

COMPLETION REPORT

Learning from Japan: Education on Climate Change and Disaster Risk Reduction

Dr. Mageswary Karpudewan
Senior Researcher
School of Educational Studies, Universiti Sains Malaysia

Education is frequently proclaimed as an important tool to impart the knowledge on climate change and disaster risk reduction. As such through this study attempt has been made to learn from Japan on the execution of this education. The knowledge gained was used as a guide in preparing similar education in Malaysia. For this purpose a visit was performed to learn about the Environment and Disaster Mitigation Course implemented at Maiko High School at Hyogo Prefectural. The course was developed from the *Great Hanshin-Awaji (Kobe)* earthquake experiences. The important roles of the schools are at the time of the disaster schools are identified as a place for seeking protection and disaster mitigation education to take place. From the great disaster also people learnt that they had very little awareness about the disaster and less prepared for the disaster. Hence, this course at Maiko High School is aimed at educating the students towards developing community of leaders who can consider living and exist in the symbiosis society. The content of the course is spread out for the whole duration of junior high schooling (3 years) which require the students to complete a total of 27-31 credit hours. The course content includes learning about science and natural environment; society and natural environment as well as provide practical experiences of both these contexts. Many guest teachers from various organization including police, fire stations, universities, city and prefectural and volunteer organizations were invited to share their experiences. Additionally, field trips visiting disaster related institutes; museums; memorial parks and disaster impacted areas is also part of the course content. As a component of transmitting the information of the course to others, students are required to work together with an elementary school. Besides these the formal learning also requires students to work collaborative in solving problems and use computers to prepare reports and presentation. In other words this course permits the students to master fundamental computer skills. The in-depth study of the course content at Maiko High School has provided guidance in preparing climate change and disaster risk education (CCDRE) module to be used in Malaysian schools. Following this exemplary, in Malaysian context a partnership between the university, local government, state education department and the participating schools have been established. A total of 372 students were posed with problems related to the change climate and frequent flooding. The issues were integrated as part of science curriculum. A total of 52 teachers were trained to implement the module. Invited guest teachers were called from various local institutions to share their experiences; onsite field visit were performed; in addition to formal classroom learning which focused on discussing climate change related issues more practical based CCDRE were implemented. The teachers participated in two different training workshops exhibited increase in the knowledge and were identified utilizing climate change issues and disaster mitigation strategies as a new pedagogical strategy. The module also has significantly improved students' knowledge about climate change; disaster mitigation; pro-environmental attitude and behavior.

Publication of the Results of Research Project:

Verbal Presentation (Date, Venue, Name of Conference, Title of Presentation, Presenter, etc.)

Thesis (Name of Journal and its Date, Title and Author of Thesis, etc.)

1. Mageswary Karpudewan, Mohd Nor Syahrir Abdullah and Chang Fui Seng. Learning from Japan on Adapting Climate Change and Disaster Risk Education into the main stream Malaysian Education. *International Journal of Environment and Science Education*. (The writing will be submitted soon).
2. Mageswary Karpudewan & Nur Sabrina Mohd Ali Khan. Experiential-based Climate Change Education: Fostering Students' Knowledge and Motivation towards the Environment. *International Research in Geographical and Environmental Education* (Accepted with minor correction).

Book (Publisher and Date of the Book, Title and Author of the Book, etc.)

1. Chua Kah Heng, Mageswary Karpudewan and Kasturi Chandrakesan. Climate Change Activities: A Possible Means to Promote Understanding and Reduce Misconceptions about Acid Rain, Global Warming, Greenhouse Effect and Ozone Layer Depletion among Secondary School Students. In Karpudewan et al., (2017) Ed. *Misconceptions in Science: Strategies from Malaysia (in press)*. Springer: Singapore. Ltd (The chapter in the book is at the final stage of preparation)