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Development of Contextualized Safety Training on Disaster Preparedness

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***Abstract*—** The descriptive survey design was employed in the study. This design facilitates the assessment of participants' awareness about disaster preparedness, their associated practices. The study primarily involved teachers, students, parents and significant community members. Survey questionnaires and structured interview were the main instruments utilized in gathering the needed data in the study. The primary data which were obtained via a survey questionnaire, were statistically analyzed using suitable tools and measures. Responses from the structured interview were presented qualitatively. The study arrived with the following conclusions: The awareness of the four groups of respondents ranges from moderate to high levels. The participants were mostly challenged on the planning and preparations of their belongings for evacuation and the inadequate resources in the evacuation centers such as food, bathrooms and water supply. The contextualized safety training was timely conducted as a response to the needs of the individuals in Puting Sapa in responding to the occurrence of disasters. The participants of the contextualized safety training were very satisfied about the drills, simulations and other activities conducted by the trainers. The selected participants rated the content of the training module as excellent.

The recommendations were: The contextualized safety training hereby conducted be one of the sources of information and basis for future researches. The training module be considered as one of the important reading material to gain relevant information, and guide about disaster preparedness. The findings and the evaluation results of the contextualized safety training may be used as references of other researchers in conducting another study relative to the present one.

***Keywords*—** Contextualized Safety Training, disasters, disaster preparedness, awareness, safety practices.

INTRODUCTION

Communities worldwide face persistent and substantial risks arising from various disasters, both natural and human-induced. The growing importance of implementing comprehensive approaches to disaster preparedness and mitigation has garnered considerable attention in recent years. This heightened focus can be attributed to the combined impact of climate change and urbanization, which have increased people's vulnerability to a wide range of catastrophes. This research will contribute significantly to the ongoing global discourse by investigating a specific educational institution located in the high-risk area of Mt. Bulusan, Philippines.

On a global scale, the significance of disaster preparedness and mitigation has gained prominence due to the increasing frequency and severity of disasters. The Sendai Framework for Disaster Risk Reduction 2015-2030, endorsed by the United Nations in 2015, places strong emphasis on the necessity of reducing catastrophe risk and enhancing resilience at both local and national levels. The United Nations (2015) recognizes the importance of integrating catastrophe risk reduction as a fundamental element of sustainable development.

The Philippines, like many countries in Southeast Asia, is vulnerable to a range of natural disasters, including volcanic eruptions, landslides, and typhoons. The susceptibility of Philippine communities to these hazards is exacerbated by various factors, such as rapid urbanization, population growth, and environmental degradation (World Bank, 2020).

Despite the presence of international frameworks providing guidance in this area, the implementation of disaster risk reduction measures and the level of awareness among various stakeholders at the local level exhibit significant variation. Population vulnerability to these risks has led to continuous efforts increasing awareness, preparedness, and resilience at all levels.

Academic researchers who study disaster preparedness emphasize understanding how individuals and communities are aware of and ready for disasters. Natural disasters come in different forms, like volcanic eruptions, fires, landslides, and typhoons - each requiring unique readiness strategies.

Evaluating current preparedness techniques' effectiveness is vital for continuous improvement.

Assessing strategies' awareness and response impacts among stakeholders is critical to determine efforts' success reducing disaster risks. The findings have potential to significantly contribute globally on evidence-based preparedness measures.

The Philippines has significantly improved its disaster risk reduction and management (DRRM) efforts, notably with the enactment of the 2010 Disaster Risk Reduction and Management Act, also known as RA 10121. This legislation established a robust legal framework that emphasizes community involvement, risk assessment, and preparedness. Recognizing the importance of a comprehensive, location-specific approach to DRRM, the National Disaster Risk Reduction and Management Council (NDRRMC) highlighted this need in 2015. The National Disaster Risk Reduction and Management Plan (NDRRMP) for 2011-2028 outlines strategic measures used by the country to mitigate disaster risks, enhance resilience, and strengthen community capabilities in disaster response and recovery.

The effectiveness of current disaster preparedness techniques has been evaluated in the Philippine context, where various initiatives, including community-based disaster risk reduction and management (DRRM) programs and exercises, have been adopted. Assessing efficacy of these approaches at educational institutions is essential to ensure DRR efforts substantially impact awareness and response capabilities of faculty, students, parents, and local officials.

Bulusan municipality in Bicol Region, Philippines is known for its natural beauty and landscape. However, proximity to active Mt. Bulusan volcano significantly increases risks, primarily geological hazards from continuous activity including eruptions, ashfall, landslides, and lahar flow.

Susceptibility to hazards like volcanic eruptions, fires, landslides and typhoons in Puting Sapa Elementary in Mt. Bulusan's 4th kilometer high-risk zone serves as representative of a broader disaster risk scenario that is influenced by proximity to Mt. Bulusan. It's essential to understand current preparedness among faculty, students, parents and local officials, acknowledging differences based on disaster natures in an area of significant risk. This aligns with tailoring reduction measures to specific contexts.

Puting Sapa was among the places that was affected by ashfall during the eruption of Bulusan Volcano due to its closeness to the volcano and directions of the ash plumes. Bulusan Volcano's phreatic eruption occurred on June 5, 2022, produced a gray ash plume that reached over one kilometer high and went to the northwest in coordination with rain. This led to wet ashfall several barangays such as Puting Sapa, Añog, Guruyan and Catanusan in Juban, Sorsogon. The eruption was accompanied by constant degassing from several outlets at the summit, which scattered ash to other areas; thus, the affected communities were evacuated due to the dangerous effects of ash and the rising volcanic activity (DSWD-DROMIC, 2022).

In the GeoRisk Philippines (n.d), the assessment shows that the area near the Puting Sapa Elementary School is at high risk of having seismic and volcanic activities. HazardHunterPH is an application for hazard assessment which is the current app used by the DOST-PHIVOLCS. In terms of seismic activity, the nearest active fault is located 40.7 Km to the east and therefore, is capable of ground shaking. The other seismic hazards including ground rupture, liquefaction and tsunami are considered safe. Geothermal is 5.5 kilometers west of Bulusan, an active volcano with associated hazards being pyroclastic flow (moderate to low), lahar (high), and ashfall. Furthermore, it revealed that the area has a moderate risk of the possibility of rain induced landslides. While the site is not threatened by lava flow and is beyond the permanent threat zone, such assessments suggest the necessity of developing a stringent contingency and risk reduction measures in reference to both volcanic and hydrometeorological hazards

This study recognizes the importance of considering various disaster types when evaluating preparedness. This aligns with principles advocating customized measures. This research, will be conducted at Puting Sapa Elementary, serves as a representative example of global efforts enhancing preparedness and resilience against evolving catastrophe threats. By analyzing awareness, practices, and strategy effectiveness, this study adds to ongoing global dialogue on reducing disaster risks. It underscores the importance of context-specific approaches to mitigate impacts. This study's objective is to evaluate the level of disaster awareness and preparedness strategies at Puting Sapa Elementary School. Through this research, we aim to shed light on the broader global issue of enhancing community resilience to disasters.

Objectives

This study aimed to develop contextualized safety training on disaster preparedness based on awareness and practices at Puting Sapa Elementary School, Juban Sorsogon for SY 2023-2024.

1. Determine the level of awareness of the respondents along: Volcanic eruption, Typhoon, Landslide and Earthquakes.
2. Identify safety practices of the respondents along the identified variables.
3. Design a contextualized safety training based on the results of the study.
4. Determine the effectiveness of the contextualized safety training and the training module.

METHODOLOGY

Research Design

This study aimed to develop contextualized safety training on disaster preparedness based on awareness and practices at Puting Sapa Elementary School, Juban Sorsogon for SY 2023-2024. The descriptive survey design was employed in the study. This design facilitates the assessment of participants' awareness about disaster preparedness, their associated practices. The study primarily involved teachers, students, parents and significant community members.

Survey questionnaires and structured interview were the main instruments utilized in gathering the needed data in the study. The primary data which were obtained via a survey questionnaire, were statistically analyzed using suitable tools and measures. Responses from the structured interview were presented qualitatively.

The Sample

For the purpose of this research, teachers and students were selected as participants. Furthermore, a deliberate selection of parents and local government representatives who have been informed by their Local Government Unit (LGU) about the significance of disaster preparedness. The allocation of participants across various groups is presented in Table 1.

All of the seven (7) teachers in Putting Sapa Elementary School were considered as respondents.

Table 1. *The Respondents*

Respondents	Frequency	Percentage
Teachers	7	9%
Students	30	40%
Barangay Official	8	11%
Community(Parents, etc.)	30	40%
TOTAL	75	100%

On the other hand, only 30 out of the 90 total number of pupils were randomly chosen as respondents which is consists of grade 5 and 6 only. These students were chosen since they can already actively respond, csn give feedbacks, engage and participate in the activity. Total enumeration among the barangay officials were taken as respondents. There were 30 parents of the pupils in the mentioned school were randomly taken as respondents. These respondents were the participants of the safety training and were also the informants of the study.

The Instrument

The researcher prepared a structured survey questionnaire which was used for data collection in this study, which aimed to address the research objectives. The indicators on the awareness, assessment of the safety training and module were taken from the Bureau of Fire Protection Handbooks and Primers which the researcher have consolidated to come up with the three sets of questionnaires. This questionnaire comprises three distinct sections:

Part I seeks to measure participants' awareness regarding preparedness measures for natural disasters along volcanic eruption, typhoon, earthquake and landslide. Part II focused on assessing the safety practices of the respondents which covers planning, preparation and evacuation during natural disasters. Part III is devoted to understanding the regularity of disaster drills and simulations during the safety training with the holistic evaluation from the participants in terms of its effectiveness. Likewise, evaluation of the training modules was also given to the respondents as part of the determining effectiveness of the safety training.

Data Collection Procedures

Adhering to the requisite procedures for the data collection, essential documents such as communication letters and permission applications were submitted to the

Schools Division Superintendent, School Head, and local officials. Acquiring permissions is essential for the execution of the research activities.

For data acquisition of data, the researcher conducted an orientation to provide the participants the research aims and content, ensuring authentic and pertinent feedbacks. The distribution and retrieval process of the questionnaire was conducted from September 2, 2024 to September 15, 2024. The questionnaires were distributed by the researcher herself with the help of some of her office mates. After the retrieval, the team of the researcher conducted the safety training. The team considered all safety measures for the participants not to meet accidents and untoward incidents. The training drills and simulations were properly prepared executed until the end of the activity. It took one (1) whole day to demonstrate and perform all the activities prepared in the training.

Moreover, unstructured interviews were orchestrated for deeper insights on the safety practices of the respondents and effectiveness of the training. Consequently, survey responses were also solicited with regards to the evaluation of the training modules. The data were systematically organized, analyzed and interpreted.

Data Analysis Procedures

The data were analyzed and interpreted utilizing suitable statistical tools and measures. Descriptive statistics such as frequency and weighted means, were employed to elucidate and encapsulate the data regarding the level of awareness of the participants. The researcher modified a 5-point Likert Scale for the purpose.

Scale	Description
4.50 - 5.00	Very High
3.50 - 4.49	High
2.50 - 3.49	Moderately High
1.50 - 2.49	Low
1.00 - 1.49	Very Low

Qualitative analysis was used in presenting the insights and understanding of the participants regarding their safety practices in planning, preparing and evacuation before and during the occurrence of disasters. Practical insights and experiences were also derived from unstructured interviews and were integrated during the data interpretation phase to enhance the research outcomes' relevance and depthless.

The 5-point Likert scale was used to analyze and interpret the assessment of the participants on the effectiveness of the safety training and the relevance of the training module.

Scale	Description
4.50 - 5.00	Excellent
3.50 - 4.49	Very Good
2.50 - 3.49	Good
1.50 - 2.49	Fair
1.00 - 1.49	Poor

RESULTS AND DISCUSSIONS

The presentation and analysis of the data are guided by the following:

1. Level of awareness of the respondents along volcanic eruption, typhoon, landslides and earthquakes 2. Safety practices of the respondents along volcanic eruption, Typhoon, Earthquakes and Landslides. 3. Contextualized safety training based on the results of the study. 4.

Effectiveness of the safety training and relevance of the training module as assessed by the participants.

1. Level of awareness of the respondents along Volcanic eruption, Typhoon, Landslide and Earthquakes

Volcanic Eruption.

The indicators on the level of awareness of the group of respondents is clearly indicated in Table 2A along volcanic eruption. The table also indicates the computed weighted means and descriptions for each of the indicators as stated. Part of the data shows that the teachers have demonstrated high level of awareness regarding volcanic activities increased seismic activity, gas emissions, and ground deformation during volcanic

eruption, another, is the familiarity with designated evacuation routes specific to volcanic hazards and familiarity with key local authorities and emergency services related to volcanic eruptions with the computed weighted mean of 4.14 for the three mentioned indicators.

Table 2A: *Volcanic Eruption*

Indicators	Tchrs.	Desc.	BPLO	Desc.	Stdnts	Desc.	Parents	Desc.
1. Knowledge of Volcanic Activity Signs: Awareness of indicators like increased seismic activity, gas emissions, and ground deformation.	4.14	High	4.62	Very High	3.2	Mod. High	3.17	Mod. High
2. Understanding of Evacuation Routes: Familiarity with designated evacuation routes specific to volcanic hazards.	4.14	High	3.62	High	3.3	Mod. High	3.17	Mod. High
3. Awareness of Volcanic Hazard Maps: Ability to interpret maps showing areas at risk from lava flows and ashfall.	3.57	High	3.37	Mod. High	2.93	Mod. High	3.14	Mod. High
4. Knowledge of Ashfall Precautions: Understanding safety measures to take during ashfall, including respiratory protection.	3.71	High	3.87	High	3.20	Mod. High	3.38	Mod. High
5. Familiarity with Community Warning Systems: Knowledge of alerts and notifications regarding volcanic activity.	3.57	High	4.50	Very High	3.2	Mod. High	3.17	Mod. High
6. Participation in Volcanic Safety Drills: Engagement in community drills focused on volcanic eruption scenarios.	3.71	High	3.62	High	3.0	Mod. High	3.06	Mod. High
7. Understanding of Volcanic Gas Hazards: Awareness of the dangers posed by gases emitted during eruptions.	3.71	High	3.25	Mod. High	3.2	Mod. High	3.23	Mod. High
8. Knowledge of Emergency Contacts: Familiarity with key local authorities and emergency services related to volcanic eruptions.	4.14	High	2.62	Mod. High	2.93	Mod. High	3.33	Mod. High
9. Understanding of Personal Preparedness: Awareness of necessary supplies and plans for family safety during an eruption.	4.00	High	4.00	High	2.93	Mod. High	3.23	Mod. High
10. Knowledge of Post-Eruption Recovery Resources: Understanding of available support services and recovery efforts after a volcanic event.	3.71	High	4.00	High	3.00	Mod. High	3.33	Mod. High
Overall	3.84	High	3.75	High	3.09	Mod. High	3.22	Mod. High

This may indicate that the teachers were properly oriented by the NDRRMC personnel, aside from the local media and other forms of information dissemination. It can also be noted that the overall computed mean for the level of awareness of the teachers is 3.84 which is described as high level. The data implies that with such level of awareness, teachers may contribute and share their knowledge and understanding to others for security and safety of every individual before, during and after volcanic eruption.

On the other hand, the Barangay officials revealed very high level of awareness on seismic activity, gas emissions, and ground deformation and familiarity with Community Warning Systems with the knowledge of alerts and notifications regarding volcanic activity. The computed weighted means for the two indicators are 4.62 and 4.50 respectively and are described as very high level with an overall mean of 3.75 which yielded to an adjectival description of high level. This may mean that the barangay officials were properly oriented and informed regarding these aspects about volcanic activity. This may imply that the officials are very much aware and ready with what will happen once the volcanic activities occur. The amount of risks and danger may be lessened considering that they are very

much aware of what incidence or disaster will happen which will be caused by the volcanic activities.

Consequently, the students and parents exhibited moderate level of awareness regarding volcanic eruption with the computed weighted means of 3.09 and 3.22 respectively. This may show that the respondents are not extensively exposed to important information relative to volcanic eruption. They may have simply relied on announcements from the local media considering that the place is located in a remote area which the NDRRMC authorities cannot easily reach the place to give source of significant information about disasters which may be caused by volcanic activities. One thing more, is the internet connectivity which is not present in the said place. With the very limited knowledge and information regarding volcanic activities, this may put them in high risks and danger during the incidence.

The cited study by Septiana et al. (2020) serves as a foundation for the present study. The previous research aimed to identify the forms and nuances of disaster education, particularly through the lens of local knowledge in the vicinity of the Merapi Volcano. It also delved into understanding how physical environmental conditions shape disaster education. Among the various insights gleaned, the study highlighted several modes of disaster education rooted in local knowledge, including advice, life philosophies, myths, art, and culture. Such education is disseminated through various community activities spanning pre-disaster, during disaster, and post-disaster phases. However, a salient point made in the study is the diminishing role of local knowledge in current disaster education initiatives. A significant correlation was also identified between physical environmental conditions, especially geomorphological conditions, and the nature of disaster education imparted.

Typhoon

Table 2B in the succeeding page divulges information regarding the level of awareness of the four groups of respondents concerning typhoons. The results showed that the teachers assessed themselves that they have a very high level of awareness about familiarity with the classification of typhoons based on intensity and potential impact (e.g., tropical depression, tropical storm, signal no. 1-5), community drills that simulate responses to typhoon threats, awareness of how typhoons can lead to flooding and the specific risks in their area and available resources and support services for recovery after a typhoon with computed weighted mean of 4.28 for all mentioned indicators which is described as very high level with an overall mean of 3.93 with an adjectival description of high.

Table 2B. *Typhoons*

Indicators	Tchrs.	Desc.	BPLO	Desc.	Stdnts	Desc.	Parents	Desc.
1. Knowledge of Typhoon Warning Signs: Awareness of signs indicating an approaching typhoon, such as changes in weather patterns and increased wind.	4.14	High	4.0	High	3.06	Mod. High	3.17	Mod. High
2. Understanding of Typhoon Categories: Familiarity with the classification of typhoons based on intensity and potential impact (e.g., tropical depression, tropical storm, signal no. 1-5).	4.28	Very High	3.62	High	3.40	Mod. High	3.47	High
3. Awareness of Evacuation Procedures: Knowledge of local evacuation plans, routes, and shelters in case of a typhoon.	3.85	High	3.12	Mod. High	3.00	Mod. High	2.97	Mod. High
4. Familiarity with Typhoon Hazard Maps: Ability to interpret maps that indicate areas at risk for flooding, storm surges, and strong winds.	3.71	High	3.87	High	3.20	Mod. High	3.47	High
5. Understanding of Emergency Preparedness Kits: Knowledge of essential items to include in disaster preparedness kits, such as food, water, and medical supplies.	3.57	High	3.62	High	3.23	Mod. High	3.23	Mod. High
6. Knowledge of Communication Plans: Awareness of how to communicate with family and friends before, during, and after a typhoon.	3.00	Mod. High	3.25	Mod. High	3.03	Mod. High	2.97	Mod. High
7. Participation in Typhoon Preparedness Drills: Engagement in community drills that simulate responses to typhoon threats.	4.28	Very High	3.00	Mod. High	3.20	Mod. High	3.13	Mod. High

8. Understanding of Flood Risks: Awareness of how typhoons can lead to flooding and the specific risks in their area.	4.28	Very High	2.87	Mod. High	2.97	Mod. High	3.10	Mod. High
9. Knowledge of Post-Typhoon Recovery Resources: Understanding of available resources and support services for recovery after a typhoon.	4.28	Very High	3.75	High	3.10	Mod. High	3.67	High
10. Trust in Meteorological Services and Local Emergency Responders: Confidence in the accuracy of local weather forecasts and warnings issued by meteorological agency and capabilities of local authorities to manage typhoon responses	3.85	High	4.12	High	3.00	Mod. High	3.20	Mod. High
Overall	3.93	High	3.52	High	3.12	Mod. High	3.20	Mod. High

The data may suggest that the teachers are so much familiar with the intensities of the wind signals, threats that may happen during typhoon and how to mitigate the results after the devastations or effects of the typhoon. This is an implication that the high level of survivals among the respondents may be always ensured and attainable with the knowledge and understandings about the necessary things to be considered about typhoon.

In contrast, the BPLO exhibited moderate awareness along local evacuation plans, routes, and shelters in case of a typhoon, communicating with family and friends before, during, and after a typhoon, engagement in community drills that simulate responses to typhoon threats and awareness of how typhoons can lead to flooding and the specific risks in their area. The computed weighted means for each indicator are 3.12, 3.25, 3.00 and 2.87 respectively, but yielded to an overall mean of 3.52 which is described as high since the computed weighted for the majority of the other indicators are described as high in which the respondents showed high level of awareness. The data showed that the BPLO may have established information regarding typhoon which may indicate that they can respond whatever happens during and after the event of typhoon. An implication may be derived from the data revealed the BPLO may be considered much aware regarding preparedness and mitigation of typhoon.

Further, the data shows that the students demonstrated moderate awareness regarding typhoon with the computed weighted means and the overall mean of 3.12. This may point out that information regarding typhoon was not properly disseminated to them. This may imply that with the very limited information they got about typhoon, they may not have an immediate and reliable response in the event of typhoon.

Finally, the data revealed that the parents are highly familiar with the classification of typhoons based on intensity and potential impact (e.g., tropical depression, tropical storm, signal no. 1-5), the ability to interpret maps that indicate areas at risk for flooding, storm surges, and strong winds and can identify available resources and support services for recovery after a typhoon with the computed weighted means of 3.47, 3.47 and 3.67 respectively with an overall weighted mean of 3.20 described as moderately high. The results may mean that the parents, not only having enough information regarding typhoon, but also through their experiences during and after typhoons which were already manifested in them for several years of having experiencing several kinds of typhoons according to wind intensity signals.

Conversely they exhibited moderate level of awareness in most of the indicators. The results may indicate that the parents were not well given necessary information and facts to have detail knowledge and understanding about other aspects of typhoon. Another reason is that the parents may have not attended or join the programs and projects of the NDRRMC regarding information campaign about typhoon.

Lapada and Lapada (2021) provided additional significant information on the findings of the present study which delves deep into the comprehension of Filipino uncovering their astuteness in identifying community-specific hazards and readiness to act. They found out that their respondents were not only adept at recognizing potential dangers like typhoons and floods but also showcased their prowess in constructing evacuation strategies and assembling emergency kits.

Earthquake

Table 2C presents the level of awareness of the respondents with respect to earthquake. It can be seen

from the table that the teachers assessed their awareness along earthquake as high with an overall mean of 3.63. They regarded their level of awareness in terms of understanding local building codes designed to withstand earthquakes as very high. This means that the teachers demonstrated familiarity and knowledge regarding the vulnerability of the constructed buildings in such a way that they can resist high magnitudes of earthquakes. This may imply that they can easily identify shelters and buildings to be evacuation centers for earthquake victims who may lost their shelters due to the occurrence of earthquakes.

In the contrary, the teachers exhibited moderate awareness regarding precursors like minor tremors or unusual animal behavior and knowledge of how to communicate with family and emergency services during and after an earthquake with the computed weighted means of 3.28 and 3.14 accordingly.

This means that the teachers are not really aware of warning signs that earthquake may happen any time. Likewise, they cannot easily make connections to their relatives and friends during and after the earthquake.

This is an implication that teachers may have to undergo orientation regarding these two indicators for them to be more aware in detecting signs of possible earthquake to happen and can easily make communications to their families while there is an earthquake.

Table 2C. *Earthquake*

Indicators	Tchrs.	Desc.	BPLO	Desc.	Stdnts	Desc.	Parents	Desc.
1. Knowledge of Earthquake Warning Signs: Awareness of precursors like minor tremors or unusual animal behavior.	3.28	Mod. High	3.86	High	3.10	Mod. High	2.97	Mod. High
2. Understanding of Drop, Cover, and Hold: Familiarity with recommended actions to take during an earthquake.	3.86	High	3.25	Mod. High	3.10	Mod. High	3.03	Mod. High
3. Awareness of Earthquake Hazard Maps: Ability to interpret maps showing earthquake risk zones and fault lines.	3.43	High	3.00	Mod. High	2.80	Mod. High	2.89	Mod. High
4. Knowledge of Building Safety Standards: Understanding local building codes designed to withstand earthquakes.	4.28	Very High	3.38	Mod. High	3.10	Mod. High	3.28	Mod. High
5. Participation in Earthquake Preparedness Training: Engagement in training sessions or drills specific to earthquake response.	3.71	High	3.50	High	3.07	Mod. High	3.10	Mod. High
6. Understanding of Emergency Communication Plans: Knowledge of how to communicate with family and emergency services during and after an earthquake.	3.14	Mod. High	3.50	High	2.87	Mod. High	2.97	Mod. High
7. Knowledge of First Aid for Earthquake-Related Injuries: Awareness of basic first aid skills relevant to injuries sustained during earthquakes.	3.43	High	3.25	Mod. High	3.07	Mod. High	3.20	Mod. High
8. Familiarity with Aftershock Protocols: Understanding what to do during aftershocks following the main quake.	3.57	High	2.75	Mod. High	2.90	Mod. High	2.83	Mod. High
9. Knowledge of Personal and Community Preparedness: Awareness of individual and community plans for earthquake preparedness and response.	3.57	High	3.75	High	2.70	Mod. High	3.03	Mod. High
10. Trust in Local Emergency Services: Confidence in the capabilities of local authorities to manage earthquake responses.	4.00	High	3.88	High	2.90	Mod. High	3.23	Mod. High

Overall	3.63	High	3.41	High	2.96	Mod. High	3.05	Mod. High

Moreover, in case of the BPLO, they revealed high level of awareness along Knowledge of Earthquake Warning Signs, Participation in Earthquake Preparedness Training, Understanding of Emergency Communication Plans, Knowledge of Personal and Community Preparedness, and Trust in Local Emergency Services. Thus, the barangay officials may have undergone seminars and trainings regarding the mentioned activities.

They may have prior knowledge during their term as barangay officials about earthquakes. This may imply that the officials may contribute knowledge to the community along preparedness and other emergency undertakings during and after the earthquake. It can be noted that the computed overall mean is 3.41.

On the other hand, the barangay officials considered themselves with only moderate level of awareness regarding Understanding of Drop, Cover, and Hold; Awareness of Earthquake Hazard Maps; Knowledge of Building Safety Standards; Knowledge of First Aid for Earthquake-Related Injuries and Familiarity with Aftershock Protocols.

This means that the respondents need to be properly oriented and trained with the cited indicators. This may imply that the respondents may not easily take immediate actions to respond during and after earthquakes.

Subsequently, the students and parents have the same level of awareness which is moderate with the overall computed means of 2.96 and 3.05 accordingly. This may indicate that the two groups of respondents don't have enough knowledge and skills with regards to earthquakes.

This may suggest that the respondents may have to undergo proper trainings and orientation to be equipped with the right information about earthquakes.

The results is also emphasized by Onuma et al. (2017)who offers a broader perspective on the relationship between prior disaster encounters and household readiness for future calamities.

Drawing from data of over 20,000 households, the research categorized preparedness into distinct areas, including Basic Preparedness (BP), Energy/Heat Preparedness (EHP), and Evacuation Preparedness (EP). A pivotal revelation was that households with firsthand disaster experiences, especially those impacted by the Great East Japan Earthquake (GEJE) in 2011, exhibited heightened preparedness levels. This finding underscores the powerful influence of direct, major disaster experiences on shaping household readiness.

Landslides

It is presented in Table 2D the level of awareness of the respondents about landslides. The computed weighted means for each of the indicators and the overall means are also presented.

It is reflected in the table that the teachers are have very high level of awareness along Knowledge of Erosion Control Practices which means that they understand measures on how to reduce landslide risk, such as vegetation management and drainage improvements with the computed weighted mean of 4,43. It can also be noted that teachers as they are, are considered knowledgeable about tree planting and drainage system which controls landslides.

This may connote that teachers can be instruments to perform activities related to flood and landslide control. In contrast, the teachers are moderately aware about Landslide Hazard Maps which could mean that they don't have enough abilities to read maps in identifying areas which at risk for landslides.

Another one is Participation in Landslide Awareness Programs which they lack engagement in community programs focused on landslide prevention and safety.

Thirdly, they are not equipped with the Understanding on Personal Safety Measures which can be concluded that they don't have that kind of awareness on safety precautions to take during heavy rains or geological instability.

Lastly, they don't have a full Trust in Local Emergency Services which means that they lack confidence in the capabilities of local authorities to manage landslide. Further, the computed weighted means for the said indicators are 2.86, 3.29, 2.77 and 3.00 respectively.

Table 2D. Landslides

Indicators	Tchrs.	Desc.	BPLO	Desc.	Stdnts	Desc.	Parents	Desc.
1. Knowledge of Landslide Triggers: Awareness of factors that can lead to landslides, such as heavy rainfall or seismic activity.	3.57	High	3.14	Mod. High	2.89	Mod. High	2.73	Mod. High
2. Understanding of Landslide Warning Signs: Familiarity with signs like cracks in the ground, tilted trees, or changes in water flow.	4.00	High	2.62	Mod. High	2.93	Mod. High	2.93	Mod. High
3. Awareness of Landslide Hazard Maps: Ability to read maps identifying areas at risk for landslides.	2.86	Mod. High	3.00	Mod. High	2.76	Mod. High	2.83	Mod. High
4. Knowledge of Erosion Control Practices: Understanding measures to reduce landslide risk, such as vegetation management and drainage improvements.	4.43	Very High	3.38	Mod. High	2.93	Mod. High	3.40	Mod. High
5. Participation in Landslide Awareness Programs: Engagement in community programs focused on landslide prevention and safety.	3.29	Mod. High	2.62	Mod. High	2.73	Mod. High	2.83	Mod. High
6. Knowledge of Emergency Evacuation Routes: Familiarity with safe routes to evacuate during a landslide event.	3.42	High	2.75	Mod. High	2.83	Mod. High	2.90	Mod. High
7. Understanding of Personal Safety Measures: Awareness of safety precautions to take during heavy rains or geological instability.	2.77	Mod. High	2.75	Mod. High	2.83	Mod. High	2.77	Mod. High
8. Knowledge of Local Geology: Understanding how local geology can influence landslide risks in the area.	3.57	High	2.62	Mod. High	2.83	Mod. High	2.77	Mod. High
9. Awareness of Community Resources: Familiarity with local resources for landslide recovery and assistance	4.14	High	3.38	Mod. High	2.70	Mod. High	3.10	Mod. High
10. Trust in Local Emergency Services: Confidence in the capabilities of local authorities to manage landslide.	3.00	Mod. High	3.38	Mod. High	2.63	Mod. High	3.06	Mod. High
Overall	3.50	High	2.95	Mod. High	2.80	Mod. High	2.93	Mod. High

Moreover, the BPLO, students and parents showed the same level of awareness regarding activities and information along landslide with the overall computed means of 2.95, 2.80 and 2.93 respectively which are described as moderate level of awareness. The data may indicate that the three groups of respondents did not received enough knowledge and participation along relevant information regarding landslide. They have just enough amount information which they can be capable in responding during and after the occurrence of landslide. This is an implication that the BPLO, students and parents need to be encouraged to get involved in the activities in disaster preparedness and mitigation about landslides.

The findings were also underscored by Barros et al., (2022). He presented an in-depth analysis of how the middle class in Metro Manila perceives disaster risks. The findings suggest that while this demographic is aware of the risks, their overall perception remains low. The reasons range from complacency, mistrust in government institutions, to a lack of specific knowledge about these threats. Furthermore, the study highlights that these residents view coastal regions and reclaimed lands as particularly high-risk areas, likely due to their vulnerability to flooding and storm surges.

2. Safety Practices of the Respondents Regarding Disaster Preparedness along Volcanic Eruption, Typhoon, Landslide, Earthquakes

This section discusses the common practices of the respondents regarding their preparation before the occurrence of natural disasters. Common responses were categorized as key themes and sub themes were derived from the identified categories.

Category 1. Planning

Common Responses: “We plan to list down all of the things we need to be prepared and bring with us before evacuation”. We identify safe routes and meeting points.”

"Sometimes we plan not to leave our house because we feel that we are still safe to stay but we also consider the members of the family especially the children and old ones."

The responses may suggest that the respondents are very much aware of the predictive impact and effect of an upcoming natural calamity. Planning as they stated before preparing and evacuating for the upcoming disaster, may certainly reduce or minimize the impact of the calamity and may respond more effectively. Moreover, planning before calamities is very essential in order to save lives and minimize damage.

Category 2. Preparation

Common Response: "We prepare especially the food, clothing, water, medicine, emergency light, communication devices and other important things that will be needed during the event of the disaster".

This goes to show that there is really a need to prepare for evacuation during an upcoming disaster. It is a common practice of the individuals and families especially when they are located in an unsafe location where there is always a danger which threatens their lives. That is why this is an indication that to protect their lives, property and safety they preferred to evacuate to a safer place since their locations are prone to disasters.

Moreover, some challenges were encountered by the informants in preparation for the coming of calamities. One of them is the difficulty in the preparation of what to bring when transferring from their dwellings to the safe places or evacuation centers especially when they have big families to transfer, children, elders and with disabilities. In some cases, evacuees may not have the financial means to evacuate or access transportation. This is particularly true in low-income communities, where residents may not have enough money to pay for transportation or temporary lodging and they opted to travel by walking to reach the evacuation centers.

Considering all of these, when people are prepared and resilient, incident of damages and effect of the disaster can be lessened or minimized

Category 3. Evacuation

Common Responses:

"After the preparation we decide to leave our dwelling to transfer to the evacuation center".

We find it very difficult to carry our belongings especially when we have still small children to attend.We don't have enough space to occupy at the evacuation center.

Toilets are not enough for the evacuees. We just find a place to urinate. Potable water is inadequate and other supplies like food and medicines.

We feel so nervous while staying in the camp because it might be destroyed by the typhoon.

This is an indication that when the occurrence of disaster whether it's a natural event like volcanic eruption, typhoon, floods or earthquake or a man-made incident, evacuation helps people saved from immediate dangers, potentially life-threatening situations, fatalities and lessens the risk of injury or even death.

Another challenge they have encountered is the inadequate infrastructure where facilities insufficient for large numbers of evacuees. These issue may cause delay evacuations and make it difficult for responders to reach those in need of assistance.

Another one is the lack of supplies. Those evacuees may not have enough essential supplies such as food, water, and medicines. Evacuation centers may lack enough resources to accommodate evacuees, leading to overcrowding and poor living conditions. Further, other unavoidable situation is that people may panic during the occurrence of the calamity which can hinder their ability to make rational decisions and may disregard safety instructions. If the individuals in the community haven't been properly trained on evacuation procedures, they may not know how to respond quickly and safely. To ensure a successful and timely evacuation process, careful planning, preparation, and coordination among emergency services, local governments, and communities are needed.

Therefore, evacuation during a disaster is essential to saving lives, reducing harm, and facilitating an effective emergency response. By removing people from immediate danger zones, evacuation helps protect individuals, allows for smoother rescue and recovery operations, and helps ensure public health and safety in the aftermath of a disaster. Proper planning and preparation are key to executing successful evacuations and minimizing the impacts of disasters.

The mentioned situations is emphasized by Hoffmann & Muttarak's (2017) study, "Learn from the past, prepare

for the future: Impacts of education and experience on disaster preparedness in the Philippines and Thailand." This conducted study highlights the urgency of disaster preparedness in the face of climate threats and references the Sustainable Development Goals, especially Goal 13. The central theme revolves around the relationship between education and disaster readiness, probing how education can influence preparedness levels and its interplay with personal experience.

3. Safety Training on Disaster Preparedness on Volcanic eruption, Typhoon, Earthquake and Landslide.

Rationale

Disasters such as volcanic eruptions, typhoons, earthquakes, and landslides are of significant risks to life, property, and community particularly in disaster-prone areas. Conducting safety training on disaster preparedness for these hazards is essential for building a resilient and informed population. Understanding the nature of these hazards and learning appropriate response actions can significantly reduce fatalities and injuries.

The training equips the individuals with the knowledge to plan effectively, prepare appropriately and evacuate safely. At the end of this training, the participants are ready contribute to stronger and more resilient communities.

They may become instruments of delivering proactive measures like securing homes, preparing go-bags, and developing evacuation plans which may lessen damage to property and reduce economic disruption caused by disasters.

The participants in the training were grouped accordingly. Each group is composed of teachers, parents, students and the community.

This grouping is done so that each group may have mentors to guide other members who may not actively participate and respond to the evaluation or assessment given by the trainers.

Conducting a safety training program focused on volcanic eruptions, typhoons, earthquakes, and landslides is not just a precaution but an essential measure in saving lives, reducing losses, and safeguarding the long-term sustainability and resilience of communities. In empowering individuals by knowledge and practical skills, there could be a strong foundation for effective disaster preparedness and risk management for community safety.

General objective: This safety training is designed as a response to the need of the individuals in Putting Sapa not only the school but also its whole community along safety disaster preparedness.

Specific Objective: Instill a culture of preparedness, responsibility, and vigilance among the teachers, pupils, school personnel or community members against natural calamities and disasters.

4. Effectiveness of the Safety Training as assessed by the Participants

Table 3 delivers the clear picture of the effectiveness of the safety training conducted to address the needs of the residents and other stakeholders of the locale in the study. The figures present the summary of evaluation by the participants of the training.

Table 3. *Effectiveness of the Intervention*

Indicators	School Head	Desc.	Parents, Teachers, BPLO and Students	Desc.
The training on Disaster Preparedness clearly and effectively explained its objectives.	5	VS	4.81	VS
The essential principles of safety during volcanic eruptions, earthquakes, typhoons, and landslides were thoroughly discussed	4	VS	4.72	VS
Participants actively engaged and shared their own knowledge during the training	5	VS	4.56	VS
Participants showed sufficient readiness in performing the simulation exercises	4	VS	4.53	VS
Coordination and communication were well-executed throughout the simulation.	5	VS	4.46	VS
The participants' actions aligned with the requirements of the simulation.	4	VS	4.56	VS

Participants demonstrated sufficient knowledge of the correct routes to the evacuation area.	4	VS	4.65	VS
Proper steps in providing first aid, such as cleaning and dressing wounds, were demonstrated.	5	VS	4.75	VS
The training was completed within the allotted time.	5	VS	4.43	VS
This program is highly recommended for other groups to help them prepare for potential disasters	5	VS	4.87	VS
Overall	4.60	VS	4.63	VS

The training design is well prepared and suited to the level of the participants which was completed within the allotted time. Expectations from the trainers were met and the topics are just fair for the participants. The objectives are well aligned with the topics and was carried out by the active performance of the participants as well as the trainers. It was recommended by the majority of the participants to have another future training for disaster preparedness in other areas in the locality. Over all, the participants' evaluation for the training is very satisfactory with the computed mean of 4.60 and 4.63 respectively.

4.1 Evaluation of the Training Module as by the participants.

Table 4 presents the evaluation of the training module by the participants. The table shows that Disaster Preparedness Module was evaluated by the different evaluators as excellent with the overall means of 4.85, 4.75, 4.85 and 4.60 respectively based on the criteria. This suggests that the module was exceptionally well designed and delivered. Each of the eight indicators indicated plays a crucial role in detwrmining the participants' overall perception and experience with the training.

Table 4. *The Disaster Preparedness Module*

Indicators	**Teachers**		**Students**		**Parents**		**BO/BHW**	
	WM	Desc.	WM	Desc.	WM	Desc.	WM	Desc.
Clarity of Module Objectives	4.60	E	4.60	E	4.60	E	4.40	VG
Organization and Flow of Topics	4.80	E	4.80	E	4.80	E	4.40	VG
Content (Accuracy and Relevance)	5.00	E	5.00	E	4.60	E	4.20	VG
Clarity and Readability of Instructions	4.80	E	4.60	E	5.00	E	4.80	E
Interactivity and Engagement	4.80	E	4.60	E	5.00	E	4.80	E
Usefulness and Practical Application	5.00	E	4.60	E	4.80	E	4.40	VG
Assessment and Evaluation Methods	5.00	E	4.80	E	5.00	E	4.80	E
Accessibility and Ease of Use	4.80	E	5.00	E	5.00	E	5.00	E
Overall	4.85	E	4.75	E	4.85	E	4.60	E

1. Clarity of Module Objectives

The evaluators especially the teachers and parents considered that the module had clear, well-defined, and achievable learning objectives. They may have found that the objectives helped participants understand exactly what they would learn and accomplish during the training.

This may imply that the objectives are clear and concise which ensure that participants have the right direction on the expected outcomes, which increases focus and participation. The participants also believed that the objectives may successfully met its intended goals.

2. Organization and Flow of Topics

The results may mean that the module was evaluated as well-organized. This means that the topics are presented logically, in a step-by-step manner which may help the participants absorb and retain information more easily.

An implication that it may have followed a clear structure from basic concepts to more complex which may allow participants to build their knowledge progressively, ensuring that they were not overwhelmed. The topics may have presented smoothly which suggests learners to stay engaged and ensures the material is understandable.

3. Content (Accuracy and Relevance)

The evaluators considered the module may have provided accurate, updated, and relevant information on disaster preparedness. This may indicate that the content ensure that the participants can apply the knowledge in real world situations.

This may signify that when the content of the module is both timely and applicable to participants' needs, it may demonstrate the value of the training and encourages participants to rate it high.

4. Clarity and Readability of Instructions

The evaluators considered the module has clear and easily understandable instructions. This means that the instructions module will lead to a successful participation and performance among the participants.

This may infer that if the instructions are simple, direct, and well-explained, participants may be able to follow them smoothly, making the training experience more effective. This may also enhance learning regarding disaster preparedness.

5. Interactivity and Engagement

The evaluation may mean that the module included interactive components, such as quizzes, group discussions, simulations, or hands-on exercises, that allowed participants to actively engage in the activities. Challenging and enjoyable activities may encourage the participants to be more enthusiastic and productive.

The results may imply that interactivity may help the participants maintain their attention, deepen understanding, and provide practical experiences which is essential when dealing with serious topics like disaster preparedness.

6. Usefulness and Practical Application

The group of evaluators reflected on the module which is focused on practical skills and knowledge that participants could immediately apply in their daily life, in the community and other organizations.

It may infer that training that offers significant insights increases its usability. Further, the practical application of the training enables participants to see how the content directly relates to their work, which enhances its usefulness.

7. Assessment and Evaluation Methods

Assessments and evaluation were also considered by the evaluators as excellent. This means that effective assessment methods that align with learning objectives are vital in evaluating participants' understanding of the module.

It can be deduced that if the module incorporated meaningful assessments such as quizzes, reflections, or practical assessments could measure their own progress and gauge how well they had absorbed the content. These assessments also allow trainers to adjust the training based on feedback, improving the overall experience.

8. Accessibility and Ease of Use

The module was evaluated excellent as to its accessibility and was designed as user-friendly. This to ensure participants may easily read the material, regardless of their skills and experience. Similarly, the module possesses clear visuals and language that accommodates different kinds of users. This ease of use contributes to a positive participants' experience.

Ii may conclude that if a training module outshines in these particular points, it does not only promote a positive learning environment but also encourages participants to engage fully, confirming that the content is easily absorbed and understood. As a result, the feedback on the disaster preparedness training module would naturally be excellent, with participants that the training was comprehensive, practical, and highly beneficial.

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