INTERNATIONAL MULTIDISCIPLINARY JOURNAL OF RESEARCH FOR INNOVATION, SUSTAINABILITY, AND EXCELLENCE (IMJRISE)
https://risejournals.org/index.php/imjrise
Volume 1, Issue no. 6 (2024)
ISSN: 3028-032X (online) | ISSN: 3028-0370 (print)

Preparedness and Prevention: School Heads' Responses to Disaster Risk Reduction Management

DOI: https://doi.org/10.5281/zenodo.11435650

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Abstract

Studying the school head's preparedness and prevention efforts in disaster risk reduction management can lead to safer, more resilient schools that are better equipped to handle emergencies, thereby safeguarding the educational process and protecting the lives and well-being of the entire school community. Along this line, this study aimed to determine the preparedness and prevention in disaster risk reduction management among school heads of all public elementary schools of the 1st Congressional District of Negros Occidental; Escalante City, San Carlos City, Municipalities of Calatrava, Don Salvador Benedicto and Toboso. Data for this descriptive study was collected from 166 respondents using a self-made data-gathering instrument that has passed the stringent tests of validity and reliability. Results show no significant difference in all variables during disaster stage. The responses of the school heads that were influenced by their age, sex, highest educational attainment and length of service have no relation for they practically have the same experiences in dealing with the activities in all areas in the 3 stages of DRRM. And also there is a significant relationship between preparedness, prevention and mitigation. With the study's result, this paper calls for school administrators/principals, school officials and all stakeholders to give more focus and further planning in the preparedness and prevention of school heads' responses to DRRM.

Keywords: Prevention, Mitigation, Pre-Disaster Stage, During Disaster Stage, Post Disaster Stage, Disaster Risk Reduction Management

Introduction:

Nature of Problem

Disaster is defined as an incident or series of incidents that pose threats disrupt the life and livelihood of a community, which is caused by natural, non-natural, or human factors, and thus result in loss of life and property, environmental damage, and psychological impact (The Framework of School-Based Disaster Preparedness, 2009).

Jessie Wingard, Anne-Sophie Brändlin of Deutsche Welle, Germany's international broadcaster (10/11/2013) wrote that the Philippines has suffered from an inexhaustible number of deadly typhoons, earthquakes, volcano eruptions and other natural disasters leaving thousands of people dead and the country's infrastructures and economy in tatters.

In recent years, studies have shown that principals, through effective leadership, play a vital role for achieving a disaster resistant culture. It is pointed out also that there is much by school officials to plan for disasters, to mitigate risk, to protect the safety of students and educators, and to ensure that schools recover quickly (Disaster Risk Reduction Through School: A Ground-breaking Project 2009-2011). According to this project, Disaster Risk Reduction (DRR) is a relatively new concept based on three core areas: Prevention: e.g. planting trees on hillsides to avoid landslides; Mitigation: e.g. building river embankments raising plinths to reduce the risk of flooding; Preparedness: e.g. early warning evacuation plans and first aid training for community volunteers.

Republic Act 10121 known as the Philippines Disaster Risk Reduction and Management Act of 2010 established the National Disaster Risk Reduction and Management Council (NDRRMC) in which the Department of Education Secretary is one of the heads of agencies composing the DRRMC. The council is directed to create a Local Disaster Risk Reduction and Management Plan according to the framework of the NDRRMC covering four aspects including disaster preparedness response, prevention and mitigation and rehabilitation and recovery. The plan is a comprehensive statement of consistent actions to be taken before, during and after a disaster (Republic Act 10121, 2010). The Department of Education (DepEd) following the directives coming from the NDRRMC issued Department Orders and Memoranda as guidelines to all public elementary and secondary schools to strengthen their Risk Reduction Management program and activities.

Current State of Knowledge

The schools are not exempted from being affected by natural disasters and even human-induced ones like an extensive fire. In fact, the researcher, a former principal of Don Nicolas Lizares Elementary School of Toboso, Negros Occidental, was able to experience the terrible effects of Super Typhoon Ruping when it hit the school and

the whole community last November 13-14, 1990. One H.E. Building and four classrooms collapsed. Many people were rendered homeless including four teachers. School and community properties were destroyed. including four teachers. School and community properties were destroyed. Classes were suspended for a month because the typhoon victims refused to vacate the classrooms they occupied for they had nowhere to go and their livelihood and income were adversely affected. These adverse effects may be minimized if there was a Disaster Risk Reduction Management Program provided in every school during those times.

In recent years, studies have shown that principals, through effective leadership, play a vital role for achieving a disaster resistant culture. It is pointed out also that there is much by school officials to plan for disasters, to mitigate risk, to protect the safety of students and educators, and to ensure that schools recover quickly (Disaster Risk Reduction Through School: A Ground-breaking Project 2009-2011).

Theoretical Underpinnings

This study was anchored on Icek Ajzen's 1975 Theory of Planned Behavior which is mostly used in disaster risk reduction management studies particularly on disaster preparedness (Najafi, et al., 2017). Consistent with this theory, a person's intention for disaster preparedness behavior can be predicted from attitudes, subjective norms, and perceived behavioral control. The Theory of Planned Behavior (TPB) predicts that planned behaviors are determined by behavioral intentions which are largely influenced by an individual's attitude toward a behavior, the subjective norms encasing the execution of such behavior, and the individual's perception of their control over the behavior.

The theory of planned behavior gets support as well from the Sendai Framework for Disaster Risk Reduction 2015-2030 (Sendai Framework), which is the first major agreement after the 2015 millennium development agenda. It has seven clear targets and four priorities for action to prevent new and reduce existing disaster risks. The priorities were on (i) Understanding disaster risk; (ii) Strengthening disaster risk governance to manage disaster risk; (iii) Investing in disaster reduction for resilience and; (iv) Enhancing disaster preparedness for effective response, all of which were geared towards building communities back better in terms of recovery, rehabilitation and reconstruction. The framework was developed to achieve substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries over the next 15 years.

Objectives of the Study

This study aimed to determine the level of preparedness, degree of prevention, and extent of mitigation in disaster risk reduction management among respondents in the first Congressional District of Negros Occidental composed of two cities and three municipalities. Specifically, it sought to determine: 1) the level of preparedness of respondents in disaster risk reduction management according to pre-disaster, during disaster and post disaster stage); 2) the degree of prevention in disaster risk reduction management of respondents according to the aforementioned stages; and 3) the extent of mitigation in disaster risk reduction management of respondents according to the aforementioned stages; 4) the significant difference in the respondents' level of preparedness in disaster risk reduction management when grouped and compared according to selected variables in each of the aforementioned stages; 5) the significant difference in the respondents' degree of prevention in disaster risk reduction management when grouped and compared according to selected variables in each of the aforementioned stages; and 6) the significant relationship between preparedness and prevention in disaster risk reduction management.

Methodology

This section presents the research design used, the locale, the subject respondents of the study, the research instrument, the validity and reliability of the research instrument, the conduct of the study, the procedure for analysis of the data relative to the specific objectives and the statistical tools that were utilized.

Research Design

This study used the descriptive research design to determine design to determine the level of preparedness, degree of prevention and extent of mitigation in disaster risk reduction management among school heads of all public elementary schools of the 1st Congressional District of Negros Occidental; Escalante City, San Carlos City,
Municipalities of Calatrava, Don Salvador Benedicto and Toboso. The descriptive research design helps provide answers to the questions of who, what, when, where, and how associated with a research problem. Moreover, put the descriptive research is all about describing people who take part in the study. One way of doing a descriptive research project is through the survey method (ori.hhs.gov, 2015).

Respondents

The study's respondents were 166 school heads of all public elementary schools of the 1st Congressional District of Negros Occidental: Escalante City, San Carlos City,
Municipalities of Calatrava, Don Salvador Benedicto and Toboso using purposive sampling method.

Instruments

The researcher developed a 45-item assessment tool to gather the data, mainly from the school heads of public elementary schools in the 1st Congressional District of Negros Occidental. It was subjected to validity (4.72-very high) and reliability index was Preparedness=0.923, Prevention=0.964, Mitigation=0.933 which indicates high reliability and consistency of the survey instrument items. All of them were interpreted as worthy and good, respectively. This comprised of two parts, Part I dealt with the profile of the respondents and Part II contained topics that determine. To determine the respondents' level of preparedness, degree of prevention, extent of mitigation in disaster risk reduction management, they were asked to rate their responses in the 3 phases with the following score and interpretation: 5 "Very high", 4 "high", 3 "Moderate", 2 "low" and 1 "Very low"

Data Gathering Procedure

After the research instrument was found valid and reliable, the researcher asked for Permission from the Division Superintendent in Negros Occidental, Escalante City, and San Carlos City was secured to allow the conduct of the study in the First Congressional District of Negros Occidental and to all the school heads. After the approval, the researcher administered the questionnaire to the respondents and gave instructions on how to complete the questionnaire objectively and honestly. The researcher went to the different districts and schools of the 1st Congressional District of Negros Occidental to conduct the survey. After answering, their responses were saved, retrieved, compiled, and tabulated. The data acquired from the respondents' responses were tallied and tabulated using the proper statistical tools with the aid of the Statistical Package for Social Sciences (SPSS) by the statistician assigned.

Data Analysis and Statistical Treatment

Objective no 1. used the descriptive analytical scheme and mean to determine the level of preparedness of respondents in disaster risk reduction management according to pre-disaster, during disaster and post disaster stage).

Objective no 2. used the descriptive analytical scheme and mean to determine the degree of prevention in disaster risk reduction management of respondents according to the aforementioned stages.

Objective no 3. used the descriptive analytical scheme and mean to determine the extent of mitigation in disaster risk reduction management of respondents according to the aforementioned stages.

Objective no 4. used comparative analytical scheme and Mann-Whitney U test to determine the significant difference in the respondents' level of preparedness in disaster risk reduction management when grouped and compared according to selected variables in each of the aforementioned stages.

Objective no 5. used comparative analytical scheme and Mann-Whitney U test to determine the significant difference in the respondents' degree of prevention in disaster risk reduction management when grouped and compared according to selected variables in each of the aforementioned stages; and

Objective no 6. used relational comparative scheme and Spearman's Rho to determine the significant relationship between preparedness and prevention in disaster risk reduction management.

Ethical Considerations

Participants' identities must remain confidential and anonymous, and they must be assured that self-identifying statements and information are not included. Anonymity and confidentiality are significant because they safeguard the privacy of every individual who willingly participate in the research study. The possible harm and the safety of the participants, the researcher, the larger community, and the institution must be considered in the study. The harm can be in the form of distress, shame, and worry, which are difficult to anticipate or manage, as well as bodily harm, resource loss, emotional harm, and reputational impairment.

Results and Discussion

This section presents the data gathered from the survey, which were organized, analyzed and interpreted in accordance with the research objectives. These are presented in this chapter according to the sequence of the specific objectives.

Table 1
Level of Preparedness in Disaster Risk Reduction Management in the Pre-Disaster Stage

Items	Mean	Interpretation
1. Engaging children, teachers, parents, school management, local authorities and other key actors in participatory vulnerability analysis techniques to understand how disasters occur and how these can be reduced	4.16	High

2.	Regular participatory monitoring and evaluation on school preparedness and safety (i.e. try-out or exercise on preparedness of school periodically)	4.11	High
3.	Attend Pre-Disaster Risk Assessment (PORA) and advisories to raise the awareness of children and the school community on climate change and disaster prevention and mitigation	3.89	High
4.	Inclusion in lesson plans and learning resources knowledge regarding the hazards (i.e. types, sources and magnitudes); vulnerability; capacity; disaster risk and history surrounding the school.	3.75	High
5.	Test and update the Standard Operating Procedure of early warning system through regular simulation exercise activities in school.	3.99	High
Over all Mean		3.98	**High**

The level of preparedness of respondents in the pre-disaster stage is shown that the respondents obtained a mean score of 3.98, which is interpreted as "high". While the overall level of preparedness of respondents in the pre-disaster stage is high, the mean scores obtained by item were not the same. The preparedness in "engaging children, teachers, parents, school management, local authorities and other key actors in participatory vulnerability analysis techniques to understand how disasters occur and how these can be reduced" was rated by the respondents higher than the rest of the items that indicates the respondents perform this better than the other activities of preparation in the pre-disaster stage. While the activity with lowest level of preparation among the items is "Inclusion in lesson plans and learning resources knowledge regarding the hazards (i.e. types, sources and magnitudes); vulnerability; capacity; disaster risk and history surrounding the school."

Table 2
Level of Preparedness in Disaster Risk Reduction Management during Disaster Stage

Items	**Mean**	**Interpretation**
1. Availability of school evacuation map, with signs and symbols, easily understood by all school stakeholders	3.78	High
2. Availability of agreed nearest evacuation area/shelter, socialized to all school stakeholders (including parents of students, surrounding local government and communities)	3.95	High
3. Availability of emergency responders who are positioned strategically within the school premises	3.61	High
4. Availability of records of important contacts that can be easily accessed by all school stakeholders (i.e. the nearest health center/hospital, fire department, relevant apparatus).	3.70	High
5. Standard Operating Procedure is clearly followed	3.88	High
Over all Mean	3.78	**High**

The level of preparedness of respondents in the during-disaster stage is shown that the respondents obtained a mean score of 3.98, which is interpreted as "high". The overall level of preparedness of respondents in terms of during disaster stage is "high" the mean scores obtained by item were not the same. The availability of agreed nearest evacuation area [shelter, socialized to all school stakeholders (including parents of students, surrounding local government and communities) was rated by the respondents higher than the rest of the items. This indicates that the respondents were able to inform the stakeholders where to go in case of evacuation directive from LGU. While the activity with the lowest level of preparation is the availability of emergency responders who are positioned strategically within the school premises. This means that during disaster stage some emergency responders were not easily available especially when their homes and properties were badly hit. Their priorities would be of course to their immediate families and homes.

Table 3
Level of Preparedness in Disaster Risk Reduction Management in the Post-Disaster Stage

Items	**Mean**	**Interpretation**

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ISSN: 3028-032X (online) | ISSN: 3028-0370 (print)

1.	Inventory of availability of post-disaster basic equipment and basic needs supplies (i.e. first aid and evacuation tools, tarpaulin, tent and clean water) can be immediately fulfilled and easily accessed by school communities	3.34	Moderate
2.	Stockpiling equipment and supplies for disaster risk reduction management	3.26	Moderate
3.	Sustaining the awareness of children and the school community on climate change and disaster prevention and mitigation	3.89	High
4.	Maintaining the inclusion in lesson plans and learning resources knowledge regarding the hazards (i.e. types, sources and magnitudes); vulnerability; capacity; disaster risk and history surrounding the school	3.79	High
5.	Revisit the experience with pupils and discuss what could have been done better to improve preparedness	3.85	High
Over all Mean		3.63	**High**

The level of preparedness of respondents in the post-disaster stage is shown that the respondents obtained a mean score of 3.63, which is interpreted as "high". While the overall level of preparedness of respondents in the post disaster stage is "high", the mean scores obtained by item were not the same. The respondents higher than the rest of the items rated "Sustaining the awareness of children and school community of climate change and disaster prevention and mitigation". This indicates that the respondents always remind the children and school community on climate change and disaster prevention and mitigation, especially during meetings and conferences, like general PTA meetings, homeroom PTA meetings, and other school conferences. The lowest level of preparedness in the post disaster stage by the respondents is "stockpiling equipment and supplies for disaster risk reduction management" which obtained the mean score of 3.26, which is interpreted as "moderate". This is understandable that basic equipment and basic needs supply are not always done by the respondents because many of the schools had no enough basic equipment and supplies for disaster risk reduction management. The next lowest item is the inventory of availability of post disaster equipment and basic needs supply (i.e. first aid and evacuation tools, tarpaulin tent and clean water) can be immediately fulfilled and easily accessed by school communities.

Table 4
Degree of Prevention in Disaster Risk Reduction Management in the Pre-Disaster Stage

Items		**Mean**	**Interpretation**
1.	Ensure that school buildings can stand to disaster (safe classroom layout and design; facility and infrastructure that comply with standard of safety)	3.75	High
2.	Observe strictly Ecological Solid Waste Management	3.67	High
3.	Promote Tree planting activities along hillsides to prevent erosions, as a school program	4.05	High
4.	Create school-disaster response task force involving stakeholders	4.02	High
5.	Set mechanism that can monitor and evaluate school preparedness and safety regularly through participatory approach	3.78	High
Over all Mean		**3.85**	**High**

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The level of preparedness of respondents in the pre-disaster stage is shown that the respondents obtained a mean score of 3.85, which is interpreted as "high". Although the overall degree of prevention of the respondents in terms of the pre-disaster stage is "high," the mean scores obtained in the items were not the same. "The promotion of tree planting activities along hillsides to prevent erosions as a school program was rated by the respondents higher than the rest of the items". This indicates that the respondents were aware of their role in encouraging the students to engage in tree-planting activities. Even before, the tree planting was a requirement for a student before he or she could graduate in the elementary level. As shown in the school area and even in the shoulders of the streets many trees were grown as a result of the tree planting activities of elementary and secondary students of the public schools. The activity of respondents with the lowest degree of prevention among the items is "observing strictly Ecological Waste Management". This implies that some of the school heads were not strictly observing the War on Waste (WOW) program of DepEd. Proper waste segregation into biodegradable and non-biodegradable were sometimes not done.

Table 5
Degree of Prevention in Disaster Risk Reduction Management in the During-Disaster Stage

Items	Mean	Interpretation
1. Execute the disaster risk reduction contingency plan	3.76	High
2. Mobilize the school-disaster response task force	3.70	High
3. Implement the evacuation plan	3.79	High
4. Communicate clearly the safe conduct plan for stakeholders especially pupils	3.85	High
5. Release equipment and supplies for disaster risk reduction management	3.52	High
Over all Mean	**3.73**	**High**

The level of preparedness of respondents in the during-disaster stage is shown that the respondents obtained a mean score of 3.73, which is interpreted as "high". While the overall degree of prevention of respondents in terms of during disaster stage was "high", the mean scores obtained by item were not the same. The prevention activity which is "to communicate clearly the safe conduct plan for stakeholders especially pupils" was rated by the respondents higher than the rest of the items. This indicates that the respondents perform this better than the other activities of prevention during disaster stage. Proper information and instructions on what to do during emergencies is life-saving and life-sustaining according to DepEd Disaster Risk Reduction Management Service (2015). The safety of stakeholders, especially pupils, was, of course, given priority and great importance by the respondents. On the other hand, the respondents among the items rated the item on "release equipment and supplies for disaster risk reduction management" the lowest.

Table 6
Degree of Prevention in Disaster Risk Reduction Management in the Post-Disaster Stage

Items	Mean	Interpretation
1. Assess the damage done to life and property	3.81	High
2. Conduct an inventory of equipment and supplies for disaster risk reduction management	3.69	High
3. Communicate to proper authorities for the reconstruction of school buildings back to disaster-safe state	3.76	High
4. Continue the inclusion in lesson plans and learning resources knowledge regarding the hazards (i.e. types, sources and magnitudes); vulnerability; capacity; disaster risk and history surrounding the school	4.06	High
5. Sustain programs in ecological solid waste management, tree planting activities, and other projects that will make the school disaster-proof	3.71	High
Over all Mean	**3.81**	**High**

The level of preparedness of respondents in the during-disaster stage is shown that the respondents obtained a mean score of 3.81, which is interpreted as "high". Although the overall degree of prevention of

respondents in terms of the post disaster stage is high, the mean scores obtained by item were not the same. The item on "continue the inclusion in lesson plans and learning resources knowledge regarding the hazard (i.e. types, sources and magnitudes); vulnerability, capacity, disaster risk and history surrounding the school" was rated by the respondents higher than the rest of the items. This indicates that the respondents perform this better than the rest of the prevention activities in the post disaster stage. While the activity on "conduct an inventory of equipment and supplies for disaster risk reduction management" obtained the lowest mean score.

Table 7
Extent of Mitigation in Disaster Risk Reduction Management in the Pre-Disaster Stage

Items	Mean	Interpretation
1. Conducting Training on First Aid for community volunteers	3.38	Moderate
2. Disseminating to all school elements a clear and easy to understand evacuation plan for disaster risk reduction management	3.52	High
3. Ensuring a safe place to secure important school documents during disaster caused by natural hazards	3.72	High
4. Setting in place an early warning mechanism to alert the school for an upcoming natural hazard that would cause disaster	3.50	High
5. Setting up an agreed unified response at the onset of a natural hazard	3.62	High
Over all Mean	**3.55**	**High**

The results showed that the respondents obtained a mean score of 3.55 which is interpreted as "high". While the overall extent mitigation of respondents in disaster risk reduction management in the pre-disaster stage is "high". The mean scores obtained in the items vary. The item on "insuring a safe place to secure important school documents during disaster caused by natural hazard" was rated by the respondents higher than the rest of the items. This implies that the respondents gave this activity great importance because they would be responsible and accountable for the safety of these important documents. The school documents pertaining to the pupils, like birth certificates, records of grades from Grades I to VI, anecdotal records, 201 files of personnel and staff and other documents should be safe because it is very difficult to reconstruct or retrieve them and they would be needed by everyone concerned for future use. The activity of respondents on "conducting training on first aid for community volunteers was rated the lowest by the respondents with a mean score of 3.38 which is interpreted as "moderate". This indicates that the respondents/school heads did the "Training on First Aid" for community volunteers "sometimes" only. The result implies that community volunteers lacked the very important training on first aid. They should have ample and proper training so that they could function well as community volunteers to help the students, teachers and other stakeholders during actual disasters.

Table 8
Extent of Mitigation in Disaster Risk Reduction Management During the Disaster Stage

Items	Mean	Interpretation
1. Staying calm in directing the disaster risk management program	4.03	High
2. Giving clear and orderly directions to all stakeholders	4.00	High
3. Activating all mechanisms set as response to reduce disaster risk	3.84	High
4. Communicating the right information to all stakeholders including the community and the local government	3.92	High

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ISSN: 3028-032X (online) | ISSN: 3028-0370 (print)

5. Inspecting all corners for pupils and other school stakeholders that may have been missed and are at risk	3.92	High
Over all Mean	**3.94**	**High**

The respondents obtained a mean score of 3.94 which is interpreted as "high". While the overall extent of mitigation of respondents during disaster stage is high, the mean scores obtained by item were not the same. The item on "staying calm in directing the disaster risk management program" was rated the highest by the respondents than the rest of the items. This implies that the respondents were able to stay calm and direct the disaster risk management program properly and precisely. The school heads think it is their duty to stay calm in order to bring everybody to safety. They are responsible to direct the stakeholders so that they would also stay calm and know what to do. The activity rated by the respondents with the lowest extent of mitigation among the items is "activating all mechanism set as response to reduce disaster risk". Mechanisms would include equipment, and tools, and some schools lacked these necessary mechanisms.

Table 9
Extent of Mitigation in Disaster Risk Reduction Management in the Post-Disaster Stage

Items	**Mean**	**Interpretation**
1. Assess the post-crisis incident vis-a-vis the disaster risk reduction plan and let the school/DRRM coordinator submit the Rapid Assessment of Damage Report (RADAR) within 72 hours after the hazard to the DepEd DRRM with copy for the Division office	3.75	High
2. Make changes to the disaster risk reduction plan to address the loopholes during immediate-past experience	3.46	High
3. Begin reconstruction efforts to damaged property for a disaster-proof school and organize a temporary evacuation center or transition shelters to house the evacuees for a period of 3 to 15 days	3.54	High
4. Sustain efforts at continuous education of pupils and stakeholders through lesson plans and other learning resources	3.76	High
5. Enhance early warning mechanism for disaster risk reduction management and report class suspension or resumption of classes	3.95	High
Over all Mean	**3.69**	**High**

The respondents obtained a mean score of 3.69 which is interpreted as "high". While the overall extent of mitigation of respondents in the post disaster stage is "high", the mean scores obtained by item were not the same. The item "enhance early warning mechanism for disaster risk management and report class suspension or resumption of classes" was rated by the respondents highest among the rest of the items. This implies that the school heads were aware that they should be alert in any early warning of disaster like storm, typhoons, floods and the like, and report class suspension or resumption of classes. They should listen to the local news or the Municipal Disaster Risk Reduction Management Council (DRRMC) for further instruction when to suspend classes and when classes should be resumed. This vital information should be disseminated to all students, parents, teachers, and other stakeholders to have systematic and proper report after post disaster stage. The item on "make changes to the DRRM to address the loopholes during immediate past experience" was rated the lowest by the respondents. This implies that the school heads did not want to change their previous plans or they did not see the importance of changing it. They should be making new plans to fit the needs of the hour.

Table 10
Difference in the Level of Preparedness in Disaster Risk Reduction Management in the Pre Disaster Stage According to Variables

Variable	**Category**	**Mean**	**Mann Whitney U**	***p*-value**	**Sig level**	**Interpretation**
Age	Younger	3.82	820.5	0.002	0.05	Significant
	Older	4.17				
Sex	Male	3.85	932.5	0.137		Not Significant

	Female	4.04				
Highest Educational Attainment	w/o masters	3.95	827.0	0.844		Not Significant
	With masters	3.99				
Length of Service as School Head	Shorter	3.80	755.0	0.000		Significant
	Longer	4.20				

Table 10 indicates the significance in the differences of levels of Preparedness in Disaster Risk Reduction Management in the Pre-disaster stage when respondents were grouped and compared according to selected variables. As shown in the Table there is really a "significant" difference in the level of preparedness in DRRM in the pre-disaster stage for the variables age and length of service of respondents. It was clearly shown that the older respondents performed better the preparedness activities in the pre-disaster stage than the younger ones. The same is true with the variable length of service. The respondents with longer length of service as school head performed better than the respondents with shorter length of service. As was already said, knowledge and wisdom come with age and also experience is the best teacher. Wisdom really does come with age: Older people's knowledge and experience means they make better decisions according to Emma Innes, Mail Online news. According to the great Roman leader Julius Caesar experience is the best teacher. Hence, the differences in the performances of these two groups of variables were clearly exhibited during pre-disaster stage. They may have attended many trainings and seminars in "DRRM" since they stayed longer in the service.

There were no significant difference in the level of preparedness variables of sex and highest educational attainment because whether male or female or without master's degree and with master's degree their performances were practically similar and there was not much difference in the way they performed the preparedness activities during pre-disaster stage. The factors that contribute to this condition were that they followed the instructions or directions given to them by DepEd and by the LGU units.

Table 11
Difference in the Level of Preparedness in Disaster Risk Reduction Management During Disaster Stage According to Variables

Variable	**Category**	**Mean**	**Mann Whitney U**	***p*-value**	**Sig level**	**Interpretation**
Age	Younger	3.82	867.5	0.004	0.05	Significant
	Older	4.17				
Sex	Male	3.71	1004.0	0.334		Not Significant
	Female	3.82				
Highest Educational Attainment	w/o masters	3.67	755.5	0.430		Not Significant
	With masters	3.81				
Length of Service as School Head	Shorter	3.58	8385	0.002		Significant
	Longer	4.04				

Table 11 shows the significance in the level of preparedness in disaster risk reduction management during disaster stage when respondents were grouped and compared according to selected variables.

The variables, age and length of service are the two variables which have significant *p*-values. These imply that the older and the longer the respondents stay in service their level of preparedness during disaster stage are better than the younger respondents and the shorter length of service. As was said earlier the older you become the more mature your decisions are, and the longer you stayed in service the more experienced you become. DR Ye Li of California University in Riverside, said: "The findings confirm our hypothesis that experience and acquired

knowledge from a lifetime of decision making offset the declining ability to learn new information" (http://www.questionpro.com).

On the other hand, sex and highest educational attainment are the two variables in which the level of preparedness during disaster stage are "not significant", which implies that whether you are male or female or whether you have master's degree or without master's degree your performances on the level of preparedness during disaster stage would be practically the same or similar. This may be due to the same knowledge and training undergone by the respondents'.

Table 12
Difference in the Level of Preparedness in Disaster Risk Reduction Management in the Post Disaster Stage According to Variables

Variable	Category	Mean	Mann Whitney U	*p*-value	Sig level	Interpretation
Age	Younger	3.51	996.0	0.048	0.05	Significant
	Older	3.78				
Sex	Male	3.45	875.5	0.058		Not Significant
	Female	3.72				
Highest Educational Attainment	w/o masters	3.59	802.0	0.686		Not Significant
	With masters	3.64				
Length of Service as School Head	Shorter	3.51	996.0	0.048		Significant
	Longer	4.04				

Table 12 presents the significance in the differences in the level of preparedness in disaster risk reduction management in the post disaster stage when respondents were grouped and compared according to selected variables.

The variables age and length of service are the two variables which have "significant" differences in the level of preparedness in DRRM in the post disaster stage. These imply that age and highest educational attainment really matter in the performance of the activities in the level of preparedness in terms of post disaster stage. According to David Leonhardt in the article Old vs. Young in the New York Times (June 22, 2012) the one dividing line receiving too little is the line between young and old. He further said that wherever the line is drawn the people on either side of it end up looking very different. This time, the length of service of the school heads also affects greatly the performance of the said respondents in the activities in the level of preparedness in terms of post disaster stage. The longer the person stays in the service the more experienced he becomes in dealing with important activities and things. As was said previously experience is the best teacher. According to the Roman author Pliny the Elder in Naturalis Historia (A.D. 77) "Experience is the most efficient teacher of all things".

Sex and Highest Educational Attainment were variables considered to be "not significant". The respondent's performances of the preparedness activities in the post disaster stage were practically not different from each other.

Table 13
Difference in the Degree of Prevention in Disaster Risk Reduction Management in the Pre-Disaster Stage According to Variables

Variable	Category	Mean	Mann Whitney U	*p*-value	Sig level	Interpretation
Age	Younger	3.70	917.0	0.012	0.05	Significant
	Older	4.03				

Sex	Male	3.79	1030.0	0.433		Not Significant
	Female	3.88				
Highest Educational Attainment	w/o masters	3.70	704.0	0.221		Not Significant
	With masters	3.89				
Length of Service as School Head	Shorter	3.69	869.5	0.005		Significant
	Longer	4.05				

Table 13 reveals the significance in the differences of the degree of prevention in disaster risk reduction management in the pre-disaster stage according to selected variables.

As revealed in Table 13 age and length of service are the two variables which had significant differences in the degree of prevention of respondents in the pre-disaster stage. Older and longer length of service influenced so much the performances of respondents in their degree of prevention in the pre-disaster stage. This time, age really matters same is true with length of service as a school head. Old people's slow but experience and knowledge make up for it (Latest Mail Online 2013). The variables on sex and highest educational attainment are considered "not significant" as the differences in the degree of prevention in the pre-disaster stage of DRRM. Male and female respondents and without master's degree and with master's degree had practically obtained the same or similar mean score.

Table 14
Difference in the Degree of Prevention in Disaster Risk Reduction Management During Disaster Stage According to Variables

Variable	**Category**	**Mean**	**Mann Whitney U**	***p*-value**	**Sig level**	**Interpretation**
Age	Younger	3.53	841.5	0.003	0.05	Significant
	Older	3.97				
Sex	Male	3.73	1130.5	0.954		Not Significant
	Female	3.72				
Highest Educational Attainment	w/o masters	3.64	803.5	0.695		Not Significant
	With masters	3.75				
Length of Service as School Head	Shorter	3.52	822.5	0.002		Significant
	Longer	3.98				

In table 14, the results showed that age and lengths of service as school head are the significant differences in the degree of prevention in DRRM in terms of During Disaster Stage. Older respondents performed better than the younger respondents, and the school heads with longer length of service did the prevention activities better than those with shorter length of service. The difference glaringly seen among the rest of the variables. While the variables Sex and Highest Educational Attainment was shown as "not significant". The difference in the degree of prevention during disaster stage of respondents was seen as not very big difference between male and female and between respondents without master's degree and with master's degree. Their responses were practically similar in nature and content during disaster stage.

Table 15
Difference in the Degree of Prevention in Disaster Risk Reduction Management in the Post Disaster Stage According to Variables

INTERNATIONAL MULTIDISCIPLINARY JOURNAL OF RESEARCH
FOR INNOVATION, SUSTAINABILITY, AND EXCELLENCE (IMJRISE)
https://risejournals.org/index.php/imjrise
Volume 1, Issue no. 6 (2024)
ISSN: 3028-032X (online) | ISSN: 3028-0370 (print)

Variable	Category	Mean	Mann Whitney U	*p*-value	Sig level	Interpretation
Age	Younger	3.65	880.5	0.006	0.05	Significant
	Older	3.99				
Sex	Male	3.79	1124.0	0.917		Not Significant
	Female	3.81				
Highest Educational Attainment	w/o masters	3.70	806.0	0.711		Not Significant
	With masters	3.83				
Length of Service as School Head	Shorter	3.64	825.5	0.002		Significant
	Longer	4.01				

Still the "significant" difference in the degree of prevention was seen in the variables of age and length of service of respondents. The "not significant" differences were seen in the sex variable and highest educational attainment of school heads. The older respondents performed better than the younger respondents. The difference in the mean score has wider gap. Same also with longer length of service. They performed better than the respondents with shorter length of service. Also the longer length of service performed better than the ones with shorter length of service. The female respondents performed similarly with male respondents. Same is true without master's degree and with master's degree; the performance did not have a wider gap. The ratings were similar or practically the same.

Table 16
Difference in the Extent of Mitigation in Disaster Risk Reduction Management in the Pre-Disaster Stage According to Variables

Variable	Category	Mean	Mann Whitney U	*p*-value	Sig level	Interpretation
Age	Younger	3.34	896.0	0.008	0.05	Significant
	Older	3.80				
Sex	Male	3.48	1026.0	0.418		Not Significant
	Female	3.58				
Highest Educational Attainment	w/o masters	3.50	836.0	0.904		Not Significant
	With masters	3.56				
Length of Service as School Head	Shorter	3.33	868.5	0.005		Significant
	Longer	3.81				

Table 16 indicates the significance in the differences in the Extent of Mitigation in Disaster Risk Reduction Management in the Pre Disaster Stage when respondents were grouped and compared according to selected variables.

All in all age and length of service of respondents are the most significant difference that affects the extent of mitigation in DRRM in the pre-disaster stage. While variables on sex and highest educational attainment still have no significant difference in mitigating activities of respondents during pre-disaster stage. Age and length of service showed a wide gap of difference across variables which sex and highest educational attainment indicated a smaller gap of difference across variables in the extent of mitigation in DRRM in the pre-disaster stage.

According to the Roman Author, Pliny the Elder in Naturalis Historia (A.D. 77). "Experience is the most efficient teacher of all things", and the Roman historian Tacitus said simply, "Experience teaches" in his Histories (C.209). Wisdom really does come with age: older people knowledge and experience means they make better decisions by Emma Innes in Daily Mail (news) (September 25, 2013).

Table 17
Difference in the Extent of Mitigation in Disaster Risk Reduction Management During Disaster Stage According to Variables

Variable	**Category**	**Mean**	**Mann Whitney U**	***p*-value**	**Sig level**	**Interpretation**
Age	Younger	3.83	1065.0	0.129	0.05	Not Significant
	Older	4.08				
Sex	Male	3.84	978.0	0.245		Not Significant
	Female	3.99				
Highest Educational Attainment	w/o masters	3.96	841.5	0.940		Not Significant
	With masters	3.94				
Length of Service as School Head	Shorter	3.82	1040.0	0.091		Not Significant
	Longer	4.09				

Table 17 indicates the significance in the difference in the extent of mitigation in disaster risk reduction management during disaster stage when respondents were grouped and compared according to selected variables.

All the variables age, sex, highest educational attainment and length of service obtained a "not significant" level of differences in the extent of mitigation in DRRM During Disaster Stage. These imply that the respondents have similar responses when it comes to during disaster stage. Their responses have smaller gaps of differences as shown in the mean scores of the ratings. This could be attributed to following the instructions in DRRM of DepEd and LGU.

Table 18
Difference in the Extent of Mitigation in Disaster Risk Reduction Management in the Post Disaster Stage According to Variables

Variable	**Category**	**Mean**	**Mann Whitney U**	***p*-value**	**Sig level**	**Interpretation**
Age	Younger	3.52	927.5	0.015	0.05	Significant
	Older	3.90				
Sex	Male	3.69	1075.0	0.647		Not Significant
	Female	3.69				
Highest Educational Attainment	w/o masters	3.64	809.5	0.733		Not Significant
	With masters	3.71				
Length of Service as School Head	Shorter	3.51	899.5	0.009		Significant
	Longer	3.91				

As shown in Table 32 the variables which obtained "significant" difference across variables are age and length of service as school head. It was indicated that respondents had wider gaps of difference between older and younger school heads, and also respondents with longer length of service had responses higher than that of the respondents with shorter length of service. Sex and highest educational attainment were the two variables which obtained a lesser gap of difference. The respondents had similar responses as shown in the obtained mean scores. This implies that sex and educational attainment don't really matter in the responses of the two variables.

Table 19
Relationship between the Level of Preparedness and Degree of Prevention in Disaster Risk Reduction Management

Variable	**Rho**	***p*-value**	**Sig level**	**Interpretation**
Level of Preparedness	0.867	0.000	0.05	Significant
Degree of Prevention				

Table 19 presents the significance in the relationship between level of preparedness and degree of prevention in disaster risk reduction management. The obtained *p*-value was 0.000 which is lower than the 0.05 level of significance. This indicates that there is "significant" relationship when level of preparedness and degree of prevention was compared and analyzed. Thus, the hypothesis which states that there is no significant relationship between preparedness and prevention in disaster risk reduction management is rejected. All preparedness activities performed by the respondents are also related to the prevention activities in the DRRM.

Table 20
Relationship between the Level of Preparedness and Extent of Mitigation in Disaster Risk Reduction Management

Variable	**Rho**	***p*-value**	**Sig level**	**Interpretation**
Level of Preparedness Extent of Mitigation	0.797	0.000	0.05	Significant

Table 20 indicates the significance in the relationship between the level of preparedness and extent of mitigation in disaster risk reduction management. The significance in the relationship between the level of preparedness and extent of mitigation in disaster risk reduction management obtained a *p*-value of 0.000 which is lower than the 0.05 level of significance. This indicates that there is "significant relationship" when level of preparedness and extent of mitigation was compared and analyzed. Thus, the hypothesis which states that there is no significant relationship between preparedness and mitigation in disaster risk reduction management is rejected.

The level of preparedness and extent of mitigation were closely related to each other. There could not have mitigation activities without preparedness activities. Mitigation measures encompass engineering techniques and hazard-resistant construction as well as improved environmental policies and awareness (Republic Act No. 10121, 2010). Preparedness includes the development/enhancement of an overall preparedness strategy, policy, institutional structure, warning and forecasting capabilities, and plans that define measures geared to helping at-risk communities safeguard their lives and assets by being alert to hazards and taking appropriate action in the face of imminent threat or actual disaster (OCHA qouted in ISDR 2007).

Table 21
Relationship Between the Degree of Prevention and Extent of Mitigation in Disaster Risk Reduction Management

Variable	**Rho**	***p*-value**	**Sig level**	**Interpretation**
Degree of Prevention Extent of Mitigation	0.853	0.000	0.05	Significant

Table 21 reveals the significance in the relationship between the degree of prevention and extent of mitigation in disaster risk reduction management. The result showed that the obtained *p*-value was 0.000 which is lower than the 0.05 significant level. This indicates that there is "significant relationship" between the degree of prevention and extent of mitigation in disaster risk reduction management. Thus the hypothesis which states that there is no significant relationship between prevention and mitigation in disaster risk reduction management is rejected.

All the activities performed by the respondents in the level of preparedness, the degree of prevention and the extent of mitigation are significantly related to each other that the respondents should perform to be effective in their roles as school heads in disaster risk reduction management.

Conclusion

Teachers generally demonstrate the following conclusions on the level of preparedness, degree of prevention, and extent of mitigation of school heads as responses to disaster risk reduction management. For the risk reduction management, the ratings were all "high" for all stages because undoubtedly the respondents had attended more seminars and training regarding risk reduction management, and they were aware of Republic Act 20121 known as the Disaster Risk Reduction and Management Act of 2010 which they apply in times of needs regardless of disaster stages. The level of preparedness and the degree of prevention was "high" regardless of variables because the respondents were more knowledgeable and more informed on the different activities regarding disaster risk reduction management, for they had undergone training and seminars. They were cognizant of the Republic Act 20121 and the different department orders coming from the DepEd officials. Understandably, the extent of mitigation was "moderate" for younger respondents as opposed to the other variables like sex, highest educational attainment, and length of service because the younger respondents were not exposed to the different activities and strategies of mitigation due to their being young. Their experiences in relation to DRRM were limited, for they had not undergone enough training and seminars to guide them on how to go about the mitigation activities. In line with the findings in the study, the following recommendations are made: (1) The DepEd curriculum maker should include in lesson plans and learning resources knowledge regarding the hazards (i.e., types, sources, and magnitudes), vulnerability, capacity, disaster risk and history surrounding the school. (2)

It calls upon stakeholders, including local jurisdictions and communities, to "use knowledge innovation and education to build a culture of safety and resilience at all levels" and identifies the inclusion of DRR knowledge in relevant sections of school curricula at all levels. (3) To help the respondents in conducting Training on First Aid for community volunteers, they should ask the expertise of authorities like the BFP, PNP, DOH officials and also LGU representatives to conduct the First Aid training in their respective schools. The school heads themselves should attend the training and learn the trade. Community volunteers should be given incentives to motivate them to attend the training. (4) School heads should realize the importance of making changes to the disaster risk reduction plan to address the loopholes during immediate past experience. Through this, they could make a more doable and practical DRRM plan which is an improved one. They should ask the participation of everybody, teachers, LGU officials, even the pupils and other stakeholders in revising the plan. (5) For proper guidance and improvement of DRRM of all school heads of the 1st Congressional District of Negros Occidental and even the school heads in the Philippine public and private schools the following department orders/memoranda should be read, learned and implemented.

Acknowledgement

The fulfillment of this dissertation was made possible through the support and encouragement of all those who guided the researcher through all the way to reach the finishing line of her journey. For Dr. Cleo Grace T. Hinaut, her very knowledgeable and intelligent research adviser who continuously and patiently inspired and encouraged her to go on with her research study. For Dr. Rey T. Eslabon, Dr. Wilfredo O. Hermosora, Dr. Gregorio C. Moyani, Jr., and Dr. Ophelia M. Duayan, her panel members, for their valuable feedback and recommendations. Ms. Kesha J. Gonzales for her technical assistance in the completion of this paper.

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