

## **Disaster and School**

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### **Great Hanshin-Awaji Disaster (known as Kobe Earthquake)**

#### **The lessons of the Great Hanshin-Awaji Disaster**

It is said that more than 90% of the people killed by the Hanshin-Awaji Disaster lost their lives within 30 minutes. It is also said that more than 80% of the saved people were rescued by the neighboring citizens, not by the soldiers of Japan Self-Defense Army or the rescue teams of fire bureau. Fire fighters could not extinguish all the fires that morning because the city caught fires in too many places at the same time and that was beyond the capacity of fire fighters. The stop of the water supply also made it impossible to put out the fires. I believe from these facts that the most important lesson of the Great Hanshin-Awaji Disaster is that the citizens noticed for the first time that the lives of the citizens should be protected by the citizens themselves. For the citizens who had thought that the soldiers of the Japan Self-Defense Army or the rescue teams of the fire stations would manage to rescue them, the Great Hanshin-Awaji Disaster was the crucial event that made them realize how little they were aware and prepared.

#### **Schools as the refuge during the Great Hanshin-Awaji Disaster**

During the Great Hanshin-Awaji Disaster there were more than 1,100 refuges at the peak time and most of them were schools and kindergartens. There, those who took care of the refugees were the school teachers and staffs who had never received a special training on running the refuges. At an elementary school all the keys of the rooms were broken and the rooms were occupied by the evacuating people before one teacher got to the school in the morning. At a high school refugees had to sleep not only on the floors of the gym, the classrooms and in the tents hoisted at the school ground, but also on the floors of the corridors and the steps of the stairs. At many schools the refugees used the toilet, where the supply of water stopped. Their feces formed a small tower and were got rid of by the teachers and the volunteering students. The teachers also had to take care of the sick old people, hear the sad stories by the some refugees who said they wanted to die, arrange their meals, and tackle many difficult affairs, until the volunteers functioned systematically. When more than 3,000 or 3,500 people evacuated in one school, the situation of the school became something like the mess that was mentioned above. School staffs who were also suffering from the disaster made great efforts to support the refugees by sacrificing themselves.

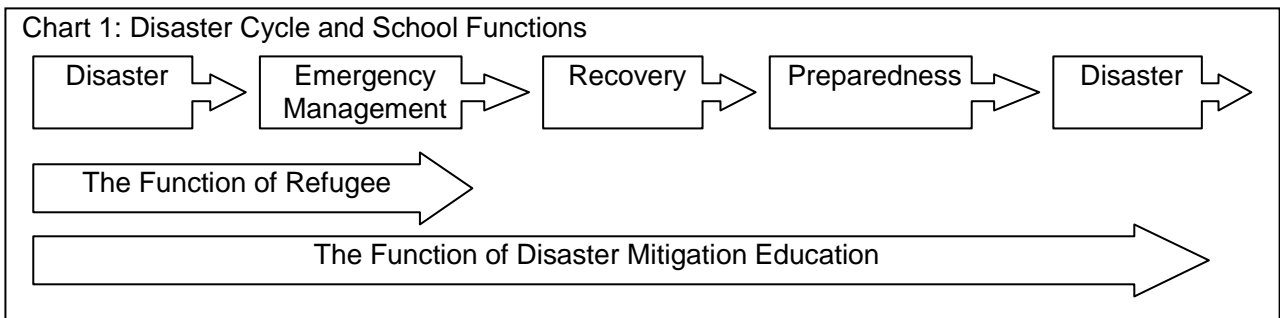
#### **Disasters and the functions of school**

Not only during the earthquake, but also during the volcanic eruption, flood and so on, Japanese schools function as refuges. Schools are the places for those who lost their houses or in danger of losing their lives and houses by the disasters.

During the Great Hanshin-Awaji Disaster 310,000 people escaped from the collapsed and burning cities to the schools and the kindergartens nearby. Japanese people naturally regard school as the refuge during the disaster. Being a refuge is one function of school during the disaster.

Now, school has one more important function. School is the only place where the disaster mitigation education could be performed systematically. The idea of school = refuge is the idea during the disaster. On the other hand, the idea of school being the place for the disaster mitigation education ranges from "before the disaster", through "during the disaster", to "after the disaster". Disaster mitigation education can function from the moment of the disaster taking place, through the emergency treatment and the recovery, to preparedness, as shown in the chart 1.

Schools thus have two functions: the place for "refuge" and the place for "disaster mitigation education."



## Disaster mitigation education

### What is the disaster mitigation education?

In the disaster mitigation education so far, we focused on the emergency management just after the disaster took place, such as the training of evacuation and distinguishing fires. In these trainings the children are not motivated very much. Everybody think he or she will never experience his or her house catching the fire. Nobody can image lively the influence of the earthquake on them because the cycle of the earthquake is much longer than the cycle of human lives. Many people think that typhoon and volcano have nothing to do with them. Thus, the less motivated training turns out to be fruitless and many people come to regard the disaster mitigation education as meaningless event.

See the chart 1. Roughly speaking, the disaster mitigation education can be done at every step of the disaster cycle in the chart. The emergency management is important just after the disaster took place. Besides, if we learn the mechanism of the earthquake, or the direction of the typhoon, for example, we will be more aware of the disaster and well prepared for it. To think of the factors causing vulnerability in a city is closely related to the disaster mitigation. Nobody will die by the earthquake of the Japanese seismic scale 5 in Japan, but many people may lose their lives in the developing countries by the earthquake of the same scale. It is easy to find the social problems there. The students will notice that to learn economy is related to learning disaster mitigation. During the process from emergency management to recovery, the students will come to notice that not only the hard aspects, such as the building code, the reconstruction of the railroads, super highways, the strong system of water supply, gas supply and so on, but also the soft aspects, such as the importance of the community, the neighboring help, the importance of human lives, the welfare and human rights, also have close relationship with the disaster mitigation. This shows that the disaster mitigation have closely related to every activity of the study at school. Thus, it is possible for the teachers to do the disaster mitigation education in every subject, if he or she wants to.

### Disaster mitigation education as citizens' education

It seems to be impossible to let 100 specialists live in one town with the population of 10,000 in order to make the city to cope with the disaster more functionally. But if every citizen advances a little in the disaster mitigation, the capacity of the city to cope with the disaster increases drastically. What takes an important role to advance the citizens' ability, skills and will to cope with the disaster is "the disaster mitigation education."

The disaster mitigation education is the citizens' education. I have mentioned that the most important lesson of the Great Hanshin-Awaji Disaster is that the citizens noticed for the first time that the lives of the citizens should be protected by the citizens themselves. The, how the citizens protect themselves? This is the point that the disaster mitigation education takes an important role. It is reported that the specialists indicated the possibility of the strong earthquake in Kobe area. Most of the citizens, however, didn't know the fact. The fact was only known to the specialists and the insurance companies. Some say that the old houses must be replaced with the newly built houses but ordinary people don't have enough money. Others say that the retrofit of the fragile houses is urgent but the language of the specialists is difficult for the ordinary citizens to understand. There were the distance between the specialists and the citizens before the great Hanshin-Awaji Disaster. There was a missing ring between the specialists and the citizens as shown in the chart 2. It is the

disaster mitigation education that can connect the two rings.

### Maiko high school environment and disaster mitigation course

The environment and disaster mitigation course started at Maiko High School in April, 2002, 7 years after the Great Hanshin-Awaji Disaster. It is meaningful to set the course at a school located in the disaster area as the center of the disaster mitigation education first in Japan. We learned a lot of lessons from the disasters so far but they were discussed only by the specialists in the 20<sup>th</sup> century.

The citizens didn't pay attention to the lessons and thus were not prepared for the coming disasters. This is why many disasters continue taking place in everywhere in the world. The 21<sup>st</sup> century must be the age to cope with the disaster and mitigate it. It depends on whether we send our lessons to the world or not. The purpose to start the environment and disaster mitigation course is to send the lessons we learned from the Great Hanshin-Awaji Disaster to the world and make the citizens aware and prepared to cope with the disasters.

### Educational goals

The main purpose of the environment and disaster mitigation course is to grow the citizens with the disaster mitigation literacy. The literacy consists of three factors: the fundamental knowledge and the fundamental skills to cope with the disasters, and the strong will to contribute to the society.

**Purposes of the course:** The purpose of the course is to have the students think of how we live and exist in the symbiosis society by utilizing the lessons learned from the Great Hanshin-Awaji Disaster. The course gives the students the disaster mitigation education concerning both the natural environment and the social environment.

### Fundamental concept of the education

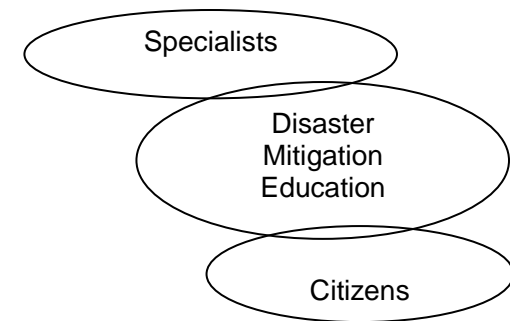
- (1) The disaster mitigation education is based on the lessons of the Great Hanshin-Awaji Disaster. It also makes the students think of the importance of life, cultivates the students' power against disasters, and brings up the human beings who can contribute to the society.
- (2) The students are expected to understand deeply about the various environments (the natural environment and the social environment) by learning the mechanism of the natural phenomenon and the relationship between disasters and human society.
- (3) We cooperate with universities, research institutes and coherent organizations. Students' understanding of the environment and disaster mitigation is deepened through the experience learning. To raise the students' attitude to "Think Globally, Act Locally" is one of the main goals to attain. We aim to bring up the individuals who can take actions independently.

### Curriculum

The curriculum is the following (char 3). Now it is under the slight modification but the main concept is the same. Roughly speaking, about 1/3 of the units is the special subjects (the dark cells) and the rest are the general subjects such as Japanese, mathematics, English, and so on.

Chart 3: Curriculum

Chart 2: Disaster Mitigation Education  
Connecting the Specialists and the Citizens



|    | 1st Year                                     | 2nd Year                                    |  |            | 3rd Year                                    |  |                                 |
|----|--|---|--|------------|---|--|---------------------------------|
| 1  | Japanese 1                                   | Japanese 2                                  |  |            | Japanese 3                                  |  |                                 |
| 2  |  |   |  |            |   |  |                                 |
| 3  |  |   |  |            |   |  |                                 |
| 4  |  |   |  |            |   |  |                                 |
| 5  | Contemporary Society                         | Geography A                                 | World History B  |            | World History A                             | World History B                            |                                 |
| 6  | Mathematics 1                                | Mathematics 2                               | Choose two subjects<br>Mathematics 2<br>Japanese Classics 1<br>Reading |            | Mathematics 3                               | Mathematics 2                              | Japanese Classics 1             |
| 7  |  |   |  |            |   |  |                                 |
| 8  |  |   |  |            |   |  |                                 |
| 9  |  |   |  |            |   |  |                                 |
| 10 |  | Chemicals 1B                                | Chemicals 1A   |            | Mathematics B                               | Geography A                                |                                 |
| 11 | Health Education                             |   |  |            | Chemicals 1B                                | Reading                                    | Workshop of Disaster Mitigation |
| 12 | Physical Education                           | Physics 1B                                  | Biology 1B   | Biology 1A |   |  |                                 |
| 13 |  |   |  |            | Physics 1B                                  | Biology 1B                                 | Computer B                      |
| 14 | Domestic Technology                          | Physical Education                          |  |            |   |  |                                 |
| 15 |  |   |  |            | Physics 2                                   | Japanese Classics 1                        | Choices $\alpha$                |
| 16 | English 1                                    | Music/Art/Japanese Calligraphy              |  |            | Physical Education                          |  |                                 |
| 17 |  |   |  |            |   |  |                                 |
| 18 |  |   |  |            |   |  |                                 |
| 19 |  |   |  |            |   |  |                                 |
| 20 | Computer A                                   | English 2                                   |  |            | Reading                                     |  |                                 |
| 21 |  |   |  |            |   |  |                                 |
| 22 | Human Beings & Society                       |   |  |            |   |  |                                 |
| 23 | Social Welfare, Volunteer, and Mental Health |   |  |            |   |  |                                 |
| 24 | Environment and Science                      | Disasters & Human Beings                    |  |            | Activity in Disaster Mitigation 2           |  |                                 |
| 25 |  |   |  |            |   |  |                                 |
| 26 | Disasters & Human Beings                     | Natural Environment & Disaster Mitigation 1 | Social Environment & Disaster Mitigation 1                             |            | Natural Environment & Disaster Mitigation 2 | Social Environment & Disaster Mitigation 2 |                                 |
| 27 |  |   |  |            |   |  |                                 |
| 28 |  | Activity in Disaster Mitigation             |  |            | Graduation Report                           |  |                                 |
| 29 |  |   |  |            |   |  |                                 |
| 30 |  | Long Home Room                              |  |            | Long Home Room                              |  |                                 |
| 31 | LHR  |   |  |            |   |  |                                 |

### Characteristics of educational activities

Practical experience is the key word of the environment and disaster mitigation course. The followings are the characteristic activities of the course.

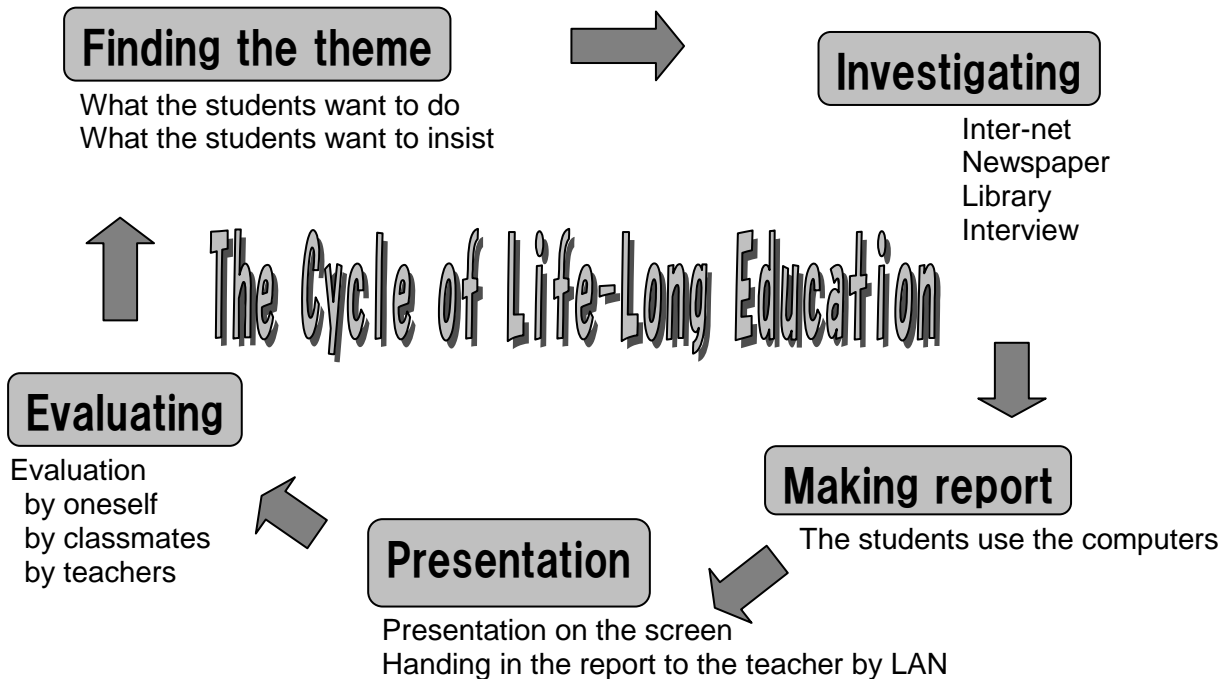
**Lessons by the guest teachers:** Many teachers are invited to school to talk about their experiences during and after the disaster. Teachers are from universities, police station, fire station, life-line related companies, the city government, the prefecture government, the volunteer organization and so on. Through this activity we hear the stories of the disaster, preserve them, and put them on the Home Page. Their precious stories make the students realize the importance of human lives and help to each other, which is the energy to facilitate the citizen-centered disaster mitigation.

**Studies outside of the school:** The students visit the Disaster Reduction and Human Renovation Institute, Museum of Nature and Human Activities, Hokudan Cho Earthquake Memorial Park. They walk around the disaster area to interview the citizens. They stay one night two days at Kobe Fire Academy to learn the fundamental skills of extinguishing fires, rescuing people, and collecting information. They take part in the disaster mitigation training held by the prefecture, the city and the regional ward. They go to the Rokko Mountains to investigate the faults, the dangerous streams of debris flow, and the raised bed rivers, which were the causes of the floods in Kobe.

**Problem solving study:** While studying the disaster mitigation, the students are not only given lectures to get the knowledge but also given the problems, or they set the tasks by themselves and they solve them by the students themselves or by the cooperation with the other students. For example, in the study of "the disaster management of a virtual community", the students set the population, the industry and the geographic characters of the community, and made a "Disaster Management Manual". In another activity, the students study the relationship between some typical disasters which took place in Japan and the lows which were adopted after the disasters. They made a newspaper of the heavy floods in Kobe area and used this newspaper to teach the pupils in

an elementary school. The aim of these activities is to have the students master the attitude and the technique of life-long education. Once the students master the cycle of the life-long education (see the chart 5), they can continue learning in their long life.

Chart 5: Life-Long Education



**Computer study:** The students use the computers to make a report, to give a presentation, and to get information by inter-net. Through this activity the students master the fundamental skills of computers and gain necessary knowledge of the information society.

**Disaster mitigation education with the pupils of the elementary school:** Maiko High School is in corporation with an elementary school to do the disaster mitigation education. The students make a regional map with the 3<sup>rd</sup> year pupils. We don't call this map "Hazard Map" but we call it "Safety Map" because we believe that people don't feel like living in the town full of dangerous information. On the other hand, they become serious to the disaster mitigation of the community if the map is full of the places they like and are proud of.

The students talk about their experiences of the Great Hanshin-Awaji Disaster to the 4<sup>th</sup> and 6<sup>th</sup> year pupils. Miko High School students were 1<sup>st</sup> or 2<sup>nd</sup> year pupils those days. Their experiences were hard and tough and serious but they didn't have good vocabulary to express their experiences. Now they use the high school students' language to tell the experiences of the small children. To teach the mechanism of the earthquake and the importance of preparedness they use the "Wall Newspaper". To the 5<sup>th</sup> year pupils the high school students show the experiment of the flood and teach the history of the heavy flood in Kobe by the newspaper they made.

The pupils learn something about the disaster mitigation and they are sure to talk about what they learned at school to their family members at home. While listening to the children's story, the parents may be interested in the disaster mitigation and then, the regional disaster mitigation may start.

**Events of disaster mitigation:** Every January 17<sup>th</sup> a memorial event for the victims of the Great Hanshin-Awaji disaster is held at Maiko High School. It will be held annually as the main event of Maiko High School. The purposes of the event are the collection, the arrangement and the transmission of the experiences of the Great Hanshin-Awaji Disaster and the construction of the base center of the disaster mitigation education. "The record collection" is published. It will be used as the teaching materials of both Maiko High School and other schools. In addition, we would like to

inform the world of the experiences of the Great Hanshin-Awaji Disaster. The students of the environment and disaster mitigation course work as the staffs. They will be engaged in planning workshops, requesting lecturers, coordinating workshops, publishing record collections, and so on. Schools must do the training of evacuation twice a year. The ordinary training are that after the fire alarm rings, the students evacuate to the school ground. The students seem less motivated and so they are not so serious in this training. At Maiko High School the conventional training of evacuation is changed into the new training with the disaster mitigation study at classroom or the lectures of disaster mitigation at school gym.

**Presentation outside of the school:** The teachers and the students are often invited to the seminars or the workshops outside of the school. We utilize these opportunity for both the advertisement of the course and the spread of the disaster mitigation education.

**International exchange with the children in Nepal:** Maiko High School started the international exchange with Nepal under the help of UNCRD Hyogo Office and NSET-Nepal. The purpose of the exchange is the international friendship and the exchange of the disaster experience. We also learn a lot from the activities of NSET-Nepal.

**Tasks:** The disaster mitigation education has just started and we don't have enough amount of the materials, nor the concrete approach to the education. Many teachers seem to be at a loss to do the disaster mitigation education. We put our results and information on the homepage of Maiko High School to support the teachers who are interested in or must do the disaster mitigation education but don't know how to or what to. Our task is to build this network of the disaster mitigation education among the schools.