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RESEARCH ARTICLE

DISASTER PLANNING FOR COASTAL AND UPLAND SECONDARY SCHOOLS.

Roger S. Malahay.

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Abstract

This paper sought to determine the level of compliance and the extent of problems encountered in terms of developing the disaster preparedness plan among coastal and upland secondary schools in Negros Oriental, Philippines. Findings reveal that the secondary schools' level of compliance in developing disaster preparedness plan is only satisfactory since the compliance measures are not strictly complied. While the extent of problems encountered in developing school disaster preparedness plan is moderate. Further, the results reveal that lack of involvement of teachers, community, non-governmental organizations, and other stakeholders; and lack of needs assessment in terms of personnel, material resources, and infrastructures in developing disaster preparedness plan are the top moderate problems encountered in developing school disaster preparedness plan respectively. Furthermore, there is no significant relationship between the level of compliance and the extent of problems encountered in terms of developing disaster preparedness plan among secondary schools. Hence, there is a need to enhance the disaster preparedness planning in school through active participation and involvement of all school stakeholders; and strict compliance of the protocol in developing school disaster preparedness plan.

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Introduction:-

The Philippines is highly susceptible to multiple natural hazards. One of the most vulnerable sectors affected by these hazard occurrences is the academic community (Department of Education, 2012). Research has affirmed a general decrease in educational attainment, poor academic performance, and higher rates of absenteeism among students who have experienced the negative impact of the disaster (Chuang, Pinchoff, & Psaki, 2018).

The best tool in facing this disaster is preparedness (Smart Schools Program, 2012). Administrators, teachers, staff, parents, and students can work together to promote and maintain school-wide safety and minimize the effects of future calamities (Russell, 2019).

However, the main responsibility of preparing the school for future disasters lies in the administration and the teachers. They must make sure that in the event of a catastrophe, the loss of life is at least minimal (Smart Schools Program, 2012).

Planning is one important component of disaster preparedness (National Disaster Risk Reduction Management

Council (NDRRMC), 2011). It is something every educational institution must consider, regardless of its size or location (International Finance Corporation (IFC), 2010). Planning ahead helps everyone understand what to do should a disaster strike (Disasterium, 2011).

Planning for disaster must start with knowing the facts first (Sutton & Tierney, 2006). It should be based on accurate knowledge of the threat. Part of knowing the threat means understanding the basic characteristics of these hazards, such as speed of onset, scope, and duration of impact, and potential for producing casualties and property damage (Lindell & Perry, 2008). It must be based on good risk analysis (United Nations Office for the Coordination of Humanitarian Affairs (UN-OCHA), 2013). Hence, comprehensive and coordinated preparedness plans spell out the difference between reduced and increased disaster risks. (Rivera, 2013).

The concept of preparedness planning is very vital for those involved in disaster management because, in an actual emergency like a disaster, quick and effective responses taken are often based on the implemented disaster preparedness plans. However, if the appropriate action is not taken properly or if the response is delayed, lives may be lost (IFC, 2010). The effectiveness of a school disaster preparedness plan is measured based on the resilience of students, teachers, and administrators that are left unharmed following a natural disaster (Librera, Bryant, & Martz, as cited in Janice, 2011)

Further, disaster planning involves a coordinated, cooperative process of preparing to match urgent needs with available resources which includes research, writing, dissemination, testing, and updating. (Alexander, 2015). The Plan should provide simple step-by-step procedures that are clear and easy to implement, specific directions for immediate action, and for backup with a clear chain of command (Oreta, 2010) It provides a guide to the protocols and division of responsibilities in emergency response (Alexander, 2015)

Furthermore, a school disaster preparedness plan is composed of policies and procedures developed to promote the safety and welfare of the school community, protect school property, or regulate the operation of schools in the event of an emergency or disaster. The plan assures the protection and safe care of students, teachers, and staff before, during, and immediately after a threatened or actual emergency or disaster (Oreta, 2010)

The school disaster plan also includes plan for educational continuity which includes learning what information to collect for post-disaster damage assessment, plan for alternative locations or temporary learning facilities, alternative modes of instruction, plan for limited use of schools as temporary shelter, plan for education in emergencies, learn about psychosocial support and plan for recovery (Save the Children, 2015).

Further, school disaster plan also consists of telephone numbers of emergency and support agencies (e.g. fire departments, hospitals, police, radio and television stations, etc.), maps and floor plans, evacuation plan, emergency preparedness plan orientation and drills, school property inventory, off-site back-up of important school records and procedures for informing parents and guardians (Oreta, 2010)

Additionally, the Department of Education in the Philippines requires every school to prepare a school improvement plan integrating all the basic elements to provide for continuity of instruction, conduct an inventory of existing and available alternative materials of all learning levels, recommend to the division office the reproduction of identified alternative instructional materials, ensure that each school, division office, and regional office keep a file or copy of the existing and available alternative instructional materials for use in case of disaster (Department of Education, 2008).

The Philippine National Disaster Risk Reduction and Management Plan (NDRRMP) fulfills the requirement of RA No. 10121 known as the Philippine Disaster Risk Reduction and Management (DRRM) Act of 2010, which provides the legal basis for policies, plans, and programs to deal with disasters. The NDRRMP covers four thematic areas, namely, disaster prevention and mitigation, disaster preparedness, disaster response; and disaster rehabilitation and recovery. The plan serves as the principal guide to disaster risk reduction and management (DRRM) efforts of the country (NDRRMC, 2011).

Pursuant to The Republic Act (RA) No. 10121, the Department Education issued a memorandum circular entitled Creation of DRRM office which mandates the said office to initiate and sphere head the establishment of mechanisms to prepare, guarantee protection and resiliency of schools against disasters (Department of Education,

2015). The Department of Education also created and adopted this Safer Schools Resource Manual also known as Disaster Risk Reduction Resource Manual to guide education officials, school administrators, teachers and eventually the schoolchildren on what to do before, during and after the onslaught of any hazard (Department of Education, 2008).

Hence, the School faculty and staff, students, parents, local community leaders, and first responders all need to be familiar with the school disaster plans and policies, in order for them to work effectively (IFC,2010).

Despite the various efforts, initiatives, and reforms have already established for disaster preparedness planning, there are still many issues that need to be addressed such as the development of the disaster preparedness plan is not well participated by all school stakeholders and the lack of needs assessment as basis of the disaster planning. There is a need to assess the compliance level of the schools in the development of school disaster preparedness plan.

Statement of the Problem

School safety is the job of the entire school community. However, the administration and the teachers as frontliners have the full responsibility to ensure the safety and protection of the school community in times of disaster. Hence, thoughtful planning and preparation can help ensure the safety of the entire school community should natural hazards occur during school hours.

It is in this light that the researcher felt the need to determine the level of compliance and the extent of problems encountered by the school personnel in developing disaster preparedness plan among the coastal and upland secondary schools.

Specifically, this study answers the following questions:

1. What is the level of compliance in terms of developing school disaster preparedness plan among coastal and upland secondary schools in Negros Oriental, Philippines?
2. What is the extent of problems encountered in developing the school disaster preparedness plan?
3. Is there a significant relationship between the level of compliance and the extent of the problems encountered among secondary schools in terms of developing the disaster preparedness plan?

Research Hypotheses

Ho₁: There is no significant relationship between the level of compliance and the extent of problems encountered in developing disaster preparedness plan among secondary schools

Methodology:-

This is a descriptive-correlational study utilizing the survey method in the gathering of data. It is correlational as it goes to the extent of determining the association between two or more variables. It is descriptive since it describes the secondary schools' level of compliance and the extent of the problems encountered in terms of developing the disaster preparedness plan.

This study used a research-made survey questionnaire that underwent validity and reliability tests. Part 1 one of the questionnaire on the level of compliance is formulated based on the preparedness checklists of the Department of Education Disaster Risk Reduction Resource Manual. Part 2 of the questionnaire on the problems encountered is based on the problems cited by the school representatives during the Regional Conference on Education in Emergencies and Disaster Risk Reduction on December 10-12 2013 in the Philippines.

The research was conducted in 27 secondary schools offering Science, Technology, Engineering, and Mathematics (STEM) and General Academic Strand (GAS) in their senior high school based on the database of the Department of Education in 2016 in the first congressional district of Negros Oriental, Philippines. The respondents of this study are 582 secondary school teachers who willingly participated in the survey.

Spearman Rho was used in testing the significant relationship between the respondents' level of disaster preparedness and their frequency of experience and the severity of the hazards 'impact. It is a statistical measure of strength and direction of the association between two ranked variables.

Mann Whitney U test was used to test the significant difference

The following range of values with the corresponding verbal interpretations was used in the interpretation of the weighted mean:

Level of Compliance

| Range of Values | Verbal Interpretation | |
|-----------------|-----------------------|---|
| 4.21 - 5.00 | Outstanding | Preparedness measures are complied |
| 3.41 - 4.20 | Very Satisfactory | Preparedness measures are frequently complied |
| 2.61 - 3.40 | Satisfactory | Preparedness measures are sometimes complied |
| 1.81 - 2.60 | Fair | Preparedness measures are complied as the need arises |
| 1.00 - 1.80 | Poor | Preparedness measures are never complied |

The Extent of the Problems Encountered

| Range of Values | Verbal Interpretation | |
|-----------------|-----------------------|--------------------------------|
| 4.21 - 5.00 | Very Serious | The problem is always true |
| 3.41 - 4.20 | Serious | The problem is frequently true |
| 2.61 - 3.40 | Moderate | The problem is sometimes true |
| 1.81 - 2.60 | Minor | The problem is seldom true |
| 1.00 - 1.80 | No Problem | The problem is never true |

Results and Discussions:-

Table 1:-Level of Compliance in terms of Developing the School Disaster Preparedness Plans

| Compliance Measures | Coastal Schools (n=15) | | Upland Schools (n=12) | | Over-all $\bar{w}\bar{x}$ | Description |
|---|------------------------|-------------------|-----------------------|--------------|---------------------------|--------------|
| | $\bar{w}\bar{x}$ | Description | $\bar{w}\bar{x}$ | Description | | |
| 1. Considered the disaster risk assessment information in the preparation of the disaster preparedness plan | 3.42 | Very Satisfactory | 3.28 | Satisfactory | 3.35 | Satisfactory |
| 2. Assessed the needs of personnel, material resources, conditions of buildings and other infrastructure of the school in preparation of the disaster preparedness plan | 3.34 | Satisfactory | 3.11 | Satisfactory | 3.23 | Satisfactory |
| 3. Involved the teachers, community, NGOs, agencies and other stakeholders in the preparation of the disaster preparedness plan | 3.30 | Satisfactory | 2.98 | Satisfactory | 3.14 | Satisfactory |
| 4. Clearly identified the persons and agencies to call for assistance in case of emergencies in the disaster preparedness plan | 3.38 | Satisfactory | 3.27 | Satisfactory | 3.33 | Satisfactory |
| 5. Included in the disaster preparedness plan the schedule of activities like training, drills, reinforcing buildings, etc. to prepare the school from any eventuality | 3.16 | Satisfactory | 3.12 | Satisfactory | 3.14 | Satisfactory |
| Over-all $\bar{w}\bar{x}$ | 3.32 | Satisfactory | 3.15 | Satisfactory | 3.24 | Satisfactory |

Legend: $\bar{w}\bar{x}$ = Weighted Mean

Table 1 reveals that the level of compliance in terms of developing disaster preparedness plan among secondary schools is satisfactory only. It suggests that the compliance measures needed in the development of the disaster preparedness plan are sometimes followed. Lowest satisfactory ratings were given to clearly identify the persons and agencies to call for assistance in case of emergencies in the disaster preparedness plan; and included in the disaster

preparedness plan the schedule of activities like training, drills, reinforcing buildings, etc. to prepare the school from any eventuality. The findings further indicate the need for regular and strict compliance of the compliance measures in developing disaster preparedness plan among secondary schools. Further, the results suggest the conduct of training/workshop on the development of school disaster preparedness plan for the teachers and administration to effectively develop disaster preparedness plan in school based on the protocol.

The result of this study is supported by the study of Guevara, Ancheta, De La Pena, Ortega, and Lariosa (2006) in selected public schools in Luzon which revealed that majority of the respondent schools have insufficient preparedness in making school disaster preparedness plans.

Table 2:-Extent of Problems Encountered in Developing the School Disaster Preparedness Plan

| Problems Encountered | Coastal Schools (n=15) | | Upland Schools (n=12) | | Over-all $\bar{w}\bar{x}$ | Description | Rank |
|--|------------------------|-------------|-----------------------|-------------|---------------------------|-------------|------|
| | $\bar{w}\bar{x}$ | Description | $\bar{w}\bar{x}$ | Description | | | |
| 1. Lack of involvement of teachers, community, NGOs, agencies and other stakeholders in the preparation of the disaster risk reduction plan | 2.69 | Moderate | 2.99 | Moderate | 2.84 | Moderate | 1.5 |
| 2. Lack of needs assessment in terms of personnel, material resources, and infrastructure of the school in developing disaster preparedness plan | 2.70 | Moderate | 2.98 | Moderate | 2.84 | Moderate | 1.5 |
| 3. Most planning is directed at specific agent-caused effects | 2.69 | Moderate | 2.93 | Moderate | 2.81 | Moderate | 3 |
| 4. Lack of understanding on the concepts of disaster preparedness planning | 2.71 | Moderate | 2.90 | Moderate | 2.80 | Moderate | 4 |
| 5. Absence of concrete guidelines for developing disaster preparedness plans | 2.53 | Minor | 2.82 | Moderate | 2.68 | Moderate | 6 |
| Over-all $\bar{w}\bar{x}$ | 2.66 | Moderate | 2.92 | Moderate | 2.79 | Moderate | |

Legend: $\bar{w}\bar{x}$ = Weighted Mean

The data from table 2 reveal the moderate extent of problems encountered in the development of the school disaster preparedness plan. This indicates that problems are sometimes met in the development of the disaster preparedness plan. Further, highest ratings were given to lack of understanding on the concepts of disaster preparedness planning; and absence of concrete guidelines for developing disaster preparedness plans. This indicates the need for seminar/workshop on disaster planning participated by the school administration and teachers to understand clearly the concepts and guidelines for developing disaster preparedness plans.

This study is supported by the study of Janice (2011) that majority of the teachers lack knowledge on the disaster plans and policies of their school.

Table 3:-Correlation Between the Secondary Schools' level of Compliance and the Extent of Problems Encountered in Developing Disaster Preparedness Plan

| Secondary Schools' Level of Compliance versus the extent of problems encountered in terms of: | rho | Verbal Interpretation | P-Value $\alpha = .05$ | Decision | Remarks |
|---|-------|-----------------------|------------------------|--------------|-----------------|
| Development of Disaster Preparedness | -.227 | Low | .255 | Accept H_1 | Relationship is |

| | | | | | |
|------|--|-------------|--|--|-----------------|
| Plan | | Correlation | | | Not Significant |
|------|--|-------------|--|--|-----------------|

The statistics reflected on table 3 indicate that the secondary schools 'level of compliance and the extent of problems encountered in terms of developing disaster preparedness plan are not significantly related. This suggests that that extent of problems encountered is not a factor in the level of compliance in terms of developing the disaster preparedness plan among secondary schools.

Conclusion:-

The secondary schools' level of compliance in developing disaster plan is only satisfactory since the compliance measures are not strictly followed. While the extent of problems encountered in developing school disaster preparedness plan is moderate only. Furthermore, there is no significant relationship between the level of compliance and the extent of problems encountered in terms of developing disaster preparedness plan among secondary schools. Hence, there is a need to enhance the disaster preparedness planning in school through active participation of all school stakeholders and the conduct of regular needs assessment.

Recommendation

There is a serious need for regular and strict compliance of the protocol in developing disaster preparedness plan among secondary schools. The conduct of training/workshop on school disaster preparedness planning is highly recommended in order for the teachers and administration to effectively understand the concepts and guidelines necessary for developing disaster preparedness plans.

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