Preparedness and Awareness of School Disaster Risk Reduction Management (SDRRM) in Gingoog City Division

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Abstract

School Disaster Risk Reduction Management is vital for the safety and well-being of students, teachers, and administrators. This study examined the level of preparedness and awareness of SDRRM among Gingoog City Division respondents. It sought to determine: (1) respondents' profiles, (2) respondents' level according to their profiles, (3) the significant difference in respondents' level of preparedness and awareness on climate change as grouped according to their profiles, and (4) the significant relationship between respondents' preparedness and awareness on climate change and SDRRM. Results revealed that coordinators and teachers have very high levels of SDRRM preparedness and climate change awareness. Furthermore, it revealed a statistically significant difference in teachers' preparedness for SDRRM and awareness of climate change. There is a significant relationship between coordinators' preparedness for SDRRM and their awareness of climate change. While teachers' preparedness and awareness were not significant. These data suggest a potential improvement path for climate change teaching in teacher training courses.

Keywords: Preparedness; Awareness; SDRRM; Climate Change

1. Introduction

In the modern world, where dealing with the growing effects of global warming and its implications, readiness and knowledge for climate change are essential. The Philippines, which is located along the Pacific typhoon belt, experiences 20 typhoons per year, five of which are destructive. Because of its geographical location and physical environment, it is very vulnerable to earthquakes and volcanic eruptions on a regular basis, as well as tsunamis, sea level rise, storm surges, landslides, flood/flash flood/flooding, and drought. On November 6, 2013, Super Typhoon Haiyan, also known as Typhoon Yolanda in the Philippines, made history by entering the Philippine Area of Responsibility (PAR). 16,078,181 people, or 3,424,593 Families, were impacted. 6,318 people were killed, 28,689 were injured, and 1,061 were still unaccounted for. It damaged 20.3 billion pesos' worth of agriculture and 19.6 billion pesos' worth of infrastructure in addition to destroying 1,140,332 homes. To address the need to adopt a holistic, all-encompassing, integrated, and proactive approach to disaster risk reduction and management in order to lessen the socio-economic and environmental effects of disasters, including climate change, and to encourage the involvement and participation of all sectors and all stakeholders concerned, at all times, Republic Act 10121, also known as the Philippine Disaster Risk Reduction and Management (PDRRM) Act, was signed into law on May 27, 2010.

The Philippine Disaster Risk Reduction and Management Act of 2010 was passed by the Philippines under Republic Act 10121. The framework for a paradigm shift from solely catastrophe preparedness to disaster risk reduction and management has been established by this legislation. For people's welfare and security, it aims to foster gender-responsive and rights-based sustainable development practices.

People continue to struggle with serious global issues that threaten the very future of civilization and possibly even the existence of life. The threat of the pandemic persists, along with that of climate change, which has made extreme weather more frequent, unsolved conflicts around the world, and many others. New global issues can and do occur as human civilization progresses, such as population growth, conflict, deprivation, extinction and loss of biodiversity, pandemics, and global warming. Humans have not done a good job of adapting to the changes that produce natural disasters like climate change.

According to Kreft, Eckstein, and Melchior (2017), the Philippines is one of the country's most at risk from climate change. The country is already seeing the effects of climate change, such as the obvious change in seasons, stronger typhoons, and the ludicrous rise in sea level. Unquestionably, the Philippines is vulnerable to natural disasters. Properly disseminating knowledge about this dire condition should be one of the government's priorities, particularly in the education sector.

In order for the schools to update their curricula and make interventions, particularly for the internal and external stakeholders of the academic community, there is a critical need to better comprehend environmental challenges. The group of individuals who are most impacted is the current generation of youth, thus it is crucial to understand more about what they know and what they do not know about environmental concerns as well as how they respond to them. Hence, the Department of Education released DO No. 83 s. 2011 and DO No.21 s. 2015, which offers instructions on how to put disaster preparedness measures and protocols for the coordination of disaster risk reduction and management and information management into practice. Therefore, it is the responsibility of the schools to develop, improve, and maintain systems for foreseeing, planning for, and reacting to the effects of such threats, with the assistance of various levels of governance and offices of the Department of Education (DepEd). In order to enable school-based DRRM measures, the Schools Division Office, Regional Office, and Central Office must provide support as outlined in the Guidelines for School-Based Disaster Preparedness and Response Measures for Tropical Cyclones, Flooding, and Other Weather-Related Disturbances and Calamities (DepEd Order 33 s. 2021).

2. Theoretical and Conceptual Framework

This study utilized and anchored on the Social Learning Theory proposed by Albert Bandura (1977). As cited by LaMorte (2019), the Social Learning Theory (SLT) evolved into the Social Cognitive Theory (SCT), incorporating the notion that learning occurs in a social context, with a dynamic and reciprocal interaction of the person, environment, and behavior, and a cognitive context that takes into account prior experiences that influence engagement in behavior. This is being highlighted in the context of preparedness for calamities, where people showed motivation to do so. Motivated people develop the intent to plan ahead.

Furthermore, in the Level of Awareness, it is also anchored in Sigmund Freud (1923), as cited by Kendra (2017), a theory in the level of awareness. The authors above cited three levels of consciousness used in the analysis of the level of awareness of students regarding Global Issues. The three levels of awareness are the following: Conscious, Preconscious, and Unconscious. When someone is aware of at any given time, it constitutes their level of consciousness. It comprises whatever is now going through the person's head, whether it is at the front or the rear. It is the conscious mind when the person is aware of it. Second, information that is below the level of consciousness but can be relatively easily retrieved—information that is typically thought of as memory or recollection—is present in the preconscious level of awareness. The

Unconscious, which is located underneath a person's conscious awareness, is the third level of awareness and is where thoughts, memories, and desires are hidden.

The Emergency Management Theory was also used in this study. Emergency management is defined as the actions taken by an organization in response to unexpected events that adversely affect people or resources and threaten the continued operation of the organization (Ezenyilimba, Maduagwu & Eze, 2018). It involves creating emergency recovery plans, reducing the likelihood of disasters, and putting such preparations into action that depend on disaster. The emergence of various disasters of various types, including floods, building collapses, road accidents, pipeline explosions, epidemics, bomb blasts, terrorism, and inter-communal conflicts, which not only halt development but also cause severe human survival damages, is forcing various nations to use every available alternative to either stop them from happening or lessen their effects.

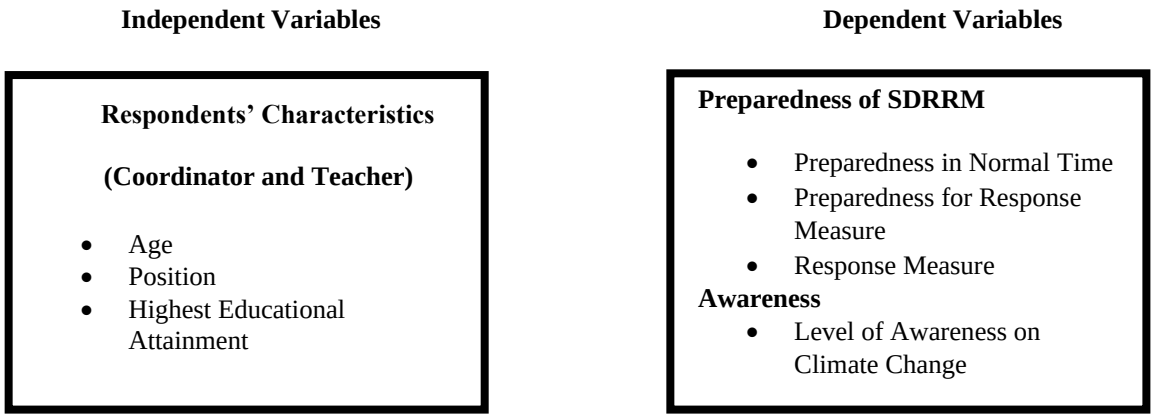

Figure 1. Schematic Presentation Showing the Interplay between Independent and Dependent Variables of the study.

3. Statement of the Problem

This study aimed to find out the level of preparedness and awareness of SDRRM in Gingoog City Division for the School Year 2022-2023. It specifically aimed to respond to the following inquiries: (1) How are the respondents distributed in terms of: Coordinators and Teachers' age, position, and highest educational attainment. (2) What is the respondents' level in terms of the following: Preparedness of SDRRM in terms of Normal Time, Preparedness for Response Measure; Response Measure, and Awareness on Climate Change. (3) Is there a significant difference in the respondents' level of preparedness and awareness on climate change as grouped according to their characteristics and (4) Is there a significant relationship between respondents' preparedness and awareness of climate change to SDRRM?

4. Methodology

This chapter presents the methods in the conduct of the study. Specifically, this chapter discussed the research design, research setting, respondents and sampling procedure, the research instrument, the data gathering procedure, the categorization of variables, and the statistical treatment.

4.1 Respondents and Sampling

The respondents in this study were the SDRRM Coordinators and Teachers of Gingoog City Division. The researcher surveyed the ninety-five (95) SDRRM Coordinators and ninety-five (95) selected Teachers of Gingoog City Division, with a total of one hundred ninety (190) respondents. The study employed purposive sampling in identifying the respondents. The distribution of the respondents is shown in Table A below.

Table A
Distribution of Respondents

District	Population	Sample Size
North 1	123	19
North 2	115	19
North 3	157	19
East 1	145	19
East 2	148	19
West 1	165	20
West 2	129	20
West 3	135	20
South 1	158	20
South 2	144	20
Total	**1419**	**190**

4.2 Research Instrument

To gather the necessary data, the researcher utilized and adapted the questionnaire from the following: School-based disaster preparedness and response measures for tropical cyclones, flooding, and other weather-related disturbances and calamities are outlined in DO 33 s.2021 (Checklist). The Agboola (2016) study, "Awareness of Climate Change and Sustainable Development Among Undergraduates from Two Selected Universities in Oyo State, Nigeria," provided the basis for the level of awareness on climate change questionnaires.

The questionnaire consists of three (3) parts. Part I consists of respondents' characteristics which include age, position, and highest educational attainment, while the Part II consists of a preparedness checklist of SDRRM such as Normal Time, Preparedness in Response Measure and Response Measure. Part Ill is on the level of awareness of climate change.

4.3 Data Collection

Before gathering the data, the researcher sought permission from the Phinma-Cagayan de Oro College Graduate Office. When the permission was approved, a letter requesting authorization was sent to the Division Superintendent of the Department of Education. After approval, a letter was sent to the School District Supervisor and, lastly, to the School Heads of the respective institutions requesting permission to undertake the study. The researcher presented the respondents with the study's purpose. The researcher used the questionnaires to collect the essential data. Finally, the papers were collected, interpreted, and analysed.

4.4 Categorization of Variables and Scoring Procedure

To ensure appropriateness of data gathered for the study, the variables are categorized into the following;

Part I. Respondents' Characteristics
Coordinators and Teachers

Age:

41 years old and above
36-40 years old
31-35 years old
26-30 years old
21-25 years old

Position:

Master Teacher I - Master Teacher III
Teacher I - Teacher III

Highest Educational Attainment:

Doctorate Degree
Master's Degree
Bachelors' Degree

Scoring Procedure

To eliminate bias in the results, the Likert scale was utilized, with the following scale and interpretation:

Part II. Preparedness of SDRRM

Scale	Range	Description	Interpretation
4	3.26-4.0	At all Times	Very High
3	2.51 -3.25	Most of the Time	High
2	1.76 – 2.50	Seldom	Low
1	1.00 – 1.75	Never	Very Low

Part III. Level of Awareness on Climate Change

Scale	Range	Description	Interpretation
4	3.26-4.00	Extremely Aware	Very High
3	2.51- 3.25	Moderately Aware	High
2	1.76- 2.50	Slightly Aware	Low
1	1.00-1.75	Not Aware	Very Low

4.5 Statistical Treatment

The following statistical tools were used to analyse the data for each problem. Frequency count, percentage, weighted mean, and standard deviation were used to determine the coordinators and teachers' characteristics in terms of age, position, and highest educational attainment. The same descriptive statistics were used to describe the respondents' preparedness of SDRRM and level of awareness in terms of climate change. The test of significant difference was done using one-way ANOVA. For the correlation, the test was done using Pearson r to determine the relationship between the preparedness and awareness of SDRRM in Gingoog City Division. This is to find the statistical relationship or association between the variables.

5. Results and Discussions

This chapter presents, analyses, and interprets the obtained results of the study and the discussion of its findings. The presentation of the findings was anchored on the sequential display of the study's statement of the problem and was analyzed and treated with appropriate and identified needed statistical tools and methods. The main thrust of this study was to determine the preparedness and awareness of SDRRM in Gingoog City Division.

Problem 1. How are the respondents distributed in terms of: Age, Position, and Highest Educational Attainment

Table 1. Distribution of Respondents According to their Characteristics

Characteristics	Frequency		Percentage	
	Coordinators	Teachers	Coordinators	Teachers
Age				
41 and above	17	13	17.9	13.7
36-40	15	7	15.8	7.4
31-35	18	16	18.9	16.8
26-30	36	41	37.9	43.2
21-25	9	18	9.5	18.9
Total	**95**	**95**	**100**	**100**
Position				
Master Teacher I-III	12	6	12.6	6.3
Teacher I-III	83	89	87.4	93.7
Total	**95**	**95**	**100**	**100**
Highest Educational Attainment				
Doctorate Degree	0	0	0	0
Master's Degree	54	53	56.8	55.8
Bachelor's Degree	41	42	43.2	44.2
Total	**95**	**95**	**100**	**100**

Table 1 displays the distribution of respondents' characteristics according to age, position, and highest educational attainment. In terms of age, teachers'-respondents had the highest frequency of (41, or 43.2%), belonging to the age bracket of 26-30 years old. While the coordinators'-respondents got the lowest frequency of (9, or 9.5%), fell into the bracket of respondents who were between the ages of 21 and 25 years old. The majority of respondents are between the ages of 26 and 30, according to this data. This suggests that teachers between the ages of 26 and 30 are more likely to possess the expertise and knowledge required to meet the objectives of the school, particularly when it comes to activities like participating in programs and trainings, as well as being more likely to possess the abilities required for their area of specialization. However, those between the ages of 21 and 25 are neophytes in the sector and they need to become familiar and learn with the DepEd's organizational structure. In addition, the ages of 26-30 are likely to have more experience compared to those ages of 21-25 counterparts. This experience can bring valuable insights, wisdom and lessons learned that can benefit the coordination role. They may have encountered various challenges, developed problem-solving skills, and gained a deep understanding of organizational dynamics, which can contribute to effective coordination. Although there are advantages of age when it comes to coordination, it is important to understand that doing so can result in age discrimination and could leave out other crucial aspects like qualifications, abilities, and performance.

In terms of position, teachers-respondents got the highest frequency of 89 (93.7%), which is under the bracket of Teacher I-III compared to the position of coordinators which got a frequency of 83 (87.4%). Coordinators with a position of Master Teacher I-III got a frequency of 12 (12.6%), while for teachers who are already in Master Teachers' position, they got frequency of 6 (6.3%). This shows that the majority of respondents fall into the teacher I–III category, which also suggests that the majority of the teachers in the Gingoog City Division are in this category. This also implies that there are still more teachers in Teacher I–III positions, maybe due to the limited number of vacancies and the lack of openings in higher positions. Having a Master's Degree means you have advanced knowledge and skills in that profession. If coordinators with master's degrees are still in low-level roles that do not utilize their skills, there is a mismatch between their qualifications and the requirements for the job. This could also be a result of a shortage of openings in higher positions or a lack of value in their additional education. As a result, Teacher I–III make up the majority of those designated as coordinators.

For the highest level of educational attainment in the categories of bachelor's, master's, and doctorate degrees. The coordinators'-respondents who got the highest frequency of 54 (56.8%) already have a master's degree. For teachers'-respondents got 53 (55.8%). The Doctorate degree has a 0% prevalence. This suggests that no respondents hold a doctoral degree, and it may also imply that those who do are already in positions of more authority, such as school administrators or heads of schools.

The results further indicate that the majority of coordinators-respondents had a master's degree already. However, expertise in coordination does not necessarily follow from a master's degree. Being the SDRRM coordinator requires a lot of extra work because it is such a crucial and significant position that necessitates a lot of time and effort, especially during emergencies. Training and seminars should be made available and supplied to assist people in honing their skills and becoming experts in their field.

Problem 2. What is the respondents' level in terms of the following: Preparedness of SDRRM in terms of normal time, preparedness for response measure, response measure, and awareness on climate change

Table 2. Distribution of Respondents' Level of Preparedness of SDRRM in terms of Normal Time

Indicators	Mean		SD		Description	
	COORD	TEACHER	COORD	TEACHER	COORD	TEACHER
Ensure the availability of updated baseline education data of the school.	3.42	3.28	.537	.630	At all times	At all Times
When possible, use the second or higher floors of multi-story school buildings for laboratory, computer, and techVoc rooms and equipment.	3.25	2.98	.798	.792	Most of the Time	Most of the Time
Remove structures or items (e.g., garden, landscape decorations, school ground furniture).	3.47	3.18	.562	.762	At all Times	Most of the Time
Prune/trim trees that may cause harm to people or damage structures or properties in the event of any weather disturbances.	3.52	3.21	.580	.727	At all Times	Most of the Time
Regularly clean and clear all drainage systems.	3.46	3.22	.615	.827	At all Times	Most of the Time
Conduct and annual risk assessment through the student-Led Watching and hazard Mapping.	3.28	3.29	.709	.599	At all Times	At all Times
Coordinate with the local DRRM council to harmonize and align DRRM measures.	3.42	3.33	.645	.723	At all Times	At all Times
Create and /or update the School DRRM Contingency Plan.	3.55	3.31	.578	.623	At all Times	At all Times
Integrate DRRM in regular school programs and activities and in the School Improvement Plan (SIP).	3.42	3.31	.611	.606	At all Times	At all Times
Pre-identify the possible locations for temporary learning spaces (TLS) and alternative delivery modes of education.	3.37	3.15	.604	.641	At all Times	Most of the Time
Establish and operate an Early Warning System (e.g., bulletin board for weather advisories, bell/siren emergency signal, mobile or web-based warning system.	3.45	3.29	.648	.650	At all Times	At all Times
Maintain, disseminate, and post relevant and updated emergency hotlines and disaster measures and plans in strategic locations throughout the school.	3.44	3.35	.663	.651	At all Times	At all Times
In coordination with concerned DepEd offices and community stakeholders, make available emergency response equipment and supplies.	3.37	3.15	.604	.589	At all Times	Most of the Time
Conduct quarterly multi-hazard drills applicable to the school's identified hazards. Involve the LGU,parents/guardians, partners and other stakeholders in the conduct of the drills.	3.36	3.23	.653	.706	At all Times	Most of the Time
Conduct capacity building activities including but not limited to basic life support and use of the emergency and response equipment and coordination mechanisms, involving learners, personnel, and community stakeholders.	3.28	3.05	.663	.763	At all Times	Most of the Time
Overall	**3.41**	**3.22**	**.392**	**.387**	**At all Times**	**Most of the Time**

Legend: 3.26-4.00= At all Times/Very High, 2.51-3.25= Most of the time/High,
1.76-2.50= Sometimes/ Low, 1.00-1.75= Never/ Very Low

Table 2 shows the coordinators and teachers' level of preparedness of SDRRM in terms of normal time. Overall, results show that the preparedness of SDRRM in terms of normal time is 3.41 (SD= .392) for coordinator-respondents described as **At all Times** and interpreted as **Very High.** While for teacher-respondents results show with the mean of 3.22 (SD= .387), described as **Most of the Time** and interpreted as **High.** This means that coordinators and teachers are prepared in terms of normal time. It is essential for coordinators and teachers to be prepared for disasters even during normal times to ensure the safety of students, enable timely responses, provide support to students, facilitate effective communication and educate students on disaster preparedness. It is a crucial responsibility for both coordinators and teachers to prioritize these aspects of their role, as part of their responsibility, which is to create a plan. Effective planning is the first step towards being prepared, whether a crisis occurs or not. It entails creating extensive plans, rules, and procedures to deal with anticipated risks and their effects. An effective strategy improves the capacity to react swiftly and effectively to emergencies. Collaboration and coordination are also crucial. To be prepared, many individuals must work together and in unison, not just one. Schools should coordinate with the government agencies, non-governmental organizations (NGO), and community members ought to be involved. By ensuring that resources, knowledge, and information are shared, coordination reduces effort duplication and increases effectiveness. Collaboration among various stakeholders helps develop comprehensive and integrated preparedness plans.

Horca et al. (2020) aimed to determine the preparedness of City Schools of Trece Martires in terms of Disaster Risk Reduction Management. Since disasters can happen at any time, the researchers wanted to evaluate their district's disaster risk management preparedness and utilized the results as the foundation for their preparedness plans. The chosen school heads and DRRM teacher coordinators from the school took part in this study. This study's three disasters—fire, typhoon, and earthquake—found that schools in Trece Martires City were generally prepared to respond to them.

The indicator **create and /or update the School DRRM Contingency Plan,** obtained the highest mean of 3.55 (SD=.578), described as **At all Times** and interpreted as **Very High** which is answered by coordinators'-respondents. This implies that coordinators had prepared and organized the school's contingency plan at the beginning of the school year. They ensure that the school has a contingency plan in place because it is crucial for readiness and planning for any eventualities. It is a vital tool for ensuring resilience and mitigating the impacts of disasters on schools, communities and organizations. According to Comighud (2020), contingency planning is a vital tool, but it cannot stand alone without an empowered populace, infrastructures, disaster response protocols, rehabilitation, and other important criteria. Furthermore, findings show that the schools created a mitigating measure to minimize the impact of any particular disaster by creating a systematic contingency plan for the school's safety and the community's overall safety (Santoyo, 2019).

On the other hand, the indicator **when using the second or higher floors of multi-story school buildings for lab, computer, and techVoc rooms and equipment, when possible,** got the lowest mean of 2.98 (SD=.792), described as **Most of the Time** and interpreted as **High.** This means that not every school in Gingoog City utilizes the second level as a lab and computer room. This might be because most schools are situated in elevated areas where flooding is not a concern. Also, not all teachers are concerned about the school's equipment, like computers and other materials, because the school administrator has already designated someone to take good care of the equipment. Furthermore, it suggests that educators are already prepared for emergencies. Suppose the schools have not utilized higher levels of the classroom for computer use and the storage of other crucial data. t is critical for the designated individual to prepare backup storage, such as the usage of strong and safe containers. Schools should invest in long-lasting, waterproof containers, boxes, or shelving units to store school supplies. According to Donnell (2019), thinking in terms of an enabled environment may result in the finest possible form of an enabling environment for catastrophe risk reduction.

Table 3. Distribution of Respondents' Level of Preparedness of SDRRM in terms of Preparedness for Response Measures

Indicators	Mean		SD		Description	
	COORD	TEACHER	COORD	TEACHER	COORD	TEACHER
Activate warning systems to disseminate advisories to learners and personnel.	3.52	3.15	.542	.748	At all Times	Most of the Time
Coordinate with the LGU, using existence guidelines, on the cancellation or suspension of classes and work.	3.40	3.22	.625	.717	At all Times	Most of the Time
Take necessary steps to secure weak parts of school buildings against heavy rains and strong winds.	3.34	3.14	.740	.635	At all Times	Most of the Time
Prune/trim trees that may cause harm to people or damage structures or properties in the event of any weather disturbances.	3.42	3.13	.661	.780	At all Times	Most of the Time
Clean and clear all drainage systems.	3.43	3.22	.630	.702	At all Times	Most of the Time
Switch off electrical lines.	3.43	3.25	.678	.683	At all Times	Most of the Time
Safeguard (e.g., place inside containers to protect against water) and transfer education resources and vital records in the pre-identified storage area.	3.29	3.08	.633	.724	At all Times	Most of the Time
Overall	**3.40**	**3.17**	**.444**	**.433**	**At all Times**	**Most of the Time**

Legend: 3.26-4.00= At all times/Very High, 2.51-3.25= Most of the time/High,
1.76-2.50= Sometimes/ Low, 1.00-1.75= Never/ Very Low

Table 3 shows the coordinators and teachers' level of preparedness of SDRRM in terms of preparedness of response measures. Overall, results show that the preparedness of coordinators in terms of preparedness of response measure is **Very High** as indicated by the overall mean of 3.40 (SD = .444). This means that during disaster coordinators are prepared in response measures. This further implies that coordinators are effective in responding during the disaster. For the teacher-respondents, the overall mean is 3.17 (SD= .433), described as **Most of the Time** and interpreted as **High.** This means that teachers are also prepared in response measures. Coordinators had the greatest mean, which defined them as always being present in all measurements, according to the results, whereas teachers were mostly present. This may indicate that disaster coordinators are doing their responsibilities in accordance with the DepEd Order checklist of School-Based Disaster Preparedness and Response Measures for Tropical Cyclones, Flooding and Other Weather-Related Disturbances. Along with the SDRRM coordinator, teachers contributed as well. Being ready to take action in the event of a disaster is essential since one is already taking place. Everyone should work hand in hand to reduce the effects of disaster. To reduce risks, save lives, and ensure a safe and effective response during emergencies, activate contingency plans, be proactive, have clear processes in place, and put the drills and training into action.

In the study of Lopez et al. (2018) on the public secondary schools in Buenavista, Bohol examined the degree of compliance with the risk reduction and disaster preparedness program. It is understood that risk mitigation is essential for creating a more equal future and for lessening the severity of losses during disasters. Further, the indicator **activates warning systems to disseminate advisories to learners and personnel,** which was answered by the coordinator-respondents, got the highest mean of 3.52 (SD= .542), described as **At all Times** and interpreted as **Very High.** This indicates that schools use a variety of advisory techniques to

ensure students' safety during emergencies. Learners and staff can be educated about safety protocols, evacuation processes, and other essential safety precautions by receiving alerts through warning systems. It is important to raise awareness campaigns. Educate the public, especially the learners, about the warning systems and how to respond to alerts during disasters. Promote awareness through community outreach programs, educational campaigns, and informative materials. Encourage individuals to be alert and respond quickly when warning systems are activated. Activating warning systems to disseminate advisories to learners and personnel is a crucial aspect of ensuring the safety and well-being of individuals in various settings, such as educational institutions, workplaces, or public spaces.

Warning systems play a pivotal role in alerting individuals to potential hazards, emergencies, or critical information. These systems can encompass a variety of methods, including alarms, notifications, sirens, and digital alerts. It is vital for the safety of learners and personnel. Whether it's a fire alarm in a school, a weather alert in a workplace, or a public health advisory, timely warnings can prevent accidents and save lives. Effective warning systems are a cornerstone of crisis management. They allow organizations to respond quickly and efficiently to emergencies, reducing panic and confusion and communication, ensuring effective communication with all stakeholders. They enable authorities to disseminate critical information rapidly, reaching both learners and personnel.

Events that result in significant losses to people or property are considered emergencies, and communities must respond with standard practices and resources (Kapucu et al., 2022). An effective way to ameliorate the impact of emergencies on communities is for governments to issue alerts and warnings to the public before, during, and after emergencies. Regular communication methods are frequently disrupted by disasters, making it difficult to transmit crucial information. Contrarily, warning systems are made to function even in difficult circumstances and can aid in bridging communication gaps. By turning on these technologies, advisories can be delivered to workers and students in an efficient manner, boosting communication throughout a disaster. In their investigation of the use of radios in emergency situations, Spence et al. (2022) discovered, among other things, that radio stations continue to practice crisis planning and training and regard the Emergency Alert System (EAS) as a useful tool.

The indicator, **safeguard (e.g., place inside containers to protect against water) and transfer education resources and vital records in the pre-identified storage area,** which is answered by the teachers, obtained the lowest mean of 3.08 (SD= .724) described as **Most of the Time** and interpreted as **High.** This indicates that some teachers may not be entirely concerned about protecting the school's records in the event of a crisis. This is possibly because the schools have already designated staff to protect the information. Monitoring and reviewing the important records should be part of the evaluation of the classroom as well. Not only should the organization of the classroom be considered, but also the proper and correct storage of significant student records.

As observed, as practiced in schools, safeguarding education resources and vital records by placing them inside containers designed to protect against water damage and storing them in pre-identified storage areas is essential for several critical reasons. These education resources often include valuable materials like textbooks, curriculum plans, research documents, and historical records. Vital records encompass essential administrative and legal documents, such as student records, financial records, and accreditation documentation. Safeguarding these resources is vital to ensure their long-term preservation. By placing them inside waterproof containers and storing them in designated areas, we shield them from potential water damage, which can result from various sources, including floods, leaks, or even accidental spills. By proactively safeguarding education resources and vital records, institutions and organizations mitigate the risk of substantial financial losses and legal consequences that can result from the loss or damage of critical information. In many cases, there are legal requirements mandating the preservation of certain records for a specified period. Failure to meet these requirements can lead to severe penalties. Additionally, the cost and

effort required to recreate lost or damaged materials can be significant. Therefore, taking preventative measures, such as using waterproof containers and designated storage areas, is a proactive risk management strategy. Some educational institutions and organizations are legally bound to safeguard certain types of records and information, often for regulatory or compliance reasons. Failure to comply with these requirements can have legal and financial implications. By establishing a systematic approach to safeguarding and transferring education resources and vital records, institutions demonstrate their commitment to compliance and accountability, which can have positive implications for reputation and stakeholder trust.

Cubillas et al. (2022) implied that schools are already aware of the program's strengths and requirements. The participants, on the other hand, lack enough knowledge of the equipment's accessibility and availability. The equipment being kept in a storage facility or another secure location to prevent damage is one factor that could be involved.

During a disaster, the teachers' main responsibility is to ensure the safety of the students. Many teachers were concerned about child supervision, lifesaving, life maintenance, evacuation shelter management, and school administration. Child management was the most concern of these issues (Kawasaki et al., 2022). Hence, safeguarding education resources ensures the preservation of critical information, maintains continuity of education and operations, mitigates risk, and demonstrates compliance and accountability.

Table 4. Distribution of Respondents' Level of Preparedness of SDRRM in terms of Response Measures

Indicators	Mean		SD		Description	
	COORD	**TEACHER**	**COORD**	**TEACHER**	**COORD**	**TEACHER**
Status of preparedness and /or response measures.	3.40	3.15	.720	.657	At all Times	Most of the Time
Updates on the impacts of the hazard (e.g., suspension of classes and work, the use of the school as an evacuation center, impacts to learners and personnel).	3.48	3.31	.616	.718	At all Times	At all Times
If safe, undertake a rapid assessment of the impacts of the damages from the hazard.	3.38	3.12	.606	.639	At all Times	Most of the Time
Continue the submission of reports and updates to the Division DRRM Coordinator.	3.35	3.25	.634	.635	At all Times	Most of the Time
Deploy response and learning continuity interventions, in coordination with the School Division Office and other community stakeholders and partners.	3.29	3.29	.697	.633	At all Times	At all Times
Continue to implement response and learning continuity interventions, including the conduct of Psychological First Aid for affected learners and personnel.	3.31	3.38	.672	.704	At all Times	At all Times
Continue coordination and the submission of reports and updates to the Division DRRM Coordinator including submission of RADaR.	3.38	3.29	.588	.650	At all Times	At all Times
Overall	**3.37**	**3.26**	**.510**	**.409**	**At all Times**	**At all Times**

Legend: 3.26-4.00= At all times/Very High, 2.51-3.25= Most of the time/High,
1.76-2.50= Sometimes/ Low, 1.00-1.75= Never/ Very Low

Table 4 shows the coordinators and teachers' level of preparedness in terms of response measures. Response measures happen 72 hours onwards after the disaster. Overall, results show that the preparedness of SDRRM in terms of preparedness of response measure is Very High described as **At all Times** as indicated by the overall mean of 3.37 (SD =.510) for coordinator-respondents while 3.26 (SD=.409), described as **At all Times** for teacher-respondents. This demonstrates that even when a calamity strikes, coordinators and teachers are always ready with emergency measures. Given the indications and the conclusion that they were mainly observed at all times, this implies that all indicators were seen when disaster response was underway. This indicates that resilience happens after a disaster through efficient and thorough response calls for excellent coordination and collaboration across many stakeholders, including governmental organizations and non-profit organizations. Verschuur (2020) mentioned that a welfare-oriented perspective like 'leaving no one behind' helps to identify adaptation options that enhance resilience.

Furthermore, the highest mean obtained by the coordinators is 3.48 (SD=.616), described as **At all Times** and interpreted as **Very High** with the indicator, **updates on the impacts of the hazard (e.g., suspension of classes and work, the use of the school as an evacuation center, impacts to learners and personnel).** This means that coordinators are actively doing their task which is also important in order to prevent casualties. Immediate preparedness for response measures shall be undertaken by the SDRRM coordinators and shall ensure that such advisories are properly disseminated. Coordinators of SDRRM and teams must take steps to respond in emergencies. Such actions must take into account the local environment of different learners, including those with impairments, and must respond to those needs.

Moreover, the indicator **continues to implement response and learning continuity interventions, including the conduct of Psychological First Aid for affected learners and personnel,** teachers obtained the highest mean of 3.38 (SD=.704), described as **At all Times** and interpreted as **Very High**. As mentioned, the main responsibility of teachers is the welfare and security of the students in times of disaster. Not only the physical safety but also the mental health of every student. As mentioned in the study of (Clayton et al., 2017), emotional distress brought on by climate change can cause additional psychological problems like substance abuse and other mental health disorders. As supported in the study, fifty-eight percent of Gen Z reported stress caused by news events related to climate change (Bethune, 2019). If this generation of young people is already dealing with mental health concerns, they are unlikely to be inspired to tackle a global issue like climate change and also to cope with the effects of disaster. As a result, teachers must provide psychological assistance.

On the contrary, the indicator, **if safe, undertake a rapid assessment of the impacts of the damages from the hazard,** which was answered by the teachers received the lowest mean of 3.12 (SD=.639), described as **Most of the Time** and interpreted as **High.** This means that the teachers did not actually carry out the implementation. This is likely a result of the numerous tasks that the teachers prioritize, which forces them to place less of an emphasis on DRRM for disasters related tasks. This also means that teachers are not given priority in performing rapid assessments because this duty should be performed by the SDRRM's appointed coordinator.

Also, it is stipulated in the Department Order No. 21, S. 2015 or the Disaster Risk Reduction and Management Coordination and Information Protocol, that the SDRRM Coordinator shall be different from the School Head to allow for dedicated personnel to handle DRRM. Each School Head shall designate from the pool of permanent school personnel, one could be teaching or non-teaching personnel staff to serve as the SDRRM Coordinator. Whenever feasible, the SDRRM Coordinator should be a non-teaching personnel. This is to ensure that teachers are spared from doing non-teaching-related work. However, many schools in Gingoog City Division with no non-teaching staff. So, there are still a lot of teachers who are designated as coordinators. Teachers occasionally find it difficult to prioritize their assigned coordinatorships, like SDRRM

because they have a lot of work to do. Despite this, the outcome is positive since, in the absence of the coordinators, teachers will take over the role of providing immediate assessments following the accident. As a result, teachers should be held accountable for part of the coordinators' tasks. The study by Gokmenuglo et al. (2023) highlighted that teachers with disaster education experience have higher levels of disaster preparedness beliefs than those with no experience.

Table 5. Distribution of Respondents' Level of Awareness of Climate Change

Indicators	Mean		SD		Description	
	COORD	TEACHER	COORD	TEACHER	COORD	TEACHER
Climate change is happening	3.47	3.43	.580	.646	At all Times	At all Times
Climate change manifests in diverse ways in the world	3.36	3.26	.565	.622	At all Times	At all Times
We are already experiencing the impacts of climatic change	3.42	3.38	.628	.588	At all Times	At all Times
Climate change is an immediate and urgent concern	3.49	3.22	.666	.675	At all Times	At all Times
Climate change is a threat to sustainable development	3.44	3.38	.613	.640	At all Times	At all Times
There are climate change research agencies at both national and global levels that I know	3.45	3.34	.664	.711	At all Times	At all Times
Climate change is more harmful than beneficial	3.52	3.41	.616	.610	At all Times	At all Times
Climate change is caused mostly by human activities, not natural changes in the environment	3.55	3.49	.520	.599	At all Times	At all Times
Climate change increases surface temperature	3.48	3.45	.599	.648	At all Times	At all Times
Climate change causes rise in sea levels	3.43	3.41	.678	.592	At all Times	At all Times
Climate change increases the intensity of extreme weather events like heat waves, tornadoes, hurricanes and heavy rainfalls	3.52	3.48	.580	.616	At all Times	At all Times
Climate change leads to longer and more drought	3.38	3.38	.673	.623	At all Times	At all Times
Climate change leads to coastal erosion	3.30	3.25	.685	.699	At all Times	Most of the time
Climate change poses threats to food security	3.44	3.35	.596	.682	At all Times	At all Times
Climate change causes economic depression	3.32	3.28	.643	.663	At all Times	At all Times
Overall	**3.44**	**3.37**	**.357**	**.373**	**At all Times**	**At all Times**

Legend: 3.26-4.00= At all Times/Very High, 2.51-3.25= Most of the Time/High,
1.76-2.50= Sometimes/ Low, 1.00-1.75= Never/ Very Low

Table 5 shows the coordinators and teachers' level of awareness on climate change. Overall, results show that the level of awareness on climate change for coordinators with an overall mean of 3.44 (SD = 0.357) and for the teachers with overall mean of 3.37 (SD= 0.373) described as **At all Times** and interpreted as **Very High.** This means that both teachers and coordinators are much aware about climate change. The results revealed

that coordinators and teachers share a very high degree of awareness on climate change. The reason could be the teaching specialty, educational attainment, and seminar participation have a big impact on their degree of awareness. It is clear that teachers and coordinators are very much aware and concerned about climate change. It is, nevertheless, critical to build a supportive and encouraging environment in which teachers feel empowered to openly research and debate climate change subjects. By providing teachers with knowledge and resources, they may effectively educate and motivate the next generation to be responsible environmental stewards.

Contrary findings were reported in research of Turkish pre-service science teachers' understanding of, beliefs in, and behaviours related to climate change (Higde, Oztekin, & Sahin, 2017). In other cases, pre-service teachers were even discovered to ignore climate change itself. In addition, the teachers' level of awareness is significantly influenced by the teaching field, education level, and seminar and attendance. This is supported by data showing that a lack of information and a lack of climate change sensitization contributed to a low degree of awareness (Dorji et al. 2021).

The indicator, the climate change is caused mostly by human activities, not natural changes in the environment got the highest mean obtained by the coordinator-respondents with the mean of 3.55 (SD= .520) and 3.49 (SD=.616), described as **At all Times** for teacher-respondents. This means that both teachers and coordinators' awareness of climate change is mainly because of human activities like cutting down of trees aggravates climate change. These results point to the fact that coordinators as being teachers also understood climate change based on their day-to-day interaction with the environment. The overwhelming majority of evidence leads to the obvious conclusion that humans are the primary cause of climate change. Humans are the ones who produce livestock, use fossil fuels, remove forests, and add to the atmosphere's heat-trapping gas concentration.

Similar to the study of Seroussi (2019), posited that all teachers who think that human activities are the primary source of the increase in greenhouse gases would also reject the view that it is mostly driven by natural changes. The goal of this semantic shift was to express the variety of climate phenomena associated with global temperature change (not only an increase in hot temperatures, but also cases of extreme cold weather, rising sea level, and changes in wildlife cycles), as well as to account for the variety of sources influencing the earth's climate (both human activity and natural factors such as variations in ocean temperature or volcanic activity).

On the other hand, in the indicator, **climate change leads to coastal erosion,** both coordinators and teachers' respondents obtained the lowest mean of 3.25 (SD=.699), described as **Most of the Time** and interpreted as **High** and for the coordinators with the lowest mean of 3.30 (.685) described as **At all Times**. This means that teachers are aware but not well-informed about climate change and its connection to coastal erosion. Another reason is may be because of outdated knowledge, limited resources and curriculum, and lack of awareness and interest, and not relevant to their field of teaching subject areas. Addressing the knowledge gap among teachers regarding climate change and coastal erosion is crucial in order to provide students with accurate and comprehensive education on this pressing environmental issue. Coordinators and teachers need to access to updated information, professional development opportunities, and support from educational institutions in order to enhance their understanding and effectively educate future generations about the coastline erosion and the effects of climate change.

According to Nation et al (2022), given the complexities of teaching climate change, as well as the controversial nature of the topic, it is critical to analyse science instructors' instruction of this idea. Additionally, as instructors begin to incorporate climate change into their courses, there is an increasing need to investigate what specific teachers believe should be done to teach about climate change in science classes.
Many of these studies have expressly advocated addressing this lack of information, notably among school teachers, about the effects, causes, and mitigation of climate change (Ho & Seow 2017).

Problem 3. Is there a significant difference in the respondents' level of preparedness and awareness on climate change as grouped according to their characteristics?

Table 6. Comparison of Respondents' Level of Preparedness and Awareness of Climate Change

Respondents' Profile	Variables							
	Normal Time		Preparedness for Response Measure		Response Measure		Awareness on Climate Change	
	COORD	TEACHER	COORD	TEACHER	COORD	TEACHER	COORD	TEACHER
	F-value P-value	F-value P-value	F-value P-value	F-value P-value	F-value P-value	F-value P-value	F-value P-value	F-value P-value
Age	1.655 .167 **NS**	1.065 .379 **NS**	.330 .857 **NS**	.759 .555 **NS**	.534 .711 **NS**	534 .711 **NS**	.783 .539 **NS**	.783 .539 **NS**
Position	.338 .563 **NS**	.828 .365 **NS**	102 .750 **NS**	6.030 .016 **S**	.959 .330 **NS**	.959 .330 **NS**	.240 .626 **NS**	.240 .626 **NS**
Highest Educational Attainment	.470 .495 **NS**	.002 .964 **NS**	3.581 .062 **NS**	2.128 .148 **NS**	3.765 .055 **NS**	3.765 .055 **NS**	.951 .332 **NS**	.951 .332 **NS**

Legend: **S-Significant** **NS-Not Significant**

A one-way ANOVA was performed to determine whether there exists a significant difference in the level of respondents' preparedness and awareness on climate change when grouped according to their profile. Overall, the respondents' profiles showed no significant difference in their level of preparedness for SDRRM and awareness of climate change as indicated by the f-value and probability value greater than 0.05 alpha level, which led to the acceptance of the null hypothesis. It can be observed from the table that there was no significant difference among the variables except in the profile variable position. This means that the school DRRM coordinators' profile variables, age, position, and highest educational attainment, do not have any difference in their level of preparedness and awareness of climate change except for position. Among the variables, only the teachers' position showed significant results. The one-way ANOVA revealed that there was a statistically significant difference in the level of teachers' preparedness for SDRRM and awareness of climate change considering (f= [6.030], p = 0.016). Considering the descriptive data, the results suggest that teachers have a higher level of preparedness for SDRRM and awareness of climate change in terms of preparedness in response measures. This also implies that teachers' level of preparedness is linked to their position, considering that teachers are also responsible for the learning and involvement of students in activities and programs of the school related to DRRM. Teachers are also responsible for preparing and educating students about disaster preparedness, response and recovery. They are at the forefront of ensuring the safety and well-being of students during emergencies, and they also facilitate drills, training, and awareness campaigns. Teachers also provide emotional support to students affected by disasters and help them cope with the traumatic experiences.

The majority of the findings revealed that there was no statistically significant difference in respondents' level of preparedness for SDRRM and awareness of climate change. This implies that there is no association between the respondents' profile and their level of preparedness for SDRRM and awareness of climate change. This further means that the respondents' level of preparedness and awareness of climate change is not directly affected by age, position, and highest educational attainment.

Similarly, Gabion (2022) aimed to determine teachers' knowledge about SDRRMP implementation. Based on their profile (age, gender, length of service, and distance from school), they were classified as earthquake, typhoon, flood, tsunami, fire, and landslide. The findings revealed that their respondents were generally aware of the implementation of the SDRRM Program. No significant differences existed in their above-stated awareness levels when classified according to their profile and specific natural disasters. This signifies that the academic institution has enough teachers to provide disaster risk reduction education to their students and communities to reduce disaster risk and build a disaster-safe society.

Ronquillo (2020) stated that there was a significant difference in teachers' level of preparedness with respect to capacity building, thus the null hypothesis was rejected. It only showed that most of the respondents were in the range of 21-30 years old. They were new to the institution and had not acquired enough training and workshops regarding disaster management.

Problem 4. Is there a significant relationship between respondents' preparedness and awareness of climate change to SDRRM?

Table 7. Correlation Analysis of Coordinators' Preparedness and Awareness

Variables	Correlation Coefficient	P-Value	Interpretation
Preparedness on Climate Change Awareness on Climate Change	.521**	.000	Significant

*Correlation is significant at the 0.05 level (2 tailed)
** Correlation is significant at the 0.01 level (2 tailed)

Table 7 reveals the relationship between coordinators' preparedness and awareness of climate change, which is statistically significant at **P-Value =.000** less than the **alpha level of 0.05.** Thus, the null hypothesis that there is no significant relationship between respondents' preparedness and awareness of climate change is being rejected. This means that coordinators' preparedness and awareness of climate change to SDRRM are closely linked. This may be because coordinators are more aware because they are tasked to, and they have a better understanding of its potential impacts on their area. They are also the one who make the contingency plans and other emergency plans related to their task. They also advocate for policies and initiatives that involve supporting government actions, engaging in community education programs or participating in climate change mitigation and adaptation projects. Awareness of climate change is closely linked to the understanding of the importance of SDRRM. Coordinators who were prepared and aware of climate change and its potential impacts are more likely to recognize the need for proactive measures to manage and reduce disaster risks. Future extreme weather events are projected to increase the frequency and severity of catastrophes, while at the same time, current approaches and instruments for reducing disaster risk offer strong capacities for climate change adaptation.

Moreover, disaster risk reduction strategies and means to address loss and damage associated with climate change impacts are particularly vulnerable to the adverse effects of climate change. Those who perceive climate-related changes will be taking greater action to prepare for disasters. Those who believe they have been directly impacted by climate-related changes are also more likely to prepare for disasters, take planning actions, and undertake material actions to prepare. Similar result to the study of Seroussi et al. (2019) that there is a significant correlation between knowledge about the consequences of climate change and concern about it and readiness to act.

Table 8. Correlation Analysis of Teachers' Preparedness and Awareness

Variables	Correlation Coefficient	P-Value	Interpretation
Preparedness on Climate Change Awareness on Climate Change	.156	.131	Not Significant

*Correlation is significant at the 0.05 level (2 tailed)
** Correlation is significant at the 0.01 level (2 tailed)

Additionally, Table 8 depicts the association between teachers' preparedness and climate change awareness. It demonstrates that there is no significant association between teachers' climate change preparedness and awareness, with a **P-Value of (.131)** greater than the **alpha-level of 0.05**. As a result, the null hypothesis is accepted: there is no significant association between respondents' preparedness and awareness of climate change. This suggests that teachers' readiness is unrelated to their understanding of climate change. The results showed that teachers were prepared regardless of their age, educational status, or position. When given the opportunity, they were all eager to participate in catastrophe risk reduction and management. They are in support of the Department of Education D.O. No. 33, s. 2021 Measures for School-Based Disaster Preparedness and Response.

The result shows that it may not be significant because teachers may not have received adequate training or education on climate change and its implications for disaster risk reduction management. Without proper knowledge and understanding, their preparedness efforts may not align with climate change-related risks and challenges. There are other factors, such as prioritization of other subjects, limited resources, time constraints within the educational system that may hinder teachers' ability to prioritize climate change awareness and preparedness.

The study of Bolletino et al (2020) expands education and disaster preparedness because they found no significant association between level of education and material activities to prepare for disaster in their findings. The limited effect of academic courses on teachers' participation in the battle against climate change can be explained by looking at knowledge about the effects of climate change as a mediating element between instruction received on climate change and preparedness to act.

Findings

Based on the analysis and interpretation of data gathered, the following are the salient findings of the study.

1. Coordinators and Teachers are 26-30 years old with a position of Teacher I-III and whose highest educational attainment is a Master's Degree holder.
2. The coordinators and teachers' level of preparedness and awareness based on preparedness of SDRRM in terms of normal time, preparedness for response measure and response measure and awareness on climate change revealed as at all times and interpreted as Very High.
3. There is no significant difference between coordinators and teachers' age, position, highest educational attainment except in teachers' position which revealed significant.
4. There is a significant relationship between coordinators' preparedness and awareness of climate change to SDRRM, while the teachers' result shows as not significant.

Conclusions

In the light of the above-cited findings, the following conclusions were made:

The coordinators and teachers were prepared on school disaster risk reduction and management in terms of normal time, preparedness in response measure and response measure. In terms of climate change,

respondents were also aware that climate change is happening.

The individuals working on the DRRM program are completely ready for the ongoing improvement of the school facilities' readiness and disaster preparedness initiatives. Additionally, the DRRM program and activities are known and understood by school staff. Coordinators and teachers are also well-prepared and knowledgeable of the DRRM program's criteria. As a result, they are more inclined to follow through.

Recommendations

Climate change should be recognized by all, notably the educational sector, because it is a reality. The climate change issues in the curriculum should be considered at all educational levels, especially in grader. Programs and trainings will also be beneficial both for teachers and students.

1. Keep the community well prepared by disseminating knowledge on how to be prepared when catastrophe happens. Teachers can be equipped by attending seminars and symposiums and incorporate the DRRM in teaching their subjects.
2. Extra training and disaster education must be provided to the school DRRM coordinators as well as to the teachers and students to raise disaster risk awareness and preparedness.
3. Involve barangay officials, parents, social workers, senior - taught citizens, and parents in earthquake drills, training and symposium.
4. Conduct further study which focuses on developing other materials essential to DRRM and standard procedures like Fire Drill, Earthquake drill and evacuation drill.

Acknowledgements

The researcher would like to convey gratitude and admiration to the following persons who have contributed greatly to the success and realization of the study.

First, to the above Almighty for giving the fortitude in the success of this study.

To the Dean of the Graduate School, Dr. Braziel L. Ongcachuy and the members of the Panel Examiners, Dr. Gerlinda Corpuz, Dr. Carmelita O. Elbanbuena, Dr. Estrella S. Ferenal, Dr. Pepa V. Pontillas, and Dr. Wilma R. Taganas for their brilliant ideas, guidance and constructive criticisms which motivated the researcher to complete the study;

A special thanks to Dr. Conniebel C. Nistal, Research Adviser, for her direction, compassion, encouragement, persistence, recommendations, and kind support in conceptualizing the work of this study;

To Mary Ann M. Allera, Schools Division Superintendent of Gingoog City -OIC, Andy Anthony Sotes, DRRM- Division Coordinator, to all District Supervisors, and School Heads for allowing the researcher to conduct the study;

Lastly, To the Coordinators and Teachers of Gingoog City Division for their active cooperation and participation.

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