Disaster Preparedness and Readiness of an Institution in one ASEAN Country

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Abstract

Disaster preparedness and readiness are important in institutions to prevent damage to property and to safeguard the life of students. The purpose of this paper is to know the level of readiness of the public secondary school in Bangkok specifically in Wat Dusitaram Secondary School on disaster risk reduction and management. This study dealt with disaster risk reduction and management of the public secondary schools in Bangkok. It descriptive survey research which use the survey method of research. Data were gathered, tabulated and analyzed. The total respondents are from the regular teachers of Wat Dusitaram Secondary school where disaster risk reduction and management being measured. Female teachers dominated the total number of respondents. The teachers have a favorable attitude that serves as a second mother in school, and their knowledge and skills on disaster risk reduction management are being measured. The level of readiness and level of participation towards disaster risk reduction and management are used. All schools should be given drills and training on disaster risk reduction and management to develop their skills and knowledge when it comes to the disaster that may occur in school.

Keywords: Disaster Preparedness

INTRODUCTION

An advanced search of EM-DAT indicates a total of 131 natural disaster events in Thailand from 1955 to 2014, with floods (72) and storms (33) being the major disasters by disaster type. However, earthquakes (including tsunami) disasters have the highest death rate by 29.8 percent (8,847) of all disaster types. The second-high death rate, 13 percent, has been from the flood disaster. Flood disaster is most dominant regarding the number affected (30.7 percent, 55,542,471) and economic damage (47.5 percent, 45 billion USD). Drought has also had a serious impact on the number affected (16.5 percent). The Thai Country Profile of EM-DAT indicates the top 10 disasters by death toll, affected and economic damage [1]–[3]. The death toll list explains that the Indian Ocean tsunami in 2004 had a huge influence, with droughts and floods being the major events on the affected numbers. The economic damage list shows the tremendous impact of the 2011 Chao Phraya River flood which inundated seven industrial estates/parks in the central region of Thailand.

Almost every year, many dangerous events and disasters escalate to crises and emergencies resulting in mass casualties due to our lack of training and preparedness about these disasters. In fact, the Center for Research in the Epidemiology of Disaster (CRED) in Brussels, Belgium reported that ASEAN countries have had the most natural disasters during the years 1990-1999 [4]. These disasters overwhelm local capacity, cause great damages, destruction and human sufferings necessitating a request to national or international agencies for external assistance.

Thailand, just like any other country in Asia, is prone to disasters. With typhoons occurring in the country every year, the Chao Phraya River inundates including its tributaries causing floods in the country especially those near the banks of the river. This flood causes loss of life and property damages to a lot of people including the government.

The booming population in the country which can be largely attributed to increasing birth rates and exacerbated further the very high number of tourist arrivals has created a plethora of problems that may further lead to disaster. The increased population density in any specific area of the country predisposes such to the occurrence of fires which may also cause irreparable damages to properties and loss of life. These situations are also almost a given in highly populated areas like schools, churches, malls, airports and many more. Not that we are praying that disasters would strike in these areas, but the material issue is whether the population comprising these areas are prepared to cope up with such disasters and whether the government, as well as the companies involved, have functional contingency plans when disaster strikes. Technology competencies and use of tools in teaching improve as time goes by [5], [6], but the administrator should not only look on the competencies of the teachers and proficiency of students [7] but also should continue to monitor the safety of the students.

Because of these alarming situations, efforts have to be made to build people's capacities and resilience to disasters. The policy of increasing awareness about disasters necessitates the strengthening of the country's disaster risk reduction and management system that would provide for the development of policies and plans and the implementation of actions and measures pertaining to all aspects of the World Conference on Disaster Reduction held in Kobe, Japan in a global commitment to implement the HYOGO Framework for Action. Next, the country is also a member of the ratification of the Association of Southeast Asian Nations (ASEAN) Agreement on Disaster Management and Emergency Response (AADMER). This regional policy framework has been translated into a concrete Work Programme for 2010-2015. The Philippines through the Office of the Civil Defense as the National Focal point for AADMER, identified as lead shepherd country for many AADMER programs and projects [8], [9].

With these proposed approaches and policies, it is expected that the effects of disasters in the country will be reduced. However, this is better said than done. There are many more disasters that will be struck the country and maybe even more destructive than the previous ones necessitating the participation of schooling institutions in the effort of squarely addressing this problem.

Public schools are mandated in meeting the challenges of the government in the delivery of efficient and effective educational services to their students as well as to meet the work needs and satisfaction of its teachers. The different schools in

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Thailand like the Dusitaram Secondary School, have grown bigger through the years especially its enrollment because parents believe and trust in the quality of instruction being delivered by these schooling institutions. As such, it has become an integral institution in the lives of the citizens as it provides them the much-needed education services in support of the government's program of providing quality education to all Thais so the youths can become responsible, morally upright and productive partners in development.

The Dusitaram Secondary School is not privy to the different disasters and calamities happening in our country and the economic and physical losses that are attached to it. Along this vein, it is important that schooling institutions must transform itself into a different mode, that of a "change of mentality and of lifestyle" in response to the growing global campaign for disaster prevention and resilience. Schools must realize that there is a growing need to train and help people organize themselves in times of disaster. It has to become active by including disaster preparedness as part of their curriculum as well as stepping up its role in raising community awareness in times of disaster.

As such the Dusitaram Secondary School have to start organizing its disaster risk resilience teams to train and serve as the point persons in their respective communities specifically along the following areas: (a) updates on environmental hazards in their respective areas of concern and initiatives for disaster risk reduction and mitigation, (b) present and discuss issues and concerns by catholic schools in responding to emergency situations and to calls for help in calamity-hit areas outside their jurisdiction, (c) share protocols or practices by other schools in responding to emergencies and disasters within the school, in the community and in other areas outside the region and (d) agree on general guidelines for coordinated disaster response among schools in their region.

It is therefore imperative for teachers and all the teaching staff/personnel of Dusitaram Secondary School to bring out their best performance in the school setting since what is at stake is not only the intellectual and spiritual well-being of their students and employees but their life as well, especially during disasters. If teachers, students, and all the employees are to function a notch higher than usual, they have to work closely not only with each other but with the community as well, so that the aims and mission of the school as far as disaster preparedness and prevention is concerned are clearly defined, blocks and barriers towards achieving defined targets are identified, ways to support each other are pinpointed, compromise or agreements and requests on how each person can participate better can be modified, and thereby generate a collective commitment among all personnel in support to the mission of preparing everyone through civic education, disaster mitigation, preparedness and management, be achieved.

Against this backdrop of the situation obtaining in the disaster preparedness, reduction and management of Dusitaram Secondary School in Thailand, the researcher became interested in conducting a study along this line with the end view of using these as bases in improving the quality of disaster and risk reduction services being rendered in the said institution.

STATEMENT OF THE PROBLEM

Generally, this study evaluated the preparedness and participation of the parents, teachers, and students to the disaster risk reduction management as assessed by the teachers of the Dusitaram Secondary School in Bangkok, Thailand. Specifically, it answered the following questions:

1. What is the profile of the teachers of the Dusitaram Secondary School in terms of their:
   a. Age
   b. Sex
   c. civil status
   d. educational attainment
   e. academic rank/designation
   f. years of teaching experience
   g. number of training related to disaster and risk reduction management
2. What is the level of readiness of teachers on

disaster risk reduction management as assessed by the teachers along:
   a. Structural Safety Code
   b. Non-structural Safety Code
   c. Availability of Emergency Supplies and Equipment
   d. Servicing and Maintenance?

3. What is the level of participation of teachers on disaster risk reduction management as assessed by the teachers along:
   a. Organization
   b. Mitigation
   c. Preparedness
   d. Response, and
   e. Recovery and monitoring?
4. Is there a significant relationship between the level of readiness of teachers, and school heads on disaster risk reduction management and their profiles?
5. Is there a significant relationship between the level of participation of teachers on disaster risk reduction management and their level of readiness?

HYPOTHESIS

This hypothesis will be tested at 0.05 level of significance

1. There is a significant relationship between the level of preparedness/readiness of teachers on school disaster risk reduction management across the profile of the respondents.
2. There is a significant relationship between the level of participation of teachers on school disaster risk reduction management across the profile of the respondents.

SCOPE AND DELIMITATION OF THE STUDY

This study is about risk reduction management and preparedness of Dusitaram Secondary School in Bangkok, Thailand. Data will be sourced out from regular teachers of the said school. The risk reduction management is limited to responsibilities of school heads and teachers and it will be delimited to mitigation measures undertaken, preparedness measures are undertaken and level of awareness of students on keeping them safe during times of disaster.

SIGNIFICANCE OF THE STUDY

This study on risk reduction management and preparedness of Dusitaram Secondary School in Bangkok, Thailand is significant to the following:

*School Heads/Directors***.** This study will help establish the culture of safety at all levels, systematize the protection of education investments and to ensure continued delivery of quality education services. Through this study, school heads, teachers and students will know how prepared the school is in times of disaster. It will also provide important information like the conduct of activities regarding mitigation measures and preparedness measures, which are the determining factors for the preparedness of the schools. If found that there are activities/ measures that are lacking or inadequate, the school heads could organize an activity or create a school policy related to disaster management.

*Teachers***.** Disaster preparedness shall integrate into any activities like disaster plan, execution, and implementation. Teachers are expected to be ready to perform his/ her teaching responsibility. It is also expected that teachers are also ready in times of disaster. This study will make the teachers aware of the level of preparedness of their schools, themselves and their students. Because of this, they could provide ideas/suggestions to the school heads regarding disaster management.

Researchers. Other researchers could source out relevant information in this study.

METHODOLOGY

This study will use a descriptive type of research. This method involves collecting data in order to answer questions concerning the current status of the subject of the study. This method is appropriate since descriptive research describes systematically the facts and characteristics of a given population area of interest factually and accurately. Further, descriptive studies provide an accurate description of a situation or of an association between variables from which one can then make some statements about a certain group of population, accuracy, and reliability become important considerations in descriptive research. Respondents of the Study

The respondents of this study will be the

school teachers in Dusitaram Secondary School in Bangkok, Thailand. The 30 population of the regular teachers will be taken as respondents of the study.

Data-gathering Instrument

The survey questionnaire will be utilized in order to gather data from the two groups of the respondent –school heads and the teachers.

The survey questionnaire for school heads has five parts. Part 1 is about the profile of school as to years of existence, number of personnel, number of students, and vulnerability of school. Part 2 will deal with their level of performance on disaster risk reduction management. Part 3 will deal with the level of performance of school heads on disaster risk reduction management. Part 4 will concentrate on the level of preparedness of their school along with preparedness measures undertaken and mitigation measures undertaken. Part 5 is about the problems they encountered in performing their responsibilities.

For teachers, their survey questionnaire consists of three parts. Part 1 will deal with the level of performance of school heads on disaster risk reduction management. Part 2 will deal with the level of performance of school DRRM coordinators on disaster risk reduction management. Part 3 is about their awareness of coping with disasters.

The indicator for the level of performance of school heads and school disaster risk reduction management coordinators were taken from DepEd order NO. 21, s. 2015 or the Disaster Risk Reduction and Management Coordination and Information Management Protocol from the Philippines.

In crafting the questionnaire to the preparedness of the school in terms of the level of awareness of teachers in coping with disasters, the DepEd Order No. 26, s. 2006 in the Philippine will be utilized and adopted.

Data-gathering Procedure

In order to start the data gathering procedure, the researcher will ask permission from the Dusitaram Secondary School Principal Dusitaram Secondary School /School Head in Bangkok, Thailand; The PSU University President through the Executive Director of the PSU-Open University Systems. Approval Letter from the Executive Director of the PSU-OUS will then be presented to the Schools Head of Dusitaram Secondary School to seek endorsements and further approval to administer the questionnaires. After this, the researcher will make an appointment with the school head and teachers to discuss the methods of data gathering. The data gathering instrument is through google forms survey questionnaire sent to the teacher-respondents email or facebook accounts.

Statistical Treatment of Data

To describe the profile of the teachers in Dusitaram Secondary School, frequency and percentages were used.

The level of readiness of teachers on disaster risk reduction management as assessed by the teachers was presented through the distribution of their responses using a five-point Likert scale and interpreted using the following mean scale:

Scale	***Mean Scale***	***Descriptive Equivalent***
5	4.51-5.00	Very much high
4	3.51-4.50	Much ready
3	2.51-3.50	Moderately ready
2	1.51-2.50	Slight ready
1	1.00-1.50	Not ready

To describe the data on the level of readiness of teachers and school heads on disaster risk reduction management as assessed by the teachers, distribution of their responses was also presented using a five-point Likert scale and interpreted using the following mean scale:

Scale	***Mean Scale***	***Descriptive Equivalent***
5	4.51-5.00	Very High Participation
4	3.51-4.50	High Participation
3	2.51-3.50	Moderate Participation
2	1.51-2.50	Slight Participation
1	1.00-1.50	No Participation

To assess the significance of the relationship

between the level of readiness of teachers and school heads in disaster risk reduction management and their profiles, Cramer's V which is a chi-square test based measure was employed.

On the other hand, the significant relationship between the level of participation
Of teachers and school head teachers on disaster risk reduction management to their level of readiness was determined using a nonparametric test of association, the Spearman's rho Correlation.

RESULTS AND DISCUSSION

This part of the study presents the analyses and interpretation of results of the data gathered from the study to identify the demographic profile of the teachers, the Disaster Readiness of Public School in Bangkok, and the relationship between these variables.

Demographic Profile of the Teacher

The demographic profiles of the teachers included in this study include age, gender, civil status, educational background, academic rank, years of teaching and number of training related to DRRM.

Table 1
Demographic Profile of the Teacher 1a. age

Age Category	Frequency	Percent
21-30 years old	15	50.0
31-50 years old	12	40.0
51 years old and above	3	10.0
Total	30	100.0

On this table shows that of the total 30 teacher-respondents, 15 or 50% belonged to the middle age bracket of 21 to 30 years old; 12 or 40% have ages ranging from 31 to 50 years old, and the remaining 3 or 10% are 51 years old and above. Thus the younger teachers are surprisingly well familiar with disasters than the older teachers. But, they were found confused about the disaster adaptation process than the older teachers (Gangalal Tuladhar, 2013).

1b. sex

Sex	Frequency	Percent
Female	20	66.7
Male	10	33.3
Total	30	100.0

As shown in this Table, 20 or 66.7% of the teacher-respondents were female and 10 or 33.3% were male. Data on the Table shows that the female teachers outnumbered the male teachers.

As much as the result of school enrolment of boys is significantly lower than girls in Thailand and most of the boys PISA examination got lower scores which nullified them to enroll in college, and most of the were dropped-out from either from high school and college.

1c. civil status

Civil Status	Frequency	Percent
Married	9	30.0
Separated	1	3.3
Single	20	66.7
Total	30	100.0

As shown the table shows the civil status of the total teacher respondents 20 or 66.7% of the teacher-respondents are single, 9 or 30% are married and 1 or 3.3 % are separated from a partner.

1d. educational attainment

Civil Status	Frequency	Percent
Baccalaureate Graduate	19	63.3
Master's graduate	4	13.3
With Doctoral Units	1	3.3
With Master's Unit	6	20.0
Total	30	100.0

As shown in this table that most of the teacher-respondents are Baccalaureate graduates with a total of 19 or 63.3%, 6 or 20% are with Master's unit, 4 or 13.3% are Master's graduates and while the other hand 1 or 3.33% got a Doctoral unit.

1e. academic rank/designation

Academic rank/designation	Frequency	Percent
Master Teacher I-III อาจารย์ *(Achan)*	3	10.0
Teacher I-III	27	90.0

ศาสตราจารย์ (*Sattrachan)*		
Total	30	100.0

Table shows, 27 or 90% of the teacher-respondents have the academic rank as Teacher I-III, 3 or 10% are Master teacher I-III. For the reason that most of the teacher remains in academic rank of teacher I to teacher III because of the same reasons that in most cases the budget intended for teacher professional development were compromised

1f. years of teaching experience

Years of teaching experience	Frequency	Percent
11-20 years	**7**	**23.3**
2 years below	**4**	**13.3**
21 Years and above	**4**	**13.3**
3-10 years	**15**	**50.0**
Total	**30**	**100.0**

This table shows, that 15 or 50% of the total **Risk and Reduction Management** teacher-respondents have 3-10 years of teaching experienced, 7 or 23.33% have 11-20 years of teaching experienced, 4 or 13.33% have 21 years and above and finally 4 or 13.33% have 2 years and below of teaching experience.

1g. a number of training related to disaster and risk reduction management?

Number of training related to DRRM	Frequency	Percent
1-2	8	26.7
none	16	53.3
three and above	6	20.0
Total	30	100.0

As shown in Table, it shows that 16 or 53.3% of the teacher-respondents have none attended training or seminars related to DRRM, 8 or 26.7% got 1-2 trainings attended and 6 or 20% have attended or undergone 3 or more training.

Level of Readiness of Teachers on Disaster

Table 2
Level of Readiness of Teachers on Disaster Risk Reduction Management along Structural Safety Code

Structural Safety Code	Very Much High	Much Ready	Moderately Ready	Slightly Ready	Not Ready
1. Heavy objects/furniture are placed low and securely fastened	3 (10.0%)	7 (23.3%)	16 (53.3%)	1 (3.3%)	3 (10.0%)
2. Evacuation routes are free from hazards	4 (13.3%)	11 (36.7%)	11 (36.7%)	2 (6.7%)	2 (6.7%)
3. Dead and broken limbs are removed from trees	5 (16.7%)	11 (36.7%)	8 (26.7%)	4 (13.3%)	2 (6.7%)
4. Columns or beams are not compromised by cutting, exposing or making holes in them. Exposed steels and covered with concrete mortars	6 (20.0%)	9 (30.0%)	10 (33.3%)	3 (10.0%)	2 (6.7%)
5. Sufficient and overlapping vertical steels in columns and beams.	5 (16.7%)	10 (33.3%)	10 (33.3%)	3 (10.0%)	2 (6.7%)
6. Buildings of different storeys are of the same height and have openings of same sizes and locations	4 (13.3%)	13 (43.3%)	8 (26.7%)	4 (13.3%)	1 (3.3%)
7. Concrete building with continuous, even and greatly connected moment frame are reinforced.	4 (13.3%)	12 (40.0%)	9 (30.0%)	4 (13.3%)	1 (3.3%)

8. Masonry, stone and adobe with an earthquake tie beams are utilized	5 (16.7%)	8 (26.7%)	11 (36.7%)	6 (20.0%)	0
Weighted Mean: 3.417 (Moderately Ready)					

Legend: 5 =Very Much High, 4 =Much Ready, 3 =Moderately Ready, 2 =Slight Ready, 1= Not Ready

Table 2, demonstrate the findings on the extent level of readiness on disaster risk reduction management of Wat Dusitaram Secondary School. Readiness means that one facility or school is fully equipped, ready and capable when it comes to Structural Safe Code.

The findings showed that the overall weighted mean for the teacher-respondents level of readiness along structural safety code is 3.4 and was interpreted as "Moderately Ready".

For the reason schools in most developing countries fail to protect children from the consequences of natural disasters and accidents and Thailand is one of the fast-developing countries that committed to examine and evaluate each school about structural safe code.

Table 3

Level of Readiness of P Teachers and on Disaster Risk Reduction Management along Non-structural Safety Code

Non-structural Safety Code	Very Much High	Much Ready	Moderately Ready	Slightly Ready	Not Ready
Hazardous chemicals are isolated, eliminated and secured	8 (26.7%)	9 (30.0%)	7 (23.3%)	6 (20.0%)	0
All electrical wirings are in good condition, not overloaded and electrical system is maintained.	4 (13.3%)	13 (43.3%)	10 (33.3%)	3 (10.0%)	0
All gas vents and connections are in good condition	6 (20.0%)	11 (36.7%)	7 (23.3%)	6 (20.0%)	0
Evacuation supplies are within easy reach	4 (13.3%)	11 (36.7%)	7 (23.3%)	7 (23.3%)	1 (3.3%)
Roofs, gutters and air conditioning units are clear of leaves and debris	5 (16.7%)	11 (36.7%)	8 (26.7%)	5 (16.7%)	1 (3.3%)
Outward opening mechanisms of all classrooms	3 (10.0%)	11 (36.7%)	11 (36.7%)	3 (10.0%)	2 (6.7%)
Install automatic natural gas off valves at building level	4 (13.3%)	8 (26.7%)	12 (40.0%)	5 (16.7%)	1 (3.3%)
Handles or other fastening device on doors are provided	3 (10.0%)	13 (43.3%)	6 (20.0%)	8 (26.7%)	0
Weighted Mean: 3.45 (Moderately Ready)					

Legend: 5 =Very Much High, 4=Much Ready, 3=Moderately Ready, 2 =Slight Ready, 1= Not Ready

In table 3, it showed and interpreted the findings on the extent of readiness of the teacher- respondents along with the non-structural safe code.

In total the overall weighted mean is 3.45 which fell into "Moderately Ready" and this was how extent the readiness of the teachers when it comes to non-structural safe code.

Table 4

Level of Readiness of Teachers on Disaster Risk Reduction Management along Availability of Emergency Supplies and Equipment

Availability of Emergency Supplies and Equipment	Very Much High	Much Ready	Moderately Ready	Slightly Ready	Not Ready
Non-perishable food items, potable water,	5	8	9	8	0

first aid kit	(16.7%)	(26.7%)	(30.0%)	(26.7%)	
Flashlight and battery powered radio with extra batteries	3 (10.0%)	6 (20.0%)	12 (40.0%)	7 (23.3%)	2 (6.7%)
Back-up generators with fuel	3 (10.0%)	6 (20.0%)	12 (40.0%)	7 (23.3%)	2 (6.7%)
Map of area for evacuation and locating shelters	4 (13.3%)	7 (23.3%)	7 (23.3%)	11 (36.7%)	1 (3.3%)
Whistle, alarm or buzzer or early warning device	7 (23.3%)	7 (23.3%)	8 (26.7%)	8 (26.7%)	0
Utility knife and kitchen utensils, matches are kept in a water-proof container	4 (13.3%)	6 (20.0%)	8 (26.7%)	11 (36.7%)	1 (3.3%)
Light search and rescue gear	2 (6.7%)	7 (23.3%)	10 (33.3%)	9 (30.0%)	2 (6.7%)
Fire extinguisher (Class A, B, C and D)	8 (26.7%)	5 (16.7%)	10 (33.3%)	6 (20.0%)	1 (3.3%)
Surveillance Camera	8 (26.7%)	8 (26.7%)	9 (30.0%)	4 (13.3%)	1 (3.3%)
Weighted Mean: 3.211 (Moderately Ready)					

Legend: 5 =Very Much High, 4 =Much Ready, 3 =Moderately Ready, 2 =Slight Ready, 1= Not Ready

Table 4 interpreted the findings of the teachers – respondents on the extent of readiness along with the availability of emergency supplies and equipment on disaster risk reduction management (DRRM).

In general, the overall weighted mean is 3.21 which interpreted as "Moderately Ready". And this was the extent of readiness of the teachers when it comes to the availability of supplies and equipment.

Table 5
Level of Readiness of Teachers on Disaster Risk Reduction Management along Servicing and Maintenance

Servicing and Maintenance	Very Much High	Much Ready	Moderately Ready	Slightly Ready	Not Ready
Periodical maintenance and servicing of fire extinguishers	5 (16.7%)	5 (16.7%)	13 (43.3%)	5 (16.7%)	2 (6.7%)
Hydrostatic test is performed every 5 years	4 (13.3%)	5 (16.7%)	12 (40.0%)	7 (23.3%)	2 (6.7%)
Static electricity are prevented from accumulating on machines or equipment	5 (16.7%)	5 (16.7%)	16 (53.3%)	2 (6.7%)	2 (6.7%)
Maintenance of the emergency alarm bell system	6 (20.0%)	4 (13.3%)	13 (43.3%)	4 (13.3%)	3 (10.0%)
Monitoring the efficiency of the approved type heat and smoke detection	4 (13.3%)	5 (16.7%)	14 (46.7%)	4 (13.3%)	3 (10.0%)
Provision and maintenance of the fire service connection	5 (16.7%)	6 (20.0%)	11 (36.7%)	5 (16.7%)	3 (10.0%)
Provision and maintenance of handrails	4 (13.3%)	7 (23.3%)	12 (40.0%)	5 (16.7%)	2 (6.7%)
Fire extinguisher (Class A, B, C and D)	6 (20.0%)	5 (16.7%)	12 (40.0%)	6 (20.0%)	1 (3.3%)
Weighted Mean: 3.192 (Moderately Ready)					

Legend: 5 =Very Much High, 4 =Much Ready, 3 =Moderately Ready, 2=Slight Ready, 1= Not Ready

Table 5 showed the results of the data gathered on the extent of readiness of the teachers along with servicing and maintenance.

In general the overall weighted mean fells into 3.19 which interpreted as "Moderately Ready" and this was the extent of readiness of the teachers when it comes to servicing and maintenance.

3.3 Level of Participation of the Teachers on Disaster Risk Reduction and Management

Table 6 listed the findings of the gathered data when it comes to the extent of the teacher's participation along with organization on the disaster risk reduction management.

Table 6
Level of Participation of Teachers on Disaster Risk Reduction Management along Organization

Organization	Very High Participation	High Participation	Moderate Participation	Slight Participation	No Participation
Establishment of action team which comprise the teachers, students and parents	4 (13.3%)	8 (26.7%)	11 (36.7%)	3 (10.0%)	4 (13.3%)
Formation of disaster core groups responsible for specific duties relegated by the top management	3 (10.0%)	11 (36.7%)	9 (30.0%)	2 (6.7%)	5 (16.7%)
Organization of different committees of the students, parents, and teachers on mitigation, preparedness, response, and recovery.	1 (3.3%)	13 (43.3%)	10 (33.3%)	2 (6.7%)	4 (13.3%)
Coordination between and among teams/groups responsible for DRRM	3 (10.0%)	10 (33.3%)	8 (26.7%)	6 (20.0%)	3 (10.0%)
Definition of roles and duties of committees involved in the disaster management	2 (6.7%)	11 (36.7%)	10 (33.3%)	4 (13.3%)	3 (10.0%)
Weighted Mean: 3.16 (Moderate Participation)					

Legend: 5 = Very High Participation, 4= High Participation, 3= Moderately Participation, 2= Slight Participation, 1= Not Participation

The overall weighted mean fells into 3.16 which corresponds to "Moderately Participation". And this was findings on the extent of the teacher's participation along with the organization.

Table 7
Level of Participation Teachers on Disaster Risk Reduction Management Along Mitigation

Mitigation	Very High Participation	High Participation	Moderately Participation	Slight Participation	No Participation
Review of building use regulation, safe codes and putting in place the right infrastructure and ensuring up-to-date logistics	3 (10.0%)	8 (26.7%)	11 (36.7%)	6 (20.0%)	2 (6.7%)
Design school mitigation	2	8	13	4	3

strategies formulated by students, teachers and parents	(6.7%)	(26.7%)	(43.3%)	(13.3%)	(10.0%)
Maintenance of first aid supplies monitored by the students, teachers, and parents	2 (6.7%)	10 (33.3%)	10 (33.3%)	7 (23.3%)	1 (3.3%)
The ensure of the emergency expenditures tracking and recovery of records damaged or lost in an emergency	2 (6.7%)	10 (33.3%)	12 (40.0%)	5 (16.7%)	1 (3.3%)
Weighted Mean: 3.15 (Moderate Participation)					

Legend: 5 = Very High Participation, 4= High Participation, 3= Moderately Participation, 2= Slight Participation, 1= Not Participation

Table 7 showed the result and findings of the extent of the teacher's participation along with mitigation.

As a result of the findings, the overall weighted mean is 3.15 and interpreted as "Moderately Participation". This was the extent of the teacher's participation when it comes to mitigation.

Table 8

Level of Participation of Parents, Teachers, and Students on Disaster Risk Reduction Management as Assessed by the Teachers along Preparedness

Preparedness	Very High Participation	High Participation	Moderately Participation	Slight Participation	No Participation
Establishment of a framework for hazards as conceptualized by the students, parents and teachers	3 (10.0%)	7 (23.3%)	14 (46.7%)	5 (16.7%)	1 (3.3%)
Building of an early warning system	1 (3.3%)	10 (33.3%)	11 (36.7%)	5 (16.7%)	3 (10.0%)
Holding of drills (fire and earthquake)	4 (13.3%)	5 (16.7%)	10 (33.3%)	7 (23.3)	4 (13.3%)
Provision of required emergency equipment and supplies	3 (10.0%)	8 (26.7%)	12 (40.0%)	4 (13.3%)	3 (10.0%)
Weighted Mean: 3.075 (Moderate Participation)					

Legend: 5 = Very High Participation, 4= High Participation, 3= Moderately Participation, 2= Slight Participation, 1= Not Participation

Table 8, it's showed the results of the data gathered on the extent of participation of the teachers along with preparedness.

In general the overall weighted mean fells into 3.07 which interpreted as "Moderately Ready" and this was the extent of participation of the teachers when it comes to preparedness.

Table 9

Level of Participation of Parents, Teachers, and Students on Disaster Risk Reduction Management as Assessed by

the Teachers along Response

Response	Very High Participation	High Participation	Moderately Participation	Slight Participation	No Participation
Establishment of a recovery strategy in the school	4 (13.3%)	7 (23.3%)	11 (36.7%)	5 (16.7%)	3 (10.0%)
Holistic approach to relief and recovery and environmental considerations	4 (13.3%)	9 (30.0%)	10 (33.3%)	6 (20%)	1 (3.3%)
Preparation of recovery plans made by the students, parents and teachers	3 (10.0%)	10 (33.3%)	9 (30.0%)	5 (16.7%)	3 (10.0%)
Proactive communication strategy to keep the faculty, staff, and students fully aware of the action being taken	4 (13.3%)	11 (36.7%)	8 (26.7%)	4 (13.3%)	3 (10.0%)
Strong connection between mitigation and recovery so that the same future disaster event consequence is mitigated	4 (13.3%)	10 (33.3%)	9 (30.0%)	4 (13.3%)	3 (10.0%)
Weighted Mean: 3.233 (Moderate Participation)					

Legend: 5 = Very High Participation, 4= High Participation, 3= Moderately Participation, 2= Slight Participation, 1= Not Participation

Table 9 listed the findings of the gathered data when it comes to the extent of the teacher's participation along with organization on the disaster risk reduction management.

The overall weighted mean fells into 3.23 which corresponds to "Moderately Participation". And this was findings on the extent of the teacher's participation along with the response.

Table 10
Level of Participation of Teachers on Disaster Risk Reduction Management as Assessed by the Teachers along Recovery and monitoring

Recovery and Monitoring	Very High Participation	High Participation	Moderately Participation	Slight Participation	No Participation
Monitoring and evaluation of the disaster management committees which include all stakeholders especially the students, parents, and teachers	3 (10.0%)	7 (23.3%)	12 (40.0%)	4 (13.3%)	4 (13.3%)
Annual conduct of emergency hazard assessment	5 (16.7%)	7 (23.3%)	9 (30.0%)	6 (20.0%)	3 (10.0%)
Organization of a monitoring team on disaster	4 (13.3%)	5 (16.7%)	11 (36.7%)	8 (26.7%)	2 (6.7%)

and risk reduction management which involves primarily the students, parents, and teachers					
Laying out of proposed activities that would strengthen the monitoring services of the school	2 (6.7%)	7 (23.3%)	10 (33.3%)	9 (30.0%)	2 (6.7%)
Constant monitoring of the supplies and equipment used	3 (10.0%)	7 (23.3%)	14 (46.7%)	5 (16.7%)	1 (3.3%)
Weighted Mean: 3.073 (Moderate Participation)					

In table 10, it showed the level of participation of the total teacher-respondents along with Recovery and Monitoring. The overall weighted mean is 3.07 which corresponds to "Moderately Ready" was the extent of participation along with recovery and monitoring.

Table 11
A significant relationship between the level of readiness of teachers in disaster risk reduction management and their profiles

Profile	Chi-square Statistic	df	Significance
Age	6.869	8	.551
Sex	6.369	4	.173
Civil Status	14.426	8	.071
Educational Attainment	7.087	12	.852
Academic rank/designation	3.347	4	.502
Years of teaching experience	12.101	12	.438
number of training related to disaster and risk reduction management	13.112	8	.108

On this table, it showed about the significant relationship of the total number of teacher-respondents demographic profile to the level of readiness on disaster risk reduction and management.

As the results show, that as of 7 demographic profile preferences only 3 categories have a significant relationship with the level of readiness on disaster risk reduction and management and the age, educational attainment, and academic rank/designation.

For the findings of the results on the respondent's age, the analysis showed that younger teachers are surprisingly well familiar with disasters than the older teachers. But, they were found confused about the disaster adaptation process than the older students. In other key DRR issues, both age groups were found to have similar opinions (Ryuichi Yatabe, Ranjan Kumar Dahal & Netra Prakash Bhandary, 2013).

3.4 Relationship between the level of participation of teachers in disaster risk reduction management and their profiles

This table showed the significant relationship between teacher-respondents demographic profile and level of participation in disaster risk and reduction management. The analysis and findings show that 4 out of 7 teacher-respondents demographic profile preferences have a significant relationship on the level of participation in disaster risk reduction and management.

Table 12
The significant relationship between the level of participation of teachers in disaster risk reduction management and their profiles

Profile	Chi-square Statistic	df	Significance	Cramer's V	Significance
Age	16.854*	8	.032	.472	.099
Sex	3.506	4	.477	.329	.517
Civil Status	12.015	8	.151	.452	.139
Educational Attainment	8.845	12	.716	.306	.750
Academic rank/designation	3.755	4	.440	.300	.609
Years of teaching experience	13.975	12	.302	.353	.510
number of trainings related to disaster and risk reduction management	24.060*	8	.002	.562	.015

* Significant at .05 level

There is a saying that "by failing to prepare, you are preparing to fail" - Benjamin Franklin. For this results analyzed that the government of Thailand is prepared for the disaster risk reduction and management and which together aims strategically with international red cross foundation about this things: Save lives, protect livelihoods and strengthen recovery from disasters and crises; Enable healthy and safe living and Promote social inclusion and a culture of non-violence and peace.

4 Conclusion and Recommendation

4.1 Conclusions

Based on the findings of the study, the following conclusions are drawn:

1. The majority of the respondent's ages from twenty-one to thirty years old of the total number of the respondents. Females outnumbered the male and the majority of the respondents got a baccalaureate degree of the total respondents. Most likely the majority also got an academic rank of teacher I-III. Half of the total population got three to ten years of experience in teaching. And lastly, most of the respondents haven't undergone or got training that was related to DRRM.
2. The readiness level of the teacher-respondents on disaster risk reduction and management is "Moderately Ready".
3. No significant relationship existed between the demographic profile of the respondents on the level of on the DRRM.
4. There is a significant relationship existed between the demographic profile of the teacher-respondents and the level of participation on DRRM.

4.2 Recommendations

Based on the conclusions, the following recommendations are formulated:

1. Head teacher or school administrators maximize the readiness of the teachers on disaster risk reduction management through seminars and training that are related to DRRM. To prepare the teachers and lessen the injury that may occur on the students or tragedy that would arrive within school premises.
2. School administrators should make a strategic plan on how to counteract the disaster that may occur at school and train the teachers on how to handle or guide the students when it comes to floods, fires or earthquakes and other manmade or natural calamities. Drills are very necessary for this.
3. Drills and annual checks on the smoke detectors, extinguisher, and other supplies and equipment should be implemented in school. To prepare the mindset of the teachers and students when it comes to the calamities.
4. The research should be conduct to another school in Bangkok or other places of Thailand to monitor the disaster risk and reduction management of each institution and to compare each plan or strategy about disaster risk and reduction management
5. The school should integrate the programs and guidelines of OBEC about disaster risk and reduction management in the school curriculum. To prepare the students as wells as the teachers for the disaster that may occur at any time within the school or outside the school.

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References

[1] EM-DAT, "The International Disaster Database," *Centre for Research on the Epidemiology of Disasters*. 2015.

[2] D. Guha-Sapir, F. Vos, and R. Below, "EM-DAT:

International Disaster Database," ... *Disasters*, 2014.

[3] EM-DAT, "Database | EM-DAT," *EM-DAT*, 2019. .

[4] L. E. Thorpe *et al.*, "The role of epidemiology in disaster response policy development," *Ann. Epidemiol.*, 2015.

[5] R. J. M. Ventayen, "Educators competencies on the application of technological tools in teaching," *Int. J. Sci. Technol. Res.*, 2019.

[6] R. J. M. Ventayen and C. C. Orlanda-Ventayen, "Graduate students' perspective on the usability of Grammarly® in one ASEAN state university," *Asian ESP Journal*. 2018.

[7] S. R. Suiza, R. J. M. Ventayen, and N. E. Arquillano, "Effect of home support program in English proficiency for preschool learners in Thailand," *Asian EFL J.*, 2019.

[8] P. Basabe, "Hyogo framework for action 2005–2015," in *Encyclopedia of Earth Sciences Series*, 2013.

[9] United Nations, "International Strategy for Disaster Reduction Hyogo Framework for Action 2005-2015: Building the Resilience of Nations," *World Conf. Disaster Reduct.*, 2005.