Research Article

Extent of Disaster Management Program Implementation and Preparedness Level in Selected Public Secondary Schools in Zambales, Philippines

Alexander C. Viado[1]*, Jo A. Espiritu Department[2]

[1]Cawag High School (Resettlement School), Cawag, Subic, Zambales Philippines
[2]President Ramon Magsaysay State University, Castillejos, Zambales, Philippines

ABSTRACT

The research aimed to assess the implementation of various components of disaster management programs including Vulnerability Assessment, Planning and Preparedness, Institutional Framework and Coordination, Resource Management and Allocation, Early Warning Systems, Response Mechanisms and Emergency Operations, Public Education and Training Disaster Drills and Exercises. Additionally, the study aimed to determine the level of disaster preparedness among school personnel and students, identify any significant differences in program implementation among schools, and explore the relationship between program implementation and disaster preparedness. The data collection involved surveys, questionnaires, and interviews with school principals, teachers, and learners during the third quarter of the 2016-2017 school year. The sample consisted of six schools, and the gathered data were analyzed using appropriate statistical tools. The findings indicated that most of the disaster management activities were implemented in the schools within Zone IV, contributing to an effective implementation of the programs. Teachers were moderately prepared in planning and warning system activities but showed preparedness in other areas such as vulnerability assessment, planning and preparedness, institutional framework and coordination, resource management and allocation, early warning systems, response mechanisms and emergency operations, public education and training disaster drills and exercises. Similarly, students displayed moderate preparedness in warning system activities and preparedness in other aspects. Overall, the students in Zone IV were considered prepared for potential disasters in their community and school.

Keywords: *Disaster management, Extent of implementation, Philippines*

Introduction

The Philippines is recognized as one of the most disaster-prone countries in the world. Each year, the country experiences storms, flash floods, landslides, earthquakes, and volcanic activities, which, while not always causing extensive damage, are responsible for the highest number of casualties and economic losses. Among the most devastating impacts are the fatalities and injuries that occur within schools (School Disaster Risk Reduction and Management Manual, 2016). In times of disaster or emergencies, children are particularly vulnerable to illness and trauma, requiring specialized care and attention. Schools play a crucial role during these challenging moments by providing safety and shelter for those displaced by disasters.

Various hazards can hinder children from achieving their educational goals, as some schools become unusable due to damages caused by disasters, prolonged use as shelters, unsafe access, loss of equipment and materials, or a lack of teachers. These effects can disrupt the learning environment and pose significant challenges for students in pursuing their educational aspirations.

Disasters have had a devastating impact on human, social, and physical capital, resulting in significant setbacks to social and economic development. Resources that would have been allocated to ongoing programs are redirected towards relief and reconstruction efforts. The documented losses caused by disasters are already substantial, but the true extent of their impacts remains largely unknown and is likely even more significant than currently estimated.

The Philippines, due to its geographical circumstances, faces a significantly high exposure to natural hazards. These events have resulted in severe social and economic consequences for the country. In addition to the major catastrophes that prompt substantial humanitarian assistance from the international community, there is a larger number of smaller hazard events that often go unnoticed on the global or national news scene. However, these events consistently devastate the limited assets of the impoverished population, perpetuating the cycle of poverty.

The Department of Education, as mandated by the Constitution, holds the primary responsibility for the education and manpower development of the country. It is entrusted with formulating, planning, implementing, and coordinating policies, plans, programs, and projects in the domains of formal, informal, and non-formal education at the elementary, secondary, and alternative learning system levels. This mandate also encompasses the supervision of these educational endeavors.

The Department is responsible for enhancing the standard of basic education and improving administrative efficiency in delivering educational services that are relevant to and aligned with national development goals. The series of typhoons that struck our country in 2006 caused widespread destruction, resulting in damage to 5,600 schools in Southern Luzon, with an estimated cost of approximately PHP 3.1 billion. This calamity affected around 8 million schoolchildren in elementary and secondary schools (DRRM 2008, p.6). Consequently, it is crucial to assess the level of awareness and preparedness among learners and educators regarding safety plans for potential disasters. The focus of this study was to collect data from both learners and educators to address this need.

So, in this paper a descriptive study on the disaster preparedness of the schools in Zone IV, division of Zambales were conducted.

Significance of the Study

To the **students**, the results of the study provide them information in what point they can deal with disasters and how they can avoid incidences due to such natural phenomena. However, it helps them realize the value of preparedness and equipping with knowledge in handling disasters.

To the **parents,** the study strengthens school- parents' relationship, thus, this serves as the raison de' etre in giving support to the implementation of programs and projects of the institution that involve disaster risk management.

To the **teachers**, this study serves as an instrument that can assess the degree of their preparedness in the advent of disasters which is relevant in apprising students on what to do

before, during and after the disasters. This also helps them ease the implementation of the DepEd's programs and policies that involve disaster risk reduction management in the school system.

To the **administrators,** it helps them reinforce DepEd memoranda and orders involving disaster risk reduction-related activities. This is also extended down to the teachers who are the first-hand accountable in carrying out such activities.

To the **Department of Education**, this serves as the basis to enthuse public schools nationwide disaster preparedness programs and give teachers trainings and workshops. The results of the study can be a baseline in preparing policies and guidelines to mitigate disaster-risk in schools.

Statement of the Problems

This study aimed to address the following research questions:

1. What is the level of implementation of the disaster management program in public secondary schools of Zone IV, specifically in terms of the following aspects: a. Vulnerability Assessment b. Preparedness Planning c. Institutional Framework and Coordination d. Resource Allocation and Management e. Early Warning Systems f. Emergency Response Mechanisms g. Public Education and Training h. Disaster Drills and Exercises
2. What is the level of disaster preparedness among students in the selected schools?
3. Is there a significant difference in the extent of implementation of the disaster management program among schools?
4. Is there a significant difference in the level of disaster preparedness among students across schools?
5. Is there a significant relationship between the extent of program implementation in schools and the level of disaster preparedness among students?

Scope and Limitations

This research study specifically targeted school heads, teachers, students, and PTA officials within the community of public secondary schools in Zone IV, located in the division of Zambales. The schools included in the study were San Guillermo National High School (SGNHS), San Marcelino National High School, Castillejos National High School (CNHS), Balaybay High School (BHS), Subic National High School (SNHS), and Kinabuksan Integrated School (KIS). The primary focus of the researcher was to assess the disaster preparedness of the school personnel and students.

Methods

It made used of a survey-questionnaire which was administered during the third quarter of the school year 2016-2017. Survey- responses and interviews conducted conducted from the school personnel and students were included in this study.

Framework of the Study
Disaster Preparedness and Management

The study aimed to explore the knowledge and skills necessary for education to contribute to the preparedness of learners, educators, and the community in the face of disasters. The availability of resources, such as teaching materials and school preparedness plans, was examined to address the research questions. According to UNISDR (2009), disasters often occur due to a combination of vulnerabilities and insufficient capacity to mitigate or cope with the potential catastrophic consequences. These disasters can result in loss of life, injuries, diseases, and other negative impacts on physical, mental, and social well-being. They also lead to property damage, destruction of assets, disruption of services, and environmental degradation, impacting both the household and national levels of economic and human development. Natural hazards, including floods, storms, earthquakes, droughts, volcanic eruptions, and tsunamis, affect millions of people annually, resulting in numerous deaths and widespread societal impacts (CRED, 2008). These disasters often disrupt education, causing children to be excluded from schools, and they can have long-lasting consequences. However, with knowledge, planning, physical and environmental protection measures, and response preparedness, the impact of these disasters can be mitigated.

The Dakar Framework for Action: Education for All (EFA) by the World Education Forum (UNESCO, 2006) recognizes the significant challenges posed by natural hazards to countries in achieving their EFA goals and emphasizes the need for international support. Globally, 875 million school children reside in high seismic risk zones, with 32 million newly enrolled in primary education (Wisner et al., 2004). However, despite the growing threat, neither national nor international commitments have adequately addressed the immense number of children affected. A comprehensive examination of the physical impacts of disasters on schools, students, and teachers presents compelling evidence that cannot be disregarded. Some of these events occur during school hours, leading to the collapse of vulnerable school buildings and potentially resulting in the loss of tens of thousands of children's lives if no action is taken.

Examining the impact of disasters on schools in different countries reveals the diverse forms of damage caused. In Cambodia, for instance, 78% of school principals in disaster-prone areas report that their schools are affected by flooding for over three months annually. Around 60% of these schools face closure for up to 2.5 months, with only 10% having an alternative location arranged for schooling. Often, the school year is extended, but teachers may return to their hometowns in other areas. Consequently, the disruption to education leads to a decline in its quality. The rainy season coincides with the start of the school year, and children who miss school face significant difficulties catching up. Damaged roads and river crossings result in longer travel times and increased transportation costs, contributing to high rates of student absenteeism, particularly among economically disadvantaged students. Principals estimate that financial problems and other flood-related difficulties cause approximately half of the students to drop out. Moreover, the use of schools as emergency shelters for people, livestock, or storage can also be damaging and disruptive (ADPC, 2008).

Disaster prevention education is most effective when it directly addresses local risks, emphasizes local experiences, promotes long-term action, and is implemented at a reasonable cost (Schick, 2007). It is crucial to educate students about the assessment and planning processes for risk reduction, specific measures to mitigate risks, organizational systems and skills for disaster response, community linkages, and problem-solving skills to integrate these elements. Equally important is the introduction of various ways in which students can actively participate in these processes. Many countries are transitioning from merely introducing hazards to adopting curricula that incorporate content on risk reduction and disaster management (BRI/GRIPS, 2007).

Disaster prevention education holds significance for all age groups, not just during a child's school years. Active participation in such education can provide lifelong benefits in terms of analytical thinking, problem-solving abilities, empowerment, and the development of good citizenship. It acts as a preventive measure against death, injury, trauma, loss of homes and livelihoods, and the preservation of cultural heritage throughout a student's educational journey (BRI & GRIPS, 2007).

According to Shaw and Shiwaku (2007, p.585), the primary role of disaster education is to provide students with knowledge and information while promoting proactive measures. Students should be encouraged to understand the concept of disaster risk reduction, gather information related to pre-disaster mitigation, and implement appropriate actions.

Additionally, Ozmen (2006, p.384) highlights that in the past decade, UN campaigns have emphasized various topics such as disaster prevention in schools and hospitals, the active involvement of vulnerable communities, women and children in disaster prevention, and cities at risk. The slogan "Disaster Reduction Begins at School" used in the UN International Strategy for Disaster Reduction's 2006-2008 global campaign is not merely a catchy phrase; it represents an enduring truth, a passionate aspiration, and a call to action. The practical and technical knowledge necessary for preventing the majority of life, limb, livelihood, community, and cultural heritage losses associated with natural hazards already exists, as affirmed by disaster risk reduction scientists and advocates.

The UN International Strategy for Disaster Reduction: The Hyogo Framework for Action (2005) identifies Priority 3 as the use of knowledge, innovation, and education to foster a culture of safety and resilience at all levels. Disasters can be significantly reduced through well-informed and motivated individuals who embrace a culture of disaster prevention and resilience. Achieving this goal necessitates the collection, compilation, and dissemination of relevant knowledge and information regarding hazards, vulnerabilities, and capacities (UNISDR, 2005).

Fortunately, disaster risk reduction is not merely an additional subject to be included in the curriculum; it encompasses a comprehensive approach that integrates with various aspects of education.

School disaster management plays a crucial role in safeguarding child protection and contributing to community-wide disaster risk reduction. Its primary purpose is to ensure the safety and well-being of students and staff while maintaining educational continuity. Administrators, teachers, and staff assume the role of "in loco parentis," stepping in as caregivers with both moral and legal obligations to stay with and protect children. They are expected to serve as "disaster services workers" during emergencies and are responsible for safely reuniting children with their families. As a result, school disaster management planning becomes imperative for every school system and site.

Children possess specific vulnerabilities and needs that must be addressed in risk reduction efforts, and they have the capacity to actively participate in activities related to risk identification, reduction, preparedness, and response (Benson & Bugge, 2008). It is our responsibility to ensure that their knowledge encompasses hazards and the feasible measures they can take to protect themselves and minimize the impact of these events.

In this document, the term "formal curriculum" refers to the regular classes through which children acquire a wide range of knowledge, skills, and values in primary, secondary, and vocational education. The term "co-curricular education" is reserved for educational activities conducted outside the regular curriculum, such as assemblies, after-school activities, community meetings, exhibits, special events, drills, and scenario exercises. These activities may employ similar tools as the formal curriculum, including cultural arts, drawing and writing competitions, games, hands-on activities, and the utilization of mass media learning channels.

Mason and other builder-training programs play a crucial role in all disaster prevention efforts. Pioneering work has been carried out in Nepal, India, Pakistan, and the Caribbean, and these valuable resources are now being added and made accessible through the DREAM collection. However, while capacity development programs for teachers, builders, and school administrators have been piloted, there is currently limited availability for study or replication. Addressing this gap and supporting the realization of the globally shared goal of fostering a culture of safety throughout the school years remains a priority (BRI & GRIPS, 2007).

Conceptual Framework

Disaster Risk Reduction encompasses key activities related to Priority 3 of the Hyogo Framework for Action 2005-2015: "Building the Resilience of Nations and Communities to Disasters," which includes knowledge, education, and risk awareness (ISDR, 2006, p.2). The Hyogo Framework for Action 2005-2015, under the theme "Use knowledge, innovation, and education to build a culture of safety and resilience at all levels," emphasizes that substantial reductions in disasters can be achieved when people are well-informed and motivated to adopt a culture of disaster prevention and resilience. This, in turn, necessitates the collection, compilation, and dissemination of relevant knowledge and information on hazards, vulnerabilities, and capacities (ISDR, 2002, p.9).

After the 1983 tsunami in Akita, Japan, which claimed the lives of 13 elementary school children, the realization of the need for teacher education and their roles as disaster managers in schools became evident (Shaw et al., 2004, p.40). Similarly, Ronan and Johnston (2001, p.1062), in their research on hazard education for youth, found that hazard education programs can significantly contribute to

increased awareness, realistic risk perceptions, knowledge of risk mitigation, and higher levels of home-based hazard adjustment among children.

Figure 1 shows the variables that considered in the study. The disaster preparedness activities of the respondents serve as the independent variable which constitute (a) Vulnerability Assessment (b) Preparedness Planning (c) Institutional Framework and Coordination (d) Resource Allocation and Management (e) Early Warning Systems (f) Emergency Response Mechanisms (g) Public Education and Training (h) Disaster Drills and Exercises

Independent Variables Dependent Variables School Management Student Preparedness

- Disaster preparedness:
  a. Vulnerability Assessment
  b. Preparedness Planning
  c. Institutional Framework and Coordination
  d. Resource Allocation and Management
  e. Early Warning Systems
  f. Emergency Response Mechanisms
  g. Public Education and Training
  h. Disaster Drills and Exercises

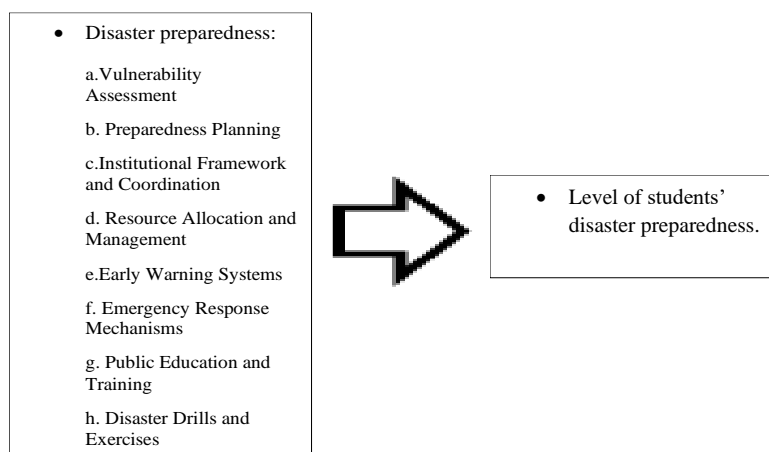- Level of students' disaster preparedness.

Figure 1. Conceptual Paradigm of the Study

The interventions that was used after the diagnostic assessment was also considered independent variable.

The level of respondents' preparedness to disasters was focused as the dependent variable which the researcher wanted to find out.

Hypothesis
The focus of the study to prove that the level of disaster preparedness among the teachers and students in the selected public secondary school in Zone IV, Division of Zambales is related to the extent of implementation of disaster management program.

To support this, the following null hypotheses underwent testing:
1. There is no significant difference on the extent of implementation of disaster management program among schools.
2. There is no significant difference on the level of disaster preparedness of students among schools.
3. There is no significant relationship between extent of program implementation of schools and the level of disaster preparedness of students.

Results and Discussion
This chapter presents the tabulated data gathered and were analyzed using the appropriate statistical tool. Discussions support the aim of the researcher to prove that the extent of implementation of disaster management programs is related to the level of preparedness of the respondents from the selected public secondary schools in Zone 4 Division of Zambales.

The way we understand and perceive dangers and disasters affect the way we live our lives. We cannot stop natural calamities from happening. They have become parts of our lives but we all need to learn how to face disasters and prepare for hazards.

The Vulnerability Assessment in the area of school 3, and school 5 are near the flooding could be affected by occurrence on the rise of the rivers during heavy rains that lasted several days. They can prepare school watching and hazard mapping and for the area along school 1, flooding is caused by excess run- off as stream flow. They always acquire information from the barangays and website of PAG-ASA.

In terms of Planning, the school 6 usually review the relevant information on disasters that take place in the community, while the school 3 coordinate with the School Planning Team to scheme school projects to promote teachers and learners awareness on disaster management.

The Institutional Framework and Resource Base of all schools have their own personnel of the School Disaster Management Team who shall be in charge of implementing, monitoring, and reporting activities to the school management, and abide by the ordinances reinforced by the school.

The Warning System of school 2 and school 3 are engaged in the establishment of an early warning system in school, they also post in social media to inform others about the impending dangers in school and community.

The Response Mechanism of all schools are always ready with survival and medical kit and other communication equipment. The precautionary measures and practice safety use by all means.

The Public and Educational Trainings of school 1 and school 3 are the distribution of pamphlets and handbooks which are relevant to inform about disasters. But the school 2 need to monitor the distribution of learning materials because majority of the learners are far from the schools and some of them are not coming to school.

The Rehearsals in all schools are conducted quarterly to ensure the readiness, to become equipped with knowledge on the disaster preparedness.

Extent of Implementation of Disaster Management Programs

Table 2 shows the mean responses of the 60 school personnel respondents on the extent of implementation of disaster management programs (DMP) in the selected public secondary schools.

Table 2. Extent of Implementation of Disaster Management Program

Activities	School						Mean	Interpretation
	1	2	3	4	5	6		
Vulnerability Assessment	3.52	3.82	3.76	3.78	3.92	3.48	3.74	Mostly Yes
Planning	3.52	3.96	3.82	3.78	4.00	3.48	3.78	Mostly Yes
Institutional Framework	3.60	3.70	3.62	3.78	3.60	3.60	3.73	Mostly Yes
Resource Base	3.76	3.92	3.82	3.70	3.82	3.74	3.78	Mostly Yes
Warning Systems	3.58	3.90	3.84	3.76	4.00	3.46	3.77	Mostly Yes
Response Mechanisms	3.60	3.66	3.56	3.90	3.60	3.60	3.73	Mostly Yes
Public Education and Training	3.52	3.82	3.76	3.78	3.92	3.48	3.78	Mostly Yes
Rehearsals	3.88	3.58	3.62	3.90	3.62	3.84	3.75	Mostly Yes
Mean	3.62	3.80	3.73	3.80	3.81	3.59	3.76	Mostly Yes
Interpretation	MY	MY	MY	MY	MY	MY	MY	

The extent of implementation was measured as to the activities conducted vital to disaster management programs. Schools garnered a mean of 3.78 (mostly) in planning, resource base and public education and training, which indicates they usually review relevant information on disasters before developing proper guidelines on communications and information protocol, and regularly maintain emergency hotline numbers, conduct fora, symposia or training in school for the promotion of disaster management and distribute learning materials that educate others about the observance of national environment-caring related program and disaster-risk preparedness.

The mean response 3.73 (**mostly yes**) on institutional framework and response mechanism denotes the schools maintain good rapport or relationship with all the members and officers of the various school organizations and coordinate activities of the Disaster Response Teams available in the community.

Further, table 2 also shows that, individually, all the schools had a mean within the range of "**mostly yes**" level (3.50 – 4.49). This implied that individually, most of the times, schools

implement the activities vital to DMP. The overall mean 3.76 (**mostly yes**) implies that the schools in Zone 4 conducts mostly all the actitivies vital to the effective implementation of the Disaster Management Programs.

This adheres to the findings of BRI/GRIPS (2007) that more and more countries are moving from simple introduction of hazards to adoption of curricula that incorporates risk reduction and disaster management content. This also affirms the statement of Shaw and Shiwaku (2007) that the role of disaster education is to provide knowledge and information to students and promote measures, and to achieve this, students should be encouraged to know disaster risk reduction, collect information realted to pre-disaster mitigation and implement it.

Level of Disaster Preparedneress

Table 3 presents the mean responses on the level of preparedness of students measured by the indicators parallel to the extent of implementation of DMP.

Table 3 Level of Disaster Preparedness of Students

Indicators	School	Interpretation						
	1	2	3	4	5	6	7	
Vulnerability Assessment	3.90	3.15	3.65	3.45	3.25	3.39	3.47	Moderately Prepared
Planning	3.52	3.30	3.90	3,60	3.00	3.33	3.44	Moderately Prepared
Institutional Framework	3.95	3.80	4.20	3.65	3.35	3.60	3.76	Prepared
Resource Base	3.86	3.55	4.20	3.85	3.40	3.63	3.75	Prepared
Warning Systems	3.62	3.30	3.25	3.15	3.15	3.20	3.28	Moderately Prepared
Response Mechanisms	3.48	3.80	4.20	4.00	3.60	3.87	3.83	Prepared
Public Educational and Training	4.05	3.85	4.20	3.50	3.60	3.73	3.83	Prepared
Rehearsals	4.19	3.75	4.25	3.80	3.65	3.82	3.91	Prepared
Mean	**3.82**	**3.56**	**3.98**	**3.63**	**3.38**	**3.57**	**3.66**	Prepared
Interpretation	**P**	**P**	**P**	**P**	**MP**	**P**	**P**	

The highest mean response on rehearsals 3.91 (prepared) denotes that they participate earthquake drill, fire drill and other types of drills and simulation exercises, which are usually conducted in school. The lowest mean response on planning 3.44 (moderately prepared) indicates that they are moderately familiar with the school disaster readiness and resilience checklist.

Moreover, table 3 also shows that the students in School 1, 2, 3, 4 and 6 had a mean of 3.82, 3.56, 3.98, 3.63, and 3.57 respectively. These vaues means that the students in those schools are "prepared" in the event of disaster. Only the students in School 5 garnered a mean of are in "moderately prepared" level. The overall mean 3.66 (prepared) implies that, generally, the students in Zone 4 are prepared for any eventuality of disaster in the community and in school. is affirms the findings of Benson and Bugge (2008) stating that children have specific vulnerabilities and needs to be addressed in risk reduction and they have the capacity for active participation in risk identification, risk reduction, preparedness and response. This also supports the findings of Johnston and Ronan (2001 p.1062) that hazard education programs can help children achieve increased awareness, more realistic risk perceptions and more knowledge of risk mitigation and increased levels of home-based hazard adjustment.

Difference on the Extent of Implementation of DMP among Schools.

Table 4 presents the ANOVA table on the extent of implementation of DMP.

Table 4. ANOVA Table on the Extent of Implementation of Disaster Management Program among Schools

Variables		Sum of Squares	df	Mean Square	F	Sig. (2-tailed)	Interpretation
Vulnerability Assessment	Between Groups	3.933	5	.787	.674	.645	Not Significant
	Within Groups	63.000	54	1.167			
	Total	66.933	59				
Planning	Between Groups	4.733	5	.947	.858	.515	Not Significant
	Within Groups	59.600	54	1.104			
	Total	64.333	59				
Institutional Framework	Between Groups	9.933	5	1.987	3.374	.010	Significant
	Within Groups	31.800	54	.589			
	Total	41.733	59				
Resource Base	Between Groups	1.883	5	.377	.312	.903	Not Significant
	Within Groups	65.100	54	1.206			
	Total	66.983	59				
Warning Systems	Between Groups	12.000	5	2.400	2.512	.041	Significant
	Within Groups	51.600	54	.956			
	Total	63.600	59				
Response Mechanism	Between Groups	8.133	5	1.627	1.987	.095	Not Significant
	Within Groups	44.200	54	.819			
	Total	52.333	59				
Public Educational Training	Between Groups	7.483	5	1.497	2.178	.070	Not Significant
	Within Groups	37.100	54	.687			
	Total	44.583	59				
Rehearsal	Between Groups	2.933	5	.587	.609	.693	Not Significant
	Within Groups	52.000	54	.963			
	Total	54.933	59				

The computed values for institutional framework (F_c= 3.374) and warning systems (F_c= 2.512) had both Sig. (2-tailed) values less than the set alpha level (α=.05). The null hypothesis was rejected; hence, there is a significant difference on the extent of implementation of DMP among schools in terms of institutional framework and warning systems. This implies that the schools in Zone 4 differs in setting ideas and facts about DMP and in the equipments and tools used as warning devices.

This finding supports the findings of Waugh and Streib (2006) that when one considers the need for a concerted effort to prepare and respond effectively to disasters while caring for all functional needs of populations in a collaborative and coordinated way, it is important to gain wide support of those in power as well as stakeholders and professionals. The extent to which the players in the distributed function are engaged in emergency management tasks and activities significantly influences what emergency managers at the local level can accomplish with respect to preparedness, response, recovery, and mitigation within their jurisdictions.

Differences on the Level of Disaster Preparedness among Students

Table 5 shows the level of preparedness of students among the schools in Zone 4 Division of Zambales in the event of disaster.

At a level of significance $\alpha = .05$ with a computed degrees of freedom $df_{(BETWEEN)}=5$ and $df_{(WITHIN)}=114$, the tabular value is $F_T = 2.30$ for all the variables considered. The decision rule: "If the computed value (F_C) is greater or equal to the tabular value (F_T), reject the null hypothesis and accept if other wise."

Table 5 ANOVA Table on the Level of Preparedness of Students Among Schools

		Sum of Squares	df	Mean Square	F	Sig. (2-tailed)	Interpretation
Vulnerability Assessment	Between Groups	13.193	5	2.639			
	Within Groups	153.399	114	1.346	1.961	.090	Not Significant
	Total	166.592	119				
Planning	Between Groups	20.208	5	4.042			
	Within Groups	154.459	114	1.355	2.983	.014	Significant
	Total	174.667	119				
Institutional Framework	Between Groups	31.716	5	6.343			
	Within Groups	121.084	114	1.062	5.972	.000	Significant
	Total	152.800	119				
Resource Base	Between Groups	20.006	5	4.001			
	Within Groups	131.861	114	1.157	3.459	.006	Significant
	Total	151.867	119				
Warning Systems	Between Groups	9.092	5	1.818			
	Within Groups	120.108	114	1.054	1.726	.134	Not Significant
	Total	129.200	119				
Response Mechanism	Between Groups	22.897	5	4.579			
	Within Groups	126.228	114	1.107	4.136	.002	Significant
	Total	149.125	119				
Public Educational Training	Between Groups	14.438	5	2.888			
	Within Groups	125.029	114	1.097	2.633	.027	Significant
	Total	139.467	119				
Rehearsal	Between Groups	14.321	5	2.864			
	Within Groups	133.646	114	1.172	2.443	.038	Significant
	Total	147.967	119				

The computed values for vulnerability assesement (F_C=1.961) warning systems (F_C=1.726) are less than the tabular value. The null hypothesis was accepted, hence, no significant difference on the level of preparedness of students among schools. The computed value for planning (F_C=2.983), institutional framework (F_C=5.972), resource base (F_C=3.459), response mechanism (F_C=4.136), public educational training (F_C=2.633) and rehearsals (F_C=2.443) are greater than the tabular value.

The null hyposthesis was rejected and the Sig.(2-tailed) values are lower than the set alpha level (α=.05) hence, there is a significant difference on the level of preparedness of students in terms of planning, institutional framework, resource base, response mechanism, public educational training and response mechanism.

This implies self-efficacy on the part of the students. In the context of disaster preparedness, self-efficacy is conceptualized as perception that one is capable of making plans or preparations based on his/her evaluation of the threat. This findings adheres to Ronan and Johnston (2001) in their findings after conducting research about hazard education for youth, that hazard education programs can help children achieve increased awareness, more realistic risk perceptions and more knowledge of risk

mitigation and increased levels of home-based hazard adjustment.

Relationship between Extent of Implementation and Level of Preparedness

Table 6 presents the correlation between the extents of implementation of disaster management programs of schools and the level of preparedness of students.

Table 6. Correlation between Extent of Implementation of Schools and Level of Preparedness of Students

		Extent of Implementation	Level of Preparedness
Extent of Implementation	Pearson Correlation	1	.353*
	Sig. (2-tailed)		.049
	N	6	180
Level of Preparedness	Pearson Correlation	.353*	1
	Sig. (2-tailed)	.049	
	N	180	180

*. Correlation is significant at the 0.05 level (2-tailed)

It can be gleaned from the table that the computed correlation coefficient is r=.353 which is interpreted as weak positive correlation between extent of implementation and level of preparedness. Sig. (2-tailed) = .049 is less than the set alpha level α = .05 which implies significance. Therefore, there is a significant relationship between the two variables. It indicates that the higher extent of implementation of the DMP among schools, the higher level of preparedness the teachers and students have.

If available resources are sufficient to resist a threat or disaster, risk perception is minimized. This supports the findings of Levac et al (2012), that the more confident or prepared people are about the ability to successfully respond to a given situation such as an emergency and disaster, the more likely they are to engage in preparedness behaviors. This also supports the statement of Benson and Bugge (2008) that children have specific vulnerabilities and needs to be addressed in risk reduction and they have the capacity for active participation in risk identification, risk reduction, preparedness and response.

School disaster management plays an important part in child protection, as well as in overall community disaster risk reduction. Administrators, teachers and staffs are expected to to serve as "disaster services works"and are responsible for safely reunifying children with their families during times of emergencies. This responsibility makes school disaster management a necessity in the school system.

Thus, the extent of implementation of the Disaster Management Program in schools is an important contributing factor to the level of preparedness of teachers and students.

Summary, Conclusion, and Recommendation

This chapter presents the summary of the study, conclusions drawn and recommendations relevant to the extent of implementation of disaster management programs and the level of preparedness of selected public secondary schools in Zone IV Division of Zambales.

Summary of Findings

Based on the gathered data and analysis of the results, the researcher came with the following:

1. The extent of implementation was measured as to the activities conducted vital to disaster management programs.

Vulnerability assessment, planning, institutional framework, resource base, warning system, response mechanism, public education and training, and rehearsal actitivies are mostly implemented in the school whithin the locale of the study. The overall mean 3.76 implied that the schools in Zone 4 conducts mostly all these activities contributing to an effective implementation of the Disaster Management Programs.

2. The students are in moderatey prepared level on vulnerability assessment, planning and warning system activities. They are in the prepared level in terms of institutional framework, resource base, response mechanism, public education and training, and rehearsal activities. The overall mean 3.66 (prepared) implied that, generally, the students in Zone 4 are prepared for any eventuality of disaster in the community and in school.

3. The computed values for vulnerability assessment (F_c= .674), planning (F_c= .858), resource base (F_c= .312), and rehearsals (F_c= .609) are less than the tabular value (F_T = 4.44). The computed values for response mechanism (F_c= 1.987), and public education and training (F_c= 2.178) are less than the tabular value (F_T = 2.38). The null hypothesis was not rejected; hence, there is no significant difference on the extent of implementation of DMP in terms of vulnerability assessment, planning, resource base, response mechanism, public educational training and rehearsal. The computed values for institutional framework (F_c= 3.374) and warning systems (F_c= 2.512) are greater than the tabular value (F_T = 2.38). The null hypothesis was rejected; hence, there is a significant difference on the extent of implementation of DMP among schools in terms of institutional framework and warning systems.

4. The computed values for vulnerability assesement (F_c=1.961) warning systems (F_c=1.726) are less than the tabular value (F_t=2.30). The null hypothesis was accepted, hence, no significant difference on the level of preparedness of students among schools. The computed value for planning (F_c=2.983), institutional framework (F_c=5.972), resource base (F_c=3.459), response mechanism (F_c=4.136), public educational training (F_c=2.633) and rehearsals (F_c=2.443) are greater than the tabular value. The null hyposthesis was rejected; hence, there is a significant difference on the level of preparedness of students in terms of planning, institutional framework, resource base, response mechanism, public educational training and response mechanism.

5. The computed correlation coefficient is r=.353 which is interpreted as weak positive correlation between extent of implementation and level of preparedness. Sig. (2-tailed) = .049 is less than the set alpha level α = .05 which indicates significant relationship. Therefore, there is a significant relationship between the two variables. It implied that the higher extent of implementation of the DMP among schools, the higher level of preparedness the teachers and students have.

Conclusion
1. The implementation of the Disaster Management proram among the schools in Zone 4 Division of Zambales is only at the "mostly implemented" level.
2. The students in Zone 4 are "prepared" in the eventuality of any disaster in the community and in the school.
3. The extent of implementation of the Disaster Management Programs among the schools in Zone 4 Division of Zambales significantly differs in terms of institutional framework and warning systems but does not significantly differ in terms of assessment, planning, resource base, response mechanism, public educational training and rehearsal.
4. Students among the schools in Zone 4 Division of Zambales significantly differs in their level of disaster preparedness in terms of planning, institutional framework, resource base, response mechanism, public educational training and response mechanism but there is no significant difference in their disaster preparedness in terms of vulnerability assessment and warning system activities.

The extent of implementation of the Disaster Management Programs among school has a significant relationship with the level of disaster preparedness of school. Therefore, schools' implementation affects the preparedness of students in cases of disaster eventuality. extent of DMP implementation, the more prepared the students are.

Recommendation

1. School heads personnel and students may have a more regular symposium and drills about disaster preparedness and risk reduction despite of the insufficiency of available resources, hence, aim for an absolute implementation of the Disaster Management Programs.
2. To reach to an extreme preparedness, students may further familiarize themselves on the instutional framerwork of the disaster management team of the school and particitpate more on public education trainings and rehearsals such as fire and earthquake drills to develop self-efficacy.
3. School heads and personnel may have joint benchmarking on the various rescue teams especially with Bureau of Fire Protection to be able to adapt a more comprehensive and uniform implementation of the Disaster Management Programs.
4. School officials and administrators may plan to include a module on risk reduction and disaster prepared and incorporate them in the subjects wherever it is applicable.
5. A peer-to-peer system (software) may be developed where students and the public can collect information about emergencies, risk and disaster on their smart phones and notebook computers and share the information with each other.

A follow up study on self-efficacy on disaster preparedness and response grid may be done to measure its relationship to self-responsibility and selfreliance during risk and disaster eventualities.

References

ADPC.2008. *A Study on the Impact of Disasters on the Education Sector in Cambodia*, Consultation Version 1.1. Bangkok

Benson, Lynne & Jon Bugge (2008), *Child-Led Disaster Risk Reduction – A Practical Guide*,Savethe Children. Thailand. http://www.eldis.org/assets/Docs/38480.html

BRI, and GRIPS (2007). *Disaster Education*. Kobe, Japan: Building Research Institute and the National Graduate Institute for Policy Studies.

CRED (Centre for Research on the Epidemiology of Disasters); (2008), *CRED Crunch #12*, Brussels.

ISDR.2006- 2007. *World Disaster Reduction Campaign*: Disaster Risk Reduction Begins at School. Geneva.

ISDR.2002. *living with risk: a global review of disaster reduction initiatives.* Geneva: Switzerland

Johnston, D. M. & Ronan, K. R. 2001. Correlates of Hazard Education Programmes for Youth, *Risk Analysis* 21 (6) 1055-1063.

Ozmen, F. 2006. The level of preparedness of the schools for disasters from the aspect of the school principals, *Disaster Prevention and Management* 15 (3): 383-395.

Shaw, R. & Shiwaku, K. 2007. Future perspective of school disaster education in Nepal, *Disaster Prevention and Management*, 16 (4):576-587.

Shaw, R., Shiwaku, K., Kobayashi, H. & Kobayashi, M. 2004. Linking experience, education, perception and earthquake preparedness, *Disaster Prevention and Management*, 13 (1): 33-39.

UNESCO (2006*). The Guidebook for Planning Education in Emergencies and Reconstruction*, International Institute for Educational Planning (IIEP).Paris. http://www.unesco.org/iiep/eng/focus/emergency/guidebook.html

UNISDR, UNESCO (2007). *Towards a culture of prevention: Disaster risk reduction begins at school – good practices and lessons learned*. United Nations International Strategy for Disaster Reduction, http://www.unisdr.org.

UNISDR (2009). *Words into action: A guide for implementing the Hyogo framework.* Kobe, Hyogo: United Nations International Strategy for Disaster Reduction, http://www.unisdr.org/words-into-action.

UNISDR. 2008. *Disaster Prevention for Schools* (IIEP). Paris. http://www.unesco.org/iiep/eng/focus/emergency/guidebook.html

UNISDR, UNESCO (2007). *Towards a culture of prevention: Disaster risk reduction begins at school – good practices and lessons learned.* United Nations International Strategy for Disaster Reduction, http://www.unisdr.org.

UNISDR (2009).*Words into action: A guide for implementing the Hyogo framework.* Kobe, Hyogo: United Nations International Strategy for Disaster Reduction, http://www.unisdr.org/words-into-action.

UNISDR. 2008. *Disaster Prevention for Schools Guidance for Education Sector Decision-Makers:* Consultation version, November 2008. Thematic Platform for Knowledge and Education. Geneva.

Wisner, B., Blaike, P., Cannon, T. & Davis, I. 2004. *At Risk:* 2nd ed. London: Routledge