

**Implementation of Disaster Risk Reduction Management:
A Basis for an Enhanced Program**

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ABSTRACT

As the Department of Education and National Risk Reduction and Management Council aim to achieve – access, quality and governance in terms of reducing damages, establishment of a sustainable agile program becomes a prime concern. The study sought to determine the effectiveness of the school's risk reduction management program and the problems encountered by the implementers. It has used a descriptive method and quantitative approach in analyzing and understanding the collected data. The respondent of the study were the personnel and students employed and enrolled during the academic year 2019 – 2020. The data were presented using tables and the results of the study were tabulated and processed. The result of the study revealed that generally, level of satisfaction of students on the implementation of Disaster Risk Reduction Management program was Very Satisfactory as indicated by the average mean of 4.35. Subsequently the level satisfaction in the evaluation made by the personnel on the implementation of Disaster Risk Reduction Management program was Excellent as indicated by the mean value of 4.78.

Keywords: *disaster risk reduction management, students, personnel, satisfaction, effectiveness, development plan.*

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1. Introduction

Loss of life, injury, and damage to infrastructures are just a few of the aftermaths of disasters. It is defined as a combination of hazard, exposure, and vulnerability. When a hazardous event struck, it places the community or the populace in a dangerous and vulnerable situation. People and the entire environment become exposed to hazard, damage, or destruction.

The potential damage and its extent may be characterized by the community's susceptibility. Formulation of a Disaster Risk Reduction Program would prevent the new problem, and reduce the probable harm thereby strengthening the resiliency of nature and man leading to a sustainable development. A community that has a program that specifies clear goals, objectives, and strategies as well as success indicators and timeframes would most likely yield to have less loses and damages (Florano, 2015).

A school as an educational institution has a great role in the community. It should have a disaster risk reduction management committee that will ensure the promotion of public awareness, and come up with strategies to avoid and minimize the impact of an accident when a disaster happens. Any potential damaged may be avoided or even lessened if such precautionary management measures are done. According to Galvez & Sison (2018), In every educational institution, a lot of programs and services has to conveyed, this programs and services has to be managed distinctly and must be improved from time to time by gauging its effectiveness through customer satisfaction.

As cited in the National Disaster Risk Reduction and Management Plan (NDRRMP) for 2011 - 2028, it aims to fulfil the requirement of RA No. 10121 of 2010, which provides the legal basis for policies, plans, and programs that deal with disasters. The NDRRMP covers four thematic areas, namely, (1) Disaster Prevention and Mitigation; (2) Disaster Preparedness; (3) Disaster Response; and (4) Disaster Rehabilitation and Recovery, which correspond to the structure of the National Disaster Risk Reduction and Management Council (NDRRMC). By law, the Office of Civil Defense formulates and implements the NDRRMP, and ensures that the physical framework, social, economic, and environmental plans of communities, cities, municipalities, and provinces are consistent with such plan. The NDRRMP is consistent with the National Disaster Risk Reduction, and Management Framework (NDRRMF), which serves as the principal guide to disaster risk reduction and management (DRRM) efforts of the country. The Framework envisions a country to safer, adaptive, and disaster-resilient Filipino communities toward sustainable development. It conveys a paradigm shift from reactive to proactive DRRM where men and women have increased their awareness and understanding of DRRM, with the end in view of increasing people's resiliency and decreasing their susceptibilities (Fernandez & Shaw, 2013).

Disaster Risk Reduction Management would refer to practices of reducing disaster risks through systematic efforts to analyze and reduce the causal factors of disasters. Reducing exposure to hazards, lessening the vulnerability of people and property, wise management of land and the environment, and

improving preparedness and early warning for adverse events are all examples of disaster risk reduction (Madume, 2016).

As stated also in Republic Act (RA) No. 10121 or the Philippine Disaster Risk Reduction and Management Act of 2010, it mandates that all national government agencies must institutionalize policies, structures, coordination, mechanisms and programs with continuing budget appropriation on Disaster Risk Reduction and Management (DRRM), from national to local levels which were ratified in Department of Education Order No. 50, s. 2011 or the Creation of Disaster Risk Reduction and Management Office (DRRMO), mandating the office to initiate and spearhead the establishment of mechanisms which prepare, guarantee protection and increase resiliency of the department constituents in the face of disaster. The DepEd even issued the enclosed Coordination and Information Management Protocols for the schools, schools divisions' offices (SDOs) and regional offices (ROs) and coordinators to establish the system of coordination and information management and provide guidance to their field offices, schools and DRRM coordinators on their respective roles and functions relative to DRRM implementation (Ani, et.al, 2015).

Thus, this acknowledges that the education sector is one of the most susceptible and helpless sectors during emergencies. It is among those that often suffer grave impacts brought about by natural and human-induced hazards, and thus, for this very reason, the students and the faculty could be considered as feasible respondents. Measuring and evaluating the effectiveness of the Disaster Risk Reduction Management Program in the institution they are affiliated would determine the level of preparedness.

1.1. Objectives of the Study

This study assessed the effectiveness of Disaster Risk Reduction Management program of the identified school in Valenzuela City. Specifically, it sought answers to the following:

1. What is the level of effectiveness of Disaster Risk Reduction Management Program?
2. What problems are encountered by the Disaster Risk Reduction Management committee in implementing and managing the program?
3. What Disaster Risk Reduction Management intervention program may be developed based on the findings of the study?

2. Methodology

Descriptive method of research was utilized to determine the effectiveness of the Disaster Risk Reduction Management program of the respondent. The study has also used quantitative research approach in analyzing and understanding the collected data.

The three hundred thirteen respondents were the personnel and students of the identified school in Valenzuela City employed and enrolled during Academic Year 2019 – 2020. The number of respondents was determined utilizing the Raosoft sample size calculation.

In order to gather significant information, a survey questionnaire on the effectiveness of Disaster Risk Reduction program was administered. It has a 5 – point Likert scale to help assess the effectiveness of the program. The mean results of the data gathered were tabulated.

The stakeholders' satisfaction on student services was quantified using the following scale:

Interval	Descriptive Evaluation	Descriptive Interpretation
4.60 – 5.00	Excellent	The respondents are of a consensus that the program has surpassed their expectations to a very great extent.
3.60 – 4.59	Very Satisfactory	The respondents are of a consensus that the program has surpassed their expectations to a great extent.
2.60 – 3.59	Satisfactory	The respondents are of a consensus that the program has met their expectations.
1.60 – 2.59	Fair	The respondents are of a consensus that the program has not met their expectations.
1.00 – 1.59	Poor	The respondents are of a consensus that the program has not met the adequate level.

The second part was composed of interview questions to determine the problems encountered by the DRRM committee in the implementation and management of the program.

3. Results and Discussion

3.1. Level of Effectiveness of Disaster Risk Reduction Management Program

Satisfaction is one of the fundamentals to gauge not only the customer perception but also the effectiveness of a certain programs or services. (Haumann, Quaiser, Wieseke, & Rese as cited in Galvez, 2018). It is evident that students' and personnel experiences of the services and programs are highly effective when the students and personnel can physically see proofs of the quality of services and programs (Galvez, 2018). The evaluation on the effectiveness of the school's Disaster Risk Reduction Management Program will help the institution improve its implementation in congruent and adherence to the mandates of NRRMC and DepEd. This will also help in providing intervention and modification in the existing program.

Table 1
Effectiveness of Disaster Risk Reduction Program – Students

Criterion	Mean	Interpretation
1. During the conduct your disaster drills, the siren loud enough to be heard by all the drill participants.	4.45	Very Satisfactory
2. During the conduct of your earthquake, the drill participants practice the "Duck, Cover and Hold" technique during the Alarm Phase while the siren is being activated	4.57	Very Satisfactory
3. During the conduct of your earthquake, the drill participants waited for the siren to stop before evacuating	4.09	Very Satisfactory
4. During the conduct of your fire drill, the drill participants evacuate during the Alarm Phase.	4.06	Very Satisfactory
5. The drill participants follow their designated routes to evacuation area.	4.51	Very Satisfactory
6. The drill participants observed the following: No running, No pushing, and No talking during the evacuation phase.	4.19	Very Satisfactory
7. The drill participants bring first aid kit during the evacuation phase.	4.49	Very Satisfactory
8. The floor Marshalls/ Supervisor conduct the headcount in the evacuation area.	4.43	Very Satisfactory
9. The evacuation area big enough to accommodate the evacuees.	4.32	Very Satisfactory
10. The participants able to vacate the building and reach the designated evacuation area in the shortest possible time it could take.	4.19	Very Satisfactory
11. The Disaster risk reduction committees were able to execute their function and responsibilities well.	4.55	Very Satisfactory
Over-all Average	4.35	Very Satisfactory

It can be gleaned in table 1 that the level of satisfaction of students on the implementation of Disaster Risk Reduction Management program was *Very Satisfactory* as indicated by the average mean of 4.35. Very satisfactory was manifested by the following indicators namely; (1) during the conduct your disaster drills, the siren was loud enough to be heard by all the drill participants (4.45); (2) during the conduct of your earthquake, the drill participants practice the "Duck, Cover and Hold" technique during the Alarm Phase while the siren is being activated(4.57); (3) during the conduct of your earthquake, the drill participants waited for the siren to stop before evacuating (4.09); (4) during the conduct of your fire drill, the drill participants evacuate during the Alarm Phase. (4.06); (5) the drill participants follow their designated routes to evacuation area. (4.51); (6) the drill participants observed the following: No running, No pushing, and No talking during the evacuation phase. (4.19); (7) the drill participants bring first aid kit during the evacuation phase. (4.49); (8) the evacuation area big enough to accommodate the evacuees (4.32); (9) the floor Marshalls/ Supervisor conduct the headcount in the evacuation area. (4.43); (10) the participants able to vacate the building and reach the designated evacuation area in the shortest possible time it could take (4.19); (11) the Disaster risk reduction committees were able to execute their function and responsibilities well. (4.55).

According to Anderson as cited by Wachtendorf, et. al, in 2008 , students becomes aware of disaster risk management due to the disaster risk management program devise and employed by different educational institutions. Students will not make their own platform on disaster risk but instead they will trail the disaster risk program employed on them by the school. Thus, every educational institutions must

ensure a working and effective disaster risk management plan that are known not only by the personnel and parents but also most especially the students.

Table 2
Effectiveness of Disaster Risk Reduction Program – Personnel

Criterion	Mean	Interpretation
1. During the conduct your disaster drills, the siren loud enough to be heard by all the drill participants.	5.00	Excellent
2. During the conduct of your earthquake, the drill participants practice the "Duck, Cover and Hold" technique during the Alarm Phase while the siren is being activated	4.77	Excellent
3. During the conduct of your earthquake, the drill participants waited for the siren to stop before evacuating	4.92	Excellent
4. During the conduct of your fire drill, the drill participants evacuate during the Alarm Phase.	4.62	Excellent
5. The drill participants follow their designated routes to evacuation area.	4.85	Excellent
6. The drill participants observed the following: No running, No pushing, and No talking during the evacuation phase.	4.54	Very Satisfactory
7. The drill participants bring first aid kit during the evacuation phase.	4.92	Excellent
8. The floor Marshalls/ Supervisor conduct the headcount in the evacuation area.	4.77	Excellent
9. The evacuation area big enough to accommodate the evacuees.	4.69	Excellent
10. The participants able to vacate the building and reach the designated evacuation area in the shortest possible time it could take.	4.62	Excellent
11. The Disaster risk reduction committees were able to execute their function and responsibilities well.	4.92	Excellent
Over-all Average	4.78	Excellent

As shown in table 2, the level satisfaction in the evaluation made by the personnel on the implementation of Disaster Risk Reduction Management program was *Excellent* as indicated on by the mean value of 4.78. the very satisfactory mean was evident due to the following criteria; (1) during the conduct your disaster drill, the siren loud enough to be heard by all the drill participants (5.00); (2) during the conduct of your earthquake, the drill participants practice the "Duck, Cover and Hold" technique during the Alarm Phase while the siren is being activated (4.57); (3) during the conduct of your earthquake, the drill participants waited for the siren to stop before evacuating (4.92); (4) during the conduct of your fire drill, the drill participants evacuate during the Alarm Phase. (4.62); (5) the drill participants follow their designated routes to evacuation area (4.85); (6) the drill participants observed the following: No running, No pushing, and No talking during the evacuation phase. (4.54); (7) the drill participants bring first aid kit during the evacuation phase. (4.92); (8) the floor Marshalls/ Supervisor conduct the headcount in the evacuation area. (4.77); (9) the evacuation area big enough to accommodate the evacuees. (4.69); (10) the participants able to vacate the building and reach the designated evacuation area in the shortest possible time it could take. (4.92); (11) the Disaster risk reduction committees were able to execute their function and responsibilities well. (4.92).

The main prevailing factors between disaster risk reduction program awareness of school personnel are word of mouth among school personnel and personnel proactive willingness to implement the program. The lack of awareness on school disaster risk program of personnel is one of the biggest contributory factor why disaster risk program might fail (A. Johnson, et.al, 2014).

3.2. *Problems Encountered by the DRRM committee in the implementation and managing the program*

Interviews were also conducted among the members and the committees of the program. Interview responses revealed that there were common difficulties encountered both by the students and the personnel.

Table 3
Problems encountered by the DRRM committee

Problems	f	Rank
Some of the students did not take the drill seriously	16	1
Some of the participants failed to do the "Duck, Cover, and Hold"	14	2
Some of the participants did not observe: No Pushing and No Talking during the evacuation phase.	13	3
Information / instruction dissemination / incoordination	12	4
Participants were not able to vacate immediately the building in shortest possible time due to its far location from the school	10	5
The evacuation area was not big enough to accommodate the evacuees	8	6
Insufficient safety gears, medicine kits / go bags / survival kits	6	7

Shown in Table no.3 were that the item on how participants lack seriousness in the conduct of the drill which ranks first with a frequency of 16. Some failed to observe the proper procedure of Duck, Cover and Hold with the frequency of 14 ranks second. Students were pushing and talking while the drill was on going with a frequency of 13 ranks third. There was incoordination in terms of information and instruction dissemination with a frequency of 12 ranks fourth. The evacuation took time due to the distance of the area from the school with a frequency of 10 ranks fifth. The evacuation area was not big enough to accommodate the evacuees with a frequency of 8 ranks sixth. Lastly, the insufficiency of safety gears, medicine kits, go bags or survival kits with a frequency of 7 ranks seventh.

During the course of the drill, numerous problems were encountered by the incident commander and responders. Notable problems include feeble fire alarms, dead radios, confused students, and coordination and response issues. Similarly, the conduct of drills whether on earthquake and fire is usually a prepared event. Like the one transpired in UP, six years ago where the faculty, personnel, and volunteer students took time in planning and preparing for the activity, and eventually encountered mishaps. Despite the time and effort in preparation, the participants had a hard time in performing their task during the drill (Ray, J. 2013).

The more drill becomes bad, the more lessons can be learned; which could be taken as an opportunity to make things better than a drill that follows a good script. When unfortunate events happened, there would be no scripts, and everyone would be a victim but these could be lessened if prevented. Everyone is expected to be attentive and alert so that they could save others and their lives.

In addition to this, it said that the more problem arise the better opportunities and the best they could prepare when actual emergency comes. It is not only in the locale of the respondents where these problems surfaced, there were other schools that confronted the same outcome.

Ray, J, 2013 said in his article that learning is the point of emergency drills, not just for specified personnel but for everyone. By continuously doing and learning from mistakes, perhaps everyone will be prepared when the actual emergency happens. When actual emergencies happen, the performance of everyone gets no ratings, only lives saved.

With the result of the interviews, the study proposes intervention to further improve the existing program. This will help in the ratification and sustenance of the endeavors.

Table 4
Proposed Intervention Program

Problems	Strategies	Persons Involved
Some of the participants did not take the drill seriously	Make the school community realize the probable conditions and circumstances they might experience. Intensification of the program orientation/ awareness. Conduct regularly disaster drill to have all the students and personnel becomes familiar and gets used in doing what is proper.	School Admin., personnel, DRRM Committee and students
Some of the participants failed to do the "Duck, Cover, and Hold"	Reiterate the procedures to be done and emphasize the need of doing so Intensification of the program orientation/ awareness. Conduct regularly disaster drill to have all the students and personnel becomes familiar and gets used in doing what is proper.	School Admin., personnel, DRRM Committee, speakers, LGU and students
Some of the participants did not observe: No Pushing and No Talking during the evacuation phase.	Provide concrete examples of accidents that happened with such carelessness. Intensification of the program orientation/ awareness. Conduct regularly disaster drill to have all the students and personnel becomes familiar and gets used in doing what is proper.	School Admin., personnel, DRRM Committee and students

Information / instruction dissemination / incoordination	Provide a rigid capacity building seminars and talks that discuss the procedures in implementing drills and practices	School Admin., personnel, DRRM Committee and students
Participants were not able to vacate immediately the building in shortest possible time due to its far location from the school	Coordinate with the local government	School Admin., DRRM Committee, personnel, LGU, nearby communities and students
The evacuation area was not big enough to accommodate the evacuees	Coordinate with the local government for an alternative evacuation area	School Admin., LGU, and DRRM Committee
Insufficient safety gears, medicine kits / go bags / survival kits	Secure enough supply and number of materials need with a ratio of 1:1	School Admin., personnel, LGU, DRRM Committee, parents and students

4. Recommendations

In light of the findings of the study, the following recommendations are put forth,

1. Establishment of disaster risk reduction management committee that will implement all the disaster risk reduction program of the institutions and will coordinate with the proper government agencies in the conduct of the disaster program.
2. The creation of disaster risk reduction management program that will be used as a guide in implementing and intensifying of the awareness of the program of all students, parents and personnel to encourage full and serious cooperation of all in the conduct of the drills.
3. The program and its implementers must set clear rules and guidelines in providing a systemic and organized disaster plan/program.

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