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Disaster Education as an Access to Communities of Practice

07/09/2010

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Compare Indian ocean tsunami 2004 with Chilean tsunami 2010

- Many residents in the affected countries by Indian ocean tsunami did not have idea of tsunami
 - Early warning system has been installed and knowledge transfer (disaster education) has been implemented
- Japan has the early warning system and people have basic ideas of tsunami
 - Only 37.5% of people who got an evacuation order from the local governments

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Disaster Education in Japan

- People say “disaster education is important!”
- This sometimes lets us forget the reason of importance
 - = Even an activity does not contribute to disaster management, people can not criticize the activity as it is “disaster education”
- The term of “disaster education” became an excuse
- We have to return to the starting point
 - Disaster education is education for Disaster Reduction

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In this presentation

- Futures of the current disaster management is introduced
 - Integrated Disaster Management
- In order to realise the Integrated Disaster Management
 - Participatory Disaster Education

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Development Phases of Disaster Management in Japan

- From a long term perspective, Japanese disaster management can be divided into 3 development phases as follows
 - Phase1: Before 1961
 - Phase2: 1961 – 1995
 - Phase3: 1995 to date
- The disaster education for the phase 3 is currently needed in Japan

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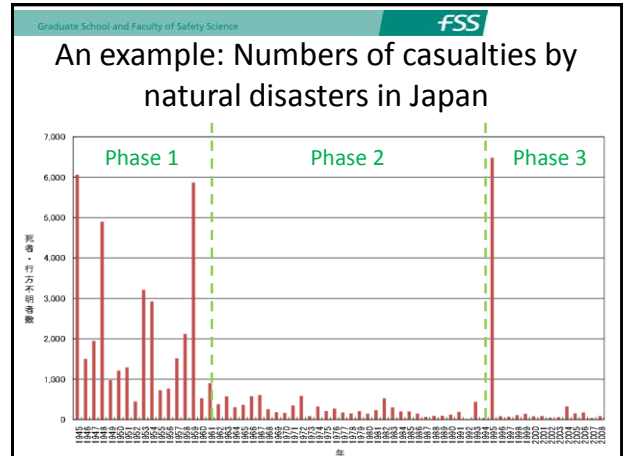
Phase 1 (Before 1961)

- After WWII, there was not enough budget for dealing with disasters in Japan as the country had spent much budget for the war
- Big earthquakes and many typhoons had hit several areas in Japan during the period
- As the result, almost every year, more than 1,000 people died by the disasters
 - 1959 Isewan typhoon brought severe damage in the central part of Japan. It killed more than 5,000 people
- *There were not enough hardware and software countermeasures during the phase 1*

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Phase 2 (1961 – 1995)

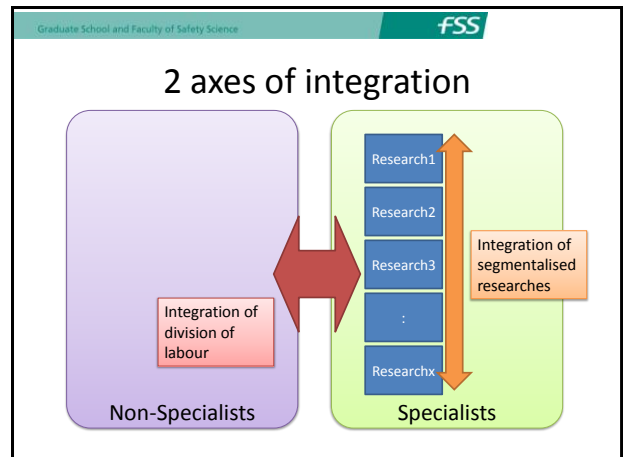
- Based on the lessons learned from Isewan typhoon, the disaster measures basic law was established in 1961
- By the basic law, around 20 billion dollars allocated as annual budget for disaster management
- Scientific and Engineering countermeasures have mainly implemented by specialists such as academics and public officers (But it has been segmentalised into each discipline)*



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Phase 3 (1995 to date)

- More than 6,400 people died by the 1995 Kobe earthquake
- Disaster management was far from the perfect
- There are 2 types of responses for improving disaster management
 - Should integrate segmentalised disaster researches (Improving specialists sector)
 - Should integrate division of labour for disaster management (Collaboration)



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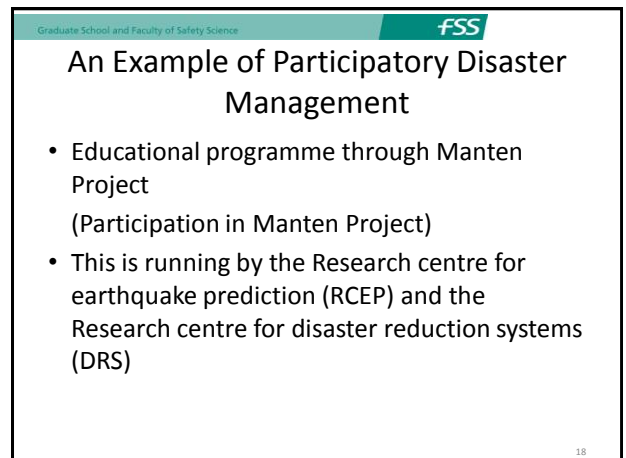
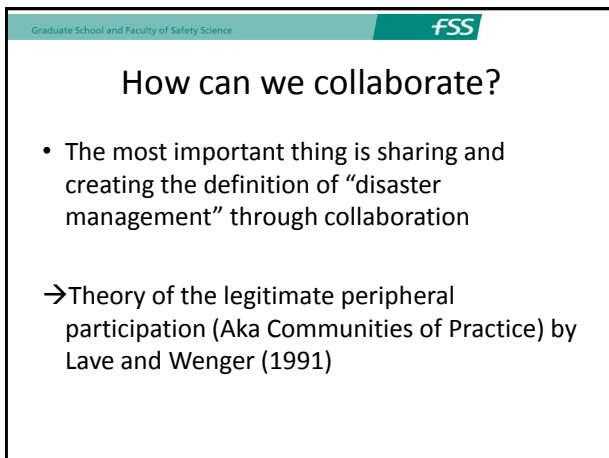
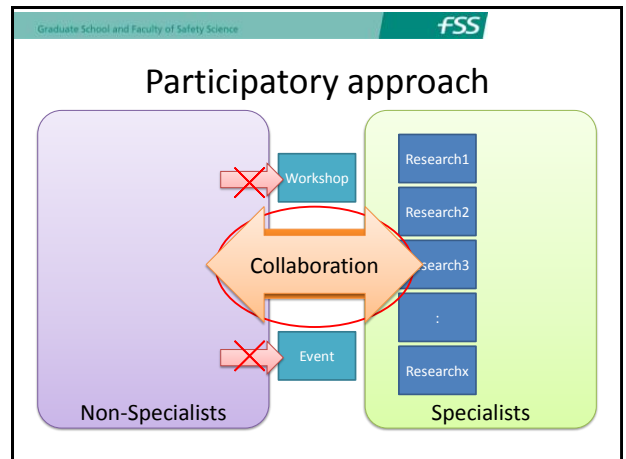
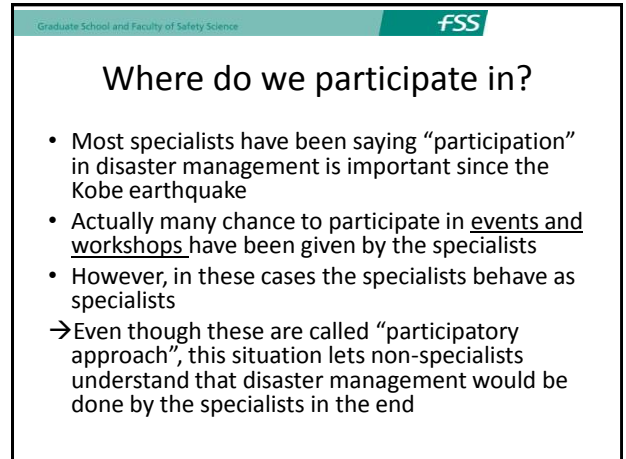
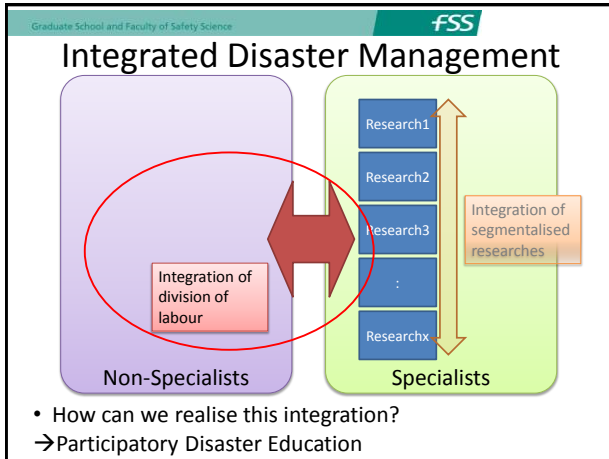
There are 2 viewpoints for disaster management

- Viewpoint from Specialists
- Viewpoint from Non-Specialists
 - They look at same thing, but appearance are not same
- Non-specialists don't see the inside of disaster management as these are black boxes
 - Non-Specialists lean on the specialists as they place too much confidence in the disaster management
- This is one of the lessons learned from Kobe earthquake

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Integrated Disaster Management as the Disaster Management for Phase 3

- Specialists should disclose what they know and what they don't know
 - Disaster education is one of the important components
- But if we define knowledge transfer as disaster education, the relation between specialists and non-specialists is fixed
- Sharing the meaning and perspective on disaster management through collaborative practice between specialists and non-specialists*



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Overview of Manten Project

- Network of high-density earthquake observation by off-line seismometers
 - This helps to predict the next earthquake from long time scale
- Issues over installing the seismometers
 - Expensive
 - Lead time
 - Maintenance



→RCEP has developed the new seismometer “Manten system”

19

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Manten System

- Seismometer and data logger

20

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Problems of Manten system

- Procedures before installing
 - Finding the Place
 - Negotiation with landlords
- Maintenance
 - Data collection from the logger
 - Battery change

→School is one of the appropriate places to install
→Educational programme was started

21

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Installing in Shimoyama elementary school

- 8th December 2009
- 5th and 6th grades pupils
- First half
 - Demonstration of Manten system
- Latter half
 - Installation of the system by the pupils

22

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Demonstration



23

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Installation



24

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Done!



25

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After the installation

- Every 2 month
- Data collection (Change the data card)
 - Checking the wave of tremor
- Improving the educational programme

26

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Rationale

- “Communities of Practice”
 - Concept proposed by Lave and Wenger (1991)
- People in a community of practice are connected by the practice
- People are usually joining in many communities of practice
 - Office, Laboratory, Tennis club etc.
- Manten Project = Community of Practice of earthquake prediction

27

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What is learning?

- Process of Legitimate Peripheral Participation(LPP) in Communities of Practice

28

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Features of LPP (1)

- Through participating in a CoP
- The person becomes to be able to do something
 - Meaning of the something for the person is changed
 - = Understanding the meanings of activities and terminologies in line with the culture and the history
 - It is impossible to cut learning process out from Communities of Practice
 - “Situated learning”
- Manten Project: The meaning of Seismology for the students will be changed by participating in the CoP

29

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Features of LPP (2)

- The meaning of activities and terminologies are not fixed
 - Society and period
 - Meanings are created by people in the CoP
- Participants create a new meaning of practice through collaboration
- Manten Project: There is a possibility that meaning of seismology which is even owned by specialists would be changed through collaboration

30

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What is “Participatory disaster education”?

- Participating in the Disaster management related Communities of Practice
- Not participating in the workshops etc.

→ Even if participating in virtual world, the actual world will not be changed

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Disaster education and Learning about Disaster

- Learning=Process of participating in CoP
- Education supports learning

→ Participatory disaster education should be defined as giving access to CoP of Disaster management

32

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Conclusions

- In order to realise disaster management for Phase 3 (in the most of developed countries)
 - Integration for division of labour for disaster management is needed for bridging the gap between specialists and non-specialists
 - For bridging the gap, participatory disaster education, that is an access to Communities of Practice of disaster management should be provided

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Thank you very much!