

Awareness of Disaster Risk Reduction (DRR) among Student of the Catanduanes State University

Engr. Dexter M. Toyado

Faculty Member, College of Engineering, Catanduanes State University, PHILIPPINES

Corresponding Author: dtoyado@gmail.com

ABSTRACT

The Island Province of Catanduanes is prone to all types of natural hazards that includes torrential and heavy rains, strong winds and surge, flooding and landslide or slope failures as a result of its geographical location and topography. RA 10121 mandates local DRRM bodies to “encourage community, specifically the youth, participation in disaster risk reduction and management activities, such as organizing quick response groups, particularly in identified disaster-prone areas, as well as the inclusion of disaster risk reduction and management programs as part of youth programs and projects. The study aims to determine the awareness to disaster of the student of the Catanduanes State University. The disaster-based questionnaire was prepared and distributed among 636 students selected randomly from different Colleges and Laboratory Schools in the University

The Catanduanes State University students understood some disaster-related concepts and ideas, but uncertain on issues on preparedness, adaptation, and awareness on the risks inflicted by these natural hazards. Low perception on disaster risks are evidently observed among students. The responses of the students could be based on the efficiency and impact of the integration of DRR education in the senior high school curriculum. Specifically, integration of the concepts about the hazards, hazard maps, disaster preparedness, awareness, mitigation, prevention, adaptation, and resiliency in the science curriculum possibly affect the knowledge and understanding of students on DRR. Preparedness drills and other forms of capacity building must be done to improve awareness of the student towards DRRM.

The study further recommends that teachers and instructor must also be capacitated in handling disaster as they are the prime movers in the implementation of the DRRM in education. Preparedness drills and other forms of capacity building must be done to improve awareness of the student towards DRRM. Core subjects in Earth Sciences must be reinforced with geologic hazards. Learning competencies must also be focused on hazard identification and mapping, and coping with different geologic disaster.

Keywords-- Disaster Management, School DRRM, Disaster Awareness, Student Preparedness

I. INTRODUCTION

The Island Province of Catanduanes is prone to all types of natural hazards as a result of its geographical location and topography. Hazards related with these are torrential and heavy rains, strong winds and surge, flooding and landslide or slope failures. The Philippines is located along the Pacific Ring of Fire and it is high seismic area. Reports published by the United Nation University and the Institute of Environment and Human Security, Philippines rank as the third most disaster risk country all over the world in terms of the four components of risk (Exposure, Susceptibility, coping and adaptive capacities) (NDRRMO, 2011-2018). From 1995-2015, almost 130 billion is the cost of the disaster in the country. Hazard in the area includes Volcanoes, Faults, and Trenches. The Philippines is prone to earthquakes, tsunamis, volcanic eruption, typhoon, storm surge, floods, and landslide.

Disaster could be a natural or human-caused hazard that causes a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, that exceeds the flexibility of the affected community or society to deal with its own resources. The apprehension over natural disaster is increasing globally. For the last twenty years, losses of life and property because of disasters had raised. Disasters like floods, earthquakes, fire, etc. create serious threat to the community. Disaster education, including studies on disaster risks, mitigation and readiness strategies, is one approach to reducing the negative consequences of disasters.

Republic Act 10121 (or the Philippine Disaster Risk Reduction and Management Act of 2010) is an act strengthening the Philippine disaster risk reduction and management system, providing for the national disaster risk reduction and management framework and institutionalizing the national disaster risk reduction and management plan, appropriating funds therefor and for other purposes. RA 10121 mandates local DRRM bodies to “encourage community, specifically the youth, participation in disaster risk reduction and management activities, such as organizing quick response groups, particularly in identified disaster-prone areas, as well as the inclusion of disaster risk reduction and management

programs as part of youth programs and projects.”It requires DepEd, CHED, and TESDA to integrate disaster risk education in school curricula. The purpose is to institutionalize the disaster risk reduction and management (DRRM) through its integration into the school curriculum. The law mandates that DepEd, CHED, and TESDA to facilitate in the implementation of DRRM. DepEd, CHED, and TESDA officials agreed, saying students and teachers must be equipped with knowledge on mitigating and managing hazards and risks brought by natural disasters like earthquakes.

II. RESEARCH METHODOLOGY

The disaster based questionnaire was prepared and distributed among 636 students selected randomly from different Colleges and Laboratory Schools in the University. The purpose and method of the study undertaken was explained to the students to get their consent. The instrument of research was a validated self-administered questionnaire based on literature available for the topic. The questionnaire was designed to assess students’ knowledge and awareness, about disaster preparedness. The survey questionnaire was adopted by the researchers from the study of Catedral et.al and

Tuladhar et al. The survey questionnaire from this study is a validated data collection tool based from different research studies and literatures in investigating DRR knowledge.

The respondents answered twenty five (25) questions that were categorized into seven. These categories on DRR knowledge are the following: disaster-related knowledge, disaster prevention and mitigation, disaster capacity building, Disaster preparedness and response, Disaster rehabilitation and reconstruction, and disaster perception. Disaster-related knowledge refers to the information and familiarity of the respondent on the occurrence of disaster, and of being informed about disaster risk education training and seminar. Disaster prevention and mitigation corresponds to any measure taken in advance which aims to reducing the impact of the disaster through various mitigation methods which may be structural or non-structural.

A five-point Likert scale (5 = Strongly Agree, 4 = Agree, 3 = uncertain, 2 = Dis-Agree, and 1 = Strongly Disagree) was used to determine the responses of students on different issues of DRR. The five responses in the survey questionnaire were also rephrased with terminologies suited for DRR issues based on the study of Tuladhar et al.and Catedral et.al.

Table 1: Disaster risk reduction issues and responses

DRR Issues	Responses				
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. Disaster-related knowledge	Well understood	understood	Neutral	Mis understood	Strongly mis understood
2. Disaster Prevention and Mitigation	Well understood	understood	Neutral	Mis understood	Strongly mis understood
3. Disaster capacity building	Well aware	aware	Neutral	un aware	Strongly unaware
4. Disaster preparedness	Very ready	ready	Neutral	Not ready	Strongly Not ready
5. Disaster response	Very ready	ready	Neutral	Not ready	Strongly Not ready
6. Disaster rehabilitation and reconstruction	Well aware	aware	Neutral	un aware	Strongly Not aware
7. Disaster risk perception	Well perceived	perceived	Neutral	Not perceive	Strongly not perceive

III. RESULTS

Table 2 shows the mean percentages of each response option of the CSU students on disaster-related knowledge. Responses in all cases of disaster-related knowledge are significantly different. Out of 120 respondents, 59.2% is uncertain when a disaster will take place, followed by 15.00% who understood on this DRR

issue. Majority of respondents (42.50%) have no clear knowledge on the idea that there is no prevention for the occurrence of disasters. There is also a higher percentage of students (46.70%) who understood the importance of participating on a disaster risk education seminar and training, followed by 40.00%, and 5.00% of the CSU students who have no clear idea and find it confusing on this important issue.

Table 2: Mean percentages of each response option on disaster-related knowledge

1. Disaster-related knowledge	Well understood	Understood	Not certain	Poorly understood	Failed to understood
I know when a disaster will happen	6.7%	15.0%	59.2%	11.7%	7.5%
I know there is no prevention for the occurrence of disaster	17.5%	17.5%	42.5%	16.7%	5.8%
I participates in disaster awareness campaigns	7.5%	46.7%	40.0%	5.0%	0.8%

Responses in all cases of disaster prevention and mitigation are significantly different. Most of the respondents understand of the disaster and emergency management being implemented by the government. They are also optimistic on the effort of the government in

providing training and information about disaster. But majority are uncertain about the shelter for disaster. Most of the respondents understand the importance of building disaster proof infrastructure.

Table 3: Mean percentages of each response option on disaster prevention and mitigation

2. Disaster Prevention and Mitigation	Well understood	Understood	Not certain	Poorly understood	Failed to understood
I know there is a disaster and emergency management in place	18.3%	43.3%	35.0%	2.5%	0.8%
I know the government is providing training and information about disaster.	24.2%	54.2%	19.2%	2.5%	0.0%
I know that everyone is aware of the shelter for disaster	14.3%	34.5%	44.5%	4.2%	2.5%
I know the importance of building disaster proof infrastructure	20.8%	42.5%	34.2%	2.5%	0.0%

Table 4 shows the mean percentages of each response option of CSU students on disaster Capacity Building. Responses in all cases are significantly different. The highest percentage of students are aware of the significance and importance of sharing and discussing knowledge and experience of disaster to everyone. High

percentage also are aware that the government is ready to provide assistance after disaster. They are also aware that the government has the technology and resources to respond in disaster. However 38.3% are aware followed by 35.8% are uncertain when ask about participation in a disaster risk education or seminar and training.

Table 4: Mean percentages of each response option Disaster Capacity Building

3. Disaster capacity building	Well aware	Aware	Not certain	Poorly aware	Not aware
I am aware of the significance and importance of sharing and discussing knowledge and experience of disaster to everyone	18.3%	71.7%	10.0%	0.0%	0.0%
I know the government is ready to provide assistance after disaster	20.8%	43.3%	29.2%	6.7%	0.0%
I know the government has the technology and resources to respond in disaster	10.8%	47.5%	40.0%	1.7%	0.0%
I have been a participants in a disaster risk education seminar and training	13.3%	38.3%	35.8%	10.8%	1.7%

Responses in all cases of disaster preparedness and readiness are significantly different. Most of the respondents are uncertain about awareness and information of the evacuation plans, routes, shelter areas or evacuation centers, and open space in case of a disaster. Most respondent however are aware of the early warning

system in place. Respondent also are aware to whom they will seek assistance and where to coordinate with agency during and after disaster. Respondents are uncertain of their readiness and their knowledge and training on disaster. They are also uncertain about the hazards and disaster prone areas as shown in Table 5.

Table 5: Mean percentages of disaster preparedness.

4. Disaster preparedness	Very ready	ready	Not certain	Poorly ready	Not ready
I am aware and informed of the evacuation plans, routes, shelter areas or evacuation centers, and open space in case of a disaster	19.2%	35.0%	41.7%	3.3%	0.8%
I am aware of the early warning system	11.8%	48.7%	36.1%	3.4%	0.0%
I know where to ask help and coordinate with agency during and after disaster	15.8%	45.0%	36.7%	2.5%	0.0%
I am ready with emergency kits in case of disaster	9.2%	40.8%	43.3%	6.7%	0.0%
I am equip with training and knowledge for disaster	5.8%	39.2%	48.3%	6.7%	0.0%
I am aware about the hazards and disaster prone areas	11.0%	29.7%	50.8%	8.5%	0.0%

Table 6 shows the mean percentages of each response option of CSU students on disaster response. Responses in all cases are significantly different. The highest percentage of students are ready and the government and other agency will isolate them and

evacuation will commence after the disaster. Highest percentage are also ready and the government will provide rescue during or immediately after the disaster. They also believe that they will be provided with immediate assistance, food, shelter and other basic needs.

Table 6: Mean percentages of Disaster response

5. Disaster response	Very ready	ready	Not certain	Poorly ready	Not ready
The government and other agency will isolate people impacted by disaster from the impacted area after the disaster strikes (Evacuation)	11.7%	56.7%	30.0%	1.7%	0.0%
The government and other agency will provide rescue during or immediately after a disaster.	17.5%	62.5%	19.2%	0.8%	0.0%
The government and other agency will provide with immediate assistance, food, shelter and other basic needs.	15.4%	61.5%	20.5%	0.9%	1.7%

Table 7 shows the mean percentages of each response option of CSU students on disaster rehabilitation and reconstruction. Responses in all cases are significantly different. The highest percentage of students are aware that restoration of basic services and facilities for the functioning of community affected by disaster. Highest percentage also of 48.30% are aware and 41.70% are

uncertain about reconstruction and rebuilding and sustainable restoration of resilient critical infrastructures, services, housing, facilitates livelihoods is required for the full functioning of a community or a society affected by a disaster, aligning with the principles of sustainable development and “build back better”, to avoid or reduce future disaster risk.

Table 7: Mean percentages of Disaster rehabilitation and reconstruction

6. Disaster rehabilitation and reconstruction	Well aware	Aware	Not certain	Poorly aware	Not aware
I am aware that restoration of basic services and facilities for the functioning of a community or a society affected by a disaster.	8.4%	45.4%	42.9%	1.7%	1.7%
I know about reconstruction and rebuilding and sustainable restoration of resilient critical infrastructures, services, housing, facilities and livelihoods is required for the full functioning of a community or a society affected by a disaster, aligning with the principles of sustainable development and “build back better”, to avoid or reduce future disaster risk.	7.5%	48.3%	41.7%	2.5%	0.0%

Table 8 shows that the highest percentages of students, 40.80% and 32.5%, perceived and well perceived that significant disaster will definitely happen in the future. 58.3% are uncertain and only 27.5% perceived about the

shelter that can withstand disaster? While 43.3% are poorly considered their current location as safe from the disaster while 32.5% are uncertain.

Table 8: Mean percentage of Disaster Risk Perception

7. Disaster risk perception	Well perceived	Perceived	Not certain	Poorly perceive	Not perceive
I am sure that significant disasters will definitely happen in the future	32.5%	40.8%	25.8%	0.8%	0.0%
I am sure that my shelter can withstand a disaster	6.7%	27.5%	58.3%	7.5%	0.0%
I consider my current location is safe from disaster	5.8%	18.3%	32.5%	43.3%	0.0%

IV. DISCUSSION

The United Nations International Strategy for Disaster Reduction (UNISDR) stated that effective Disaster Risk Reduction education is in the basic education curriculum integration. This will strengthen the culture of awareness, preparedness, mitigating measures, and resiliency among the students. The present Philippine government addresses and implements these recommendations of UNISDR by disseminating disaster risk assessment, reduction and management knowledge among government employees, local households, students, and other stakeholders, and designing frameworks of DRR measures. The DepEd of the Philippines prioritizes the incorporation of DRRM into the national basic education system as well as in Higher education. DepEd implements the comprehensive DRRM in the Basic Education Framework. Schools should be guided by this Framework for an effective assessment, planning, and, prevention, mitigation, preparedness, response, rehabilitation and implementation of DRR. Based from the School DRRM Manual of DepEd, the children or the youth should have a great involvement in educational activities that promote DRR awareness. DRRM is now a component of subjects

like science and technology, and social science for elementary and junior high school. DRRM is already an independent subject for senior high school, Disaster preparedness and management education has been reinforced through programs and projects spearheaded by non-government agencies and the local government units. Trainings and seminars were being conducted in schools and including hazard drills to enforce the awareness of the student towards disaster.

V. CONCLUSION

The Catanduanes State University students understood some disaster-related concepts and ideas, but uncertain on issues on preparedness, adaptation, and awareness on the risks inflicted by these natural hazards. Low perception on disaster risks are evidently observed among students. The responses of the students could be based on the efficiency and impact of the integration of DRR education in the senior high school curriculum. Specifically, integration of the concepts about the hazards, hazard maps, disaster preparedness, awareness, mitigation, prevention, adaptation, and resiliency in the science curriculum possibly affect the knowledge and

understanding of students on DRR. Preparedness drills and other forms of capacity building must be done to improve awareness of the student towards DRRM.

RECOMMENDATION

Teachers and faculty must also be capacitated in handling disaster as they are the prime movers in the implementation of the DRRM in education. Preparedness drills and other forms of capacity building must be done to improve awareness of the student towards DRRM. Core subjects in Earth Sciences must be reinforced with geologic hazards. Learning competencies must also be focused on hazard identification and mapping, and coping with different geologic disaster.

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REFERENCES

[1] Catedral Mamon MA, Vargas Suba RA & Son IL. (2017). Disaster risk reduction knowledge of Grade 11

students: Impact of senior high school disaster education in the Philippines. *International Journal of Health System and Disaster Management*, 5, 69-74.

[2] Department of Education, Disaster Risk Reduction Manual (Safer Schools Manual). (2008). *Philippine DRRM Act of 2010 or RA 10121*.

[3] FaizatulAkmar, Abdul Nifa, Chong Khai Lin A, Wan NurulMardiah Wan Mohd Rani & Ooi Jun Wei. (2018). *A study on awareness of disaster risk reduction (DRR) among university students: The case of PETRONAS residential hall students*. AIP Conference Proceedings, 020005. Available at: <https://doi.org/10.1063/1.5055407>.

[4] Hejimens, Annelies et.al. (2001). *CBDO-DR: Experiences and Practices in Disaster Management of the Citizens' Disaster Response Network in the Philippines*. Quezon City.

[5] Lintner T. (2006). Hurricanes and tsunamis: Teaching about natural disasters and civic responsibility in elementary classrooms. *Soc. Stud.*, 97(3), 101–104. DOI: 10.3200/TSSS.97.3.101-104.

[6] Llanto GM. (2011). *Mainstreaming disaster risk management in local governments*. Policy Notes No. 2011-05. Philippine Institute for Developmental Studies.

[7] Tuladhar G, Yatabe R, Dahal RK & Bhandary NP. (2015). Disaster risk reduction knowledge of local people in Nepal. *Geoenvironmental Disasters*, 2, 1-12. Available at:

<https://www.link.springer.com/content/pdf/10.1186%2Fs40677-014-0011-4.pdf>.