survey (Hong, D, 2016)

1. Science Museum has insufficient communicative function, but high reliability.

2. Users have a need for exhibition and education about the risks of S&T.

3. Users demonstrated trust in the information provided by science museum. The level of this trust correlates with the level of trust in the science museum itself.
IV. Natural Disaster & Science Museum
Exhibits and Activities for Risk Information Communication in Daegu National Science Museum

- Science Newspaper
- 4D theater on earthquake
- Survival backpack
- Lecture on earthquake
- Real time earthquake of Science on Sphere
- Doing CPR
Disaster Response Safety Drill in Daegu National Science Museum
Nov. 2 2017
V. International Cooperation
Earthquake Education
Science Museum
(Tokyo, Japan Science Foundation)

Realtime earthquake display
Miriakan
(Tokyo)

Early seismometer
National Museum of Nature and Science
(Tokyo)

Chinese old seismometer
( Dongguan Science Center)

Realtime seismometer
( New York, American Museum of Natural History)
I’d like to propose the building of a system for international cooperation between science museums in order to share information on natural disasters taking place around the world, such as earthquakes (tsunami earthquakes), epidemics, climate anomalies, etc.

The system will promote exhibitions and educational programs in science museums.
Thank you.

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