

# Research on Prospective Elementary School Teachers' Perceptions for Disaster Prevention Education



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# Introduction

- **The Great East Japan Earthquake:**  
Date and Time : 11 March 2011 14:46  
Magnitude : 9.0 (interim value; the largest earthquake recorded in Japan)  
Epicenter : N38.1, E142.9 (130km ESE)
- **Main aftershocks:**  
On April 7, an earthquake of magnitude 7.4  
On April 11, an earthquake of magnitude 6.3 (preliminary estimate)

# How bad was human suffering due to the earthquake and tsunami?

- The earthquake and tsunami devastated the Tohoku district and other regions. Damages were inflicted in Kanto district, too. The number of deaths is 15,560, the number of injured is 5,689, and the number of missing is 5,329 (as of July 13 according to the National Police Agency).
- The number of those evacuated is approximately 111,532 (as of July 7 at 15:00 according to the Disaster Management Agency). [http://www.mofa.go.jp/j\\_info/visit/incidents/index.html](http://www.mofa.go.jp/j_info/visit/incidents/index.html)

## 津波到達 警戒薄く

74人死亡・不明の宮城・大川小



## Tragedy at Okawa Elementary School



Okawa elementary school is in Ishinomaki, Miyagi. Tsunami overcame children who had tried to move to the safety place. 74 of 108 whole school students, 10 of 13 teachers became the dead or missing.

## Seriously consider what teacher trainer can do

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- ❑ In disaster, elementary schools will have most serious damage.
  - ❑ Although there are some researches on in-service teachers and pupils for disaster prevention, little attention has been given to pre-service teacher's perception for it.
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## Purpose & Method

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- ❑ The purpose of this study is to investigate the characteristics of prospective elementary school teachers' awareness in disaster prevention education.
- ❑ For this purpose, we conducted a questionnaire investigation for 96 subjects. Data were gathered in November 2011.

## Primary Findings

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- ❑ Pre-service elementary school teachers have interest in disaster reduction education to study professional issues
- ❑ Six factors extracted from their consciousness by factor analysis
- ❑ Highly technical three factors had positively affected confidence in judgment, instructions under disaster, and development of pupil's independence during usual activity.

## Questionnaire investigation

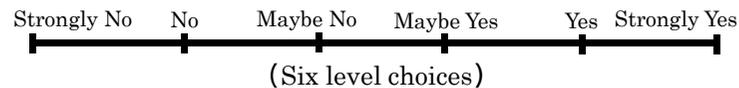
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- the questionnaire has two parts.
- ❑ Part A is to identify their levels of interests about disaster prevention education.
  - ❑ Part B is to check their levels of confidence to teach the disaster prevention for pupils
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## Part A of questionnaire

- Q1. I'm interested in disaster prevention.  
 Q2. I'm interested in disaster prevention education.  
 Q3. I would like to take a lecture on school safety.  
 Q4. I would like to hear from experts of disaster prevention.  
 Q5. I would like to hear from afflicted people.



## Results of Part A

N=96	Average	SD
Q1(P) **	4.73	1.06
Q2(P) **	4.82	0.91
Q3(P) **	4.81	0.95
Q4(P) **	4.64	0.94
Q5(P) **	5.03	0.98

Therefore, prospective elementary school teachers have interest in disaster reduction education to study professional issues

## Part B of questionnaire

Confidences for Pedagogical Contents Knowledge

- ☑ (a) Items on the earthquakes & tsunamis and terrain & facilities. (11 items)
- ☑ (b) Items on the nature or cause of the earthquake & tsunami. (11 items)
- ☑ (c) Items on disaster prevention. (11 items)

Confidences for Pedagogical Skills

- ☑ (d) Items on disaster prevention Education. (6 items)
- (Six level choices)

## Results of Part B Factor Analysis

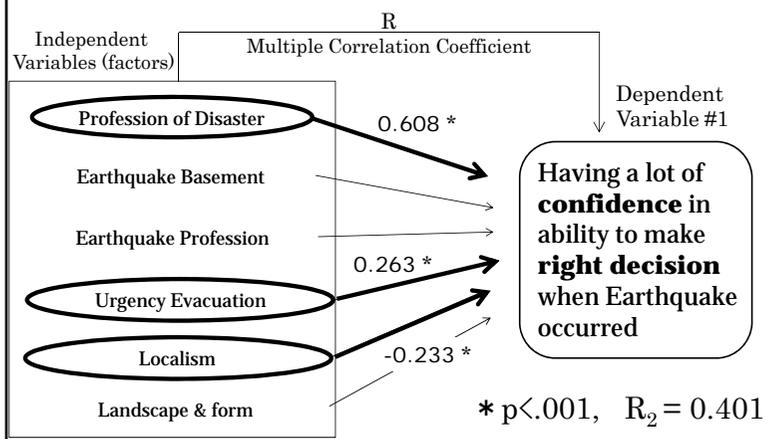
Item	1	2	3	4	5	6
To explain how to use the priority telephone links in disaster	0.798	0.120	0.147	0.264	0.070	0.129
To explain the correspondence to local residents have been evacuated to school	0.731					0.098
To obtain the correct information	0.773					0.141
To explain the emergency supplies that should be in homes and schools	0.755					0.031
To explain the differences of disaster in some communities	0.750					0.113
To explain the contingent like a landslide that befalls with earthquake	0.628	0.464				0.210
To explain the social impact such as the exodus caused by the earthquake	0.609	0.380				0.178
To explain the cause of earthquakes associated with the plate movement	0.188	0.649				0.366
To explain the difference between preliminary tremors and principal motions	0.067	0.888				0.079
To explain the relationships and differences between intensify and magnitude	0.160	0.673	0.121			0.144
To explain the technology that put into practical use after the disaster	0.278	0.277	0.351			0.167
To explain the mitigation Tsunami	0.067	0.110	0.835			0.147
To explain the earthquake swarm			0.821			0.147
To explain the difference among preparedness for evacuation, evacuation, and et		0.3	0.129	0.693	0.283	0.167
To explain the hazard map of the region from blank one		1	0.170	0.703	0.65	0.147
To explain why on tsunami monument built		0.364	0.061	0.151	0.024	0.302
To explain the difference between assembly area and evacuated area						0.073
To explain the reason why tsunami becomes high in the coastline		0.189	0.237	0.142	0.188	0.118
To explain the earthquake occurrence areas associated with Pacific orogeny belt						0.745

Factor Scores (Weighted Average) : 0.469

Cronbach's coefficient  $\alpha$  : 0.661

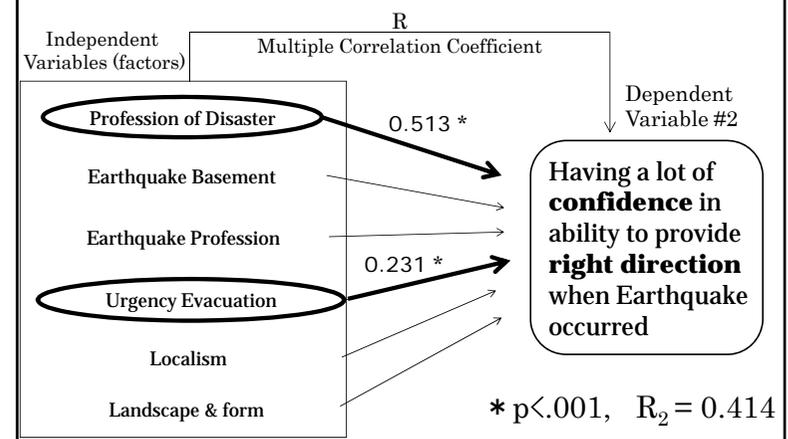
## Results of Part B

### Multiple Linear Regression Analysis



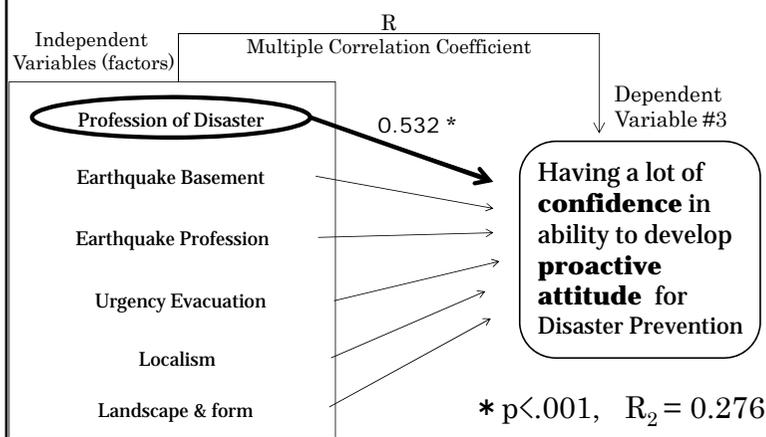
## Results of Part B

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## Short Discussion

- ☞ Specially, three factors (*Profession of Disaster Preventional factor* (#1), *Urgency Evacuation factor* (#4), *Localism factor* (#5), ) had positively affected prospective teacher's confidence under disaster.
- ☞ So far, we have seen what it is important to develop the prospective teacher from a viewpoint of disaster prevention education in pre-service teacher training.