LRA'S (LOCALLY-MADE RISK-REDUCTION AWARENESS) PAMPHLET: INCREASING STUDENTS' RESILIENCE TO DISASTER

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LRA's (Locally-made Risk-Reduction Awareness) Pamphlet: Increasing Students' Resilience to Disaster

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Abstract

With the present geographical situation of Matalang NHS, the researchers were motivated and perceived the need to devise an intervention called "LRA's Pamphlet" (Locally made Risk-Reduction Awareness Pamphlet) for disaster. It aimed to spread and increase disaster awareness among the students. This action research utilized a sequential explanatory mixed-method research design to see if this intervention could impact the students' disaster awareness. Employing the random sampling technique, 100 students were selected to elicit the responses needed since they were susceptible to disasters like floods, earthquakes, and landslides. Utilizing an enhanced Likert questionnaire tool, a survey research methodology was used to quantify the data. A phenomenological study succeeded with a structured interview to elicit the qualitative interpretation of the study. The result revealed the mean value of students' disaster awareness level before implementing the intervention significantly differ from the mean value after employing the said intervention. Hence, the intervention effectively increased students' disaster awareness, specifically in the three mentioned disasters. Three themes were identified during the in-depth interviews with the 12 randomly selected participants to support the findings. These themes are: (1) more inputs on disaster, (2) recognition of the community's responsibility in disaster response, and (3) offers resilient solutions. Raising the pupils' knowledge of disasters may be possible using the LRA Pamphlet. The study may be pilot-tested in more schools to determine the efficacy of the suggested intervention.

Keywords: *Disaster Awareness; Disaster Risk Reduction*

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Context and Rationale

With the increased human industrialization that rapidly produced high technology revenues to satisfy society's needs and wants, nature was the direct recipient of the consequences. Apprehension of natural disasters was increasing worldwide. In the past two decades, it testified that the loss of life and property due to disasters has significantly amplified. On a disaster risk report, the Philippines was classified as third on the list of all nations with the highest risk worldwide, with an index value of 25.14%, according to the World Risk Report 2018 (World Economic Forum 2018). The land was naturally prone to disasters, especially earthquakes, typhoons, floods, and landslides, because of its geographical location, human exploitation, and industrial development. In a country report authored by Ocampo (2020), a project officer and representative of the Trade Union Congress of the Philippines, he defined disaster as a sudden, major event that severely impairs a community or society's ability to operate and results in losses to people, property, and the environment that are more than what the community or society might reasonably expect to be able to recover from on its own. It was susceptible to both natural and human-induced hazards. In addition, based on the data publicized by the Philippine Statistics Authority dated October 28, 2020, these disasters and extreme events cost the economy P463 billion and caused as many as 12,097 casualties in 10 years.

Disasters are inevitable in human lives. It has been part of our daily lives, and we must be aware of and prepare for them. Disaster awareness means how one handles oneself in an emergency, like a disaster. It is the sum of a person's responses, interactions, and coping mechanisms in risky situations. Furthermore, to uphold the citizens' constitutional rights to life and property by addressing the fundamental causes of disaster vulnerabilities, enhancing the nation's institutional capacity for disaster risk reduction and management, and enhancing local communities' resilience to disasters, including the effects of climate change, the Republic Act No. 10121 known as "Philippine Disaster Risk Reduction and Management Act of 2010" was legalized and became one of the leading legitimate bases of the conduct of the study.

The Emergency Management theory, which comprises five stages: prevention, readiness, response, recovery, and mitigation (Field et al. 2010, 2004–2010), served as the foundation for this study. Emergency management theory aims to protect against all threats to people and property. It is crucial for preserving public health and is in line with the most recent DepEd Order No. 33, s. A report from 2021 titled "School-Based Disaster Preparedness and Response Measures for Tropical Cyclones, Flooding, and Other Weather-Related Disturbances and Calamities" urged the institution to take precautions to keep its staff, students, and educational investments in the event of emergencies and disasters.

Moreover, this study focused on the three indicators recognized as Disaster Risk-Reduction Education, Disaster Mitigation, and Disaster Preparedness as the totality of being aware of the disaster. The first indicator was the education on disaster risk reduction, which is most frequently used about natural disasters, environmental risks, and health issues. It is how a community's residents perceive natural risks and hazards. It relates to understanding risks, how they affect the community, and the steps required to address them when natural catastrophes or other dangers arise (Paek and Hove 2017). The second indicator, which was mitigation, came next. The community is educated on catastrophe awareness and preparedness through a seminar, a panel discussion, and advertisements, to name a few informed acts (Bastida et al. 2019). Finally, disaster preparedness is characterized as actions performed ahead of a disaster

to ensure that the 5 resources required to execute an efficient response are accessible. It has to do with what to do and how to get ready for an emergency in a particular neighborhood to ensure your safety and the protection of others around you. Effective disaster preparedness is a result of each of these elements, and safety becomes the top priority. On the other side, tragedies and natural disasters have also been plaguing the Zamboanga Peninsula in the southwest of the Philippines, including earthquakes, floods, and landslides.

Moreover, a report from the National Economic and Development Authority dated July 8, 2018, from 1999 to 2015 exhibited that the peninsula encountered 76 natural disasters that caused 23 deaths and an appraised P249.722 million in infrastructure, agriculture, and property losses directly. The most common disasters were hydrological phenomena, specifically flooding, storm surges, and landslides. Also, it covers five provinces, including Zamboanga del Sur, which is geographically located in the eastern part of it. It comprised two congressional districts, one city, and twenty-six municipalities, including Midsalip. The town was a fourth-class municipality composed of thirty-three (33) barangays most vulnerable to rain-induced landslides, particularly those mountainous areas covering the western, southern, and northern portions.

Unfortunately, Barangay Matalang, one of the far-flung barangays of Midsalip where Matalang National High School was situated, has been confronted with problems related to natural disasters. The school was legislated last 2008 upon the community's request to put up a national high school within the barangay to cater to the graduates of the feeder elementary schools. Since then, it has increased enrollment and had 492 student enrollments for 2020 – 2021 as it opened an extension class at Barangay Pisompongan starting in 2019. Further, the school is located in the Pinukis Volcanic environs, and its neighboring barangays have steep slopes that make them naturally landslide prone. Numerous landslides and flooding cases have already been reported to the Disaster Risk Reduction Management (DRRM) of Midsalip.

In addition, the students enrolled there, and their families and stakeholders experienced a high risk of flood and landslide susceptibility. Further, the pathways and roadways going to Matalang National High School were very vulnerable to landslides due to their predominant mountainous terrain. Two significant rivers also surrounded it; Matic and Duelic Rivers. Students from Sigapod will cross the Matic River. The students from Duelic, Pisompongan, Dakayakan, and others will cross the Duelic River to get to school. Hence, if heavy rainfalls, the students were disposed to cross the rivers even if floods came. Besides, the school's geographical location was on top of one of the hills of Matalang, which was very susceptible to fall if a strong earthquake came. Thus, this is a strong indication of the urgency and prioritization needed for this research topic in line with disaster awareness and preparedness.

The proponents, who were also at risk of destructive flooding and multiple landslides, see a need to spread awareness to the students enrolled in the locality and its neighboring barangays. And a researcher-made intervention may be crafted to disseminate information and resilience ideas on what to prepare and what should be done before, during, and after the disaster that might help the locality.

Innovation, Intervention, and Strategy

The area of Matalang National High school was exposed to moderate to high risk of experiencing earthquakes, floods, and landslides as reflected and illustrated on the hazard map of Midsalip, Zamboanga del Sur. With this, the barangay Matalang and its feather barangays' geographical situations were considered naturally disaster-prone

areas. This unalterable fate, the researchers must act to widespread public disaster awareness and education among the said school students to the common disasters faced by the students identified as landslides, floods, and earthquakes.

It was very empirical to craft a helpful, informative, and student-friendly researcher-made intervention identified as LRA's Pamphlet (Locally-made Risk-Reduction Awareness Pamphlet). It is a viable way to increase students' knowledge and stimulate a good attitude regarding disaster occurrences, quickly leading them to cope with the possible and adverse effects. As Kamil et al. (2020) argued, instructional or learning materials that had disaster-related information strengthen disaster knowledge in students. Hence, educators were anticipated to utilize teaching resources and materials based on geographic viewpoint to uphold disaster risk reduction learning. In such a way, students could possess strong catastrophe response abilities and discover a better resolution for natural destruction that led to lessening its negative side effects. Figures 1 and 2 illustrate the front and back images of the LRA's Pamphlet.

Figure 1: The Front Page of the LRA's Pamphlet

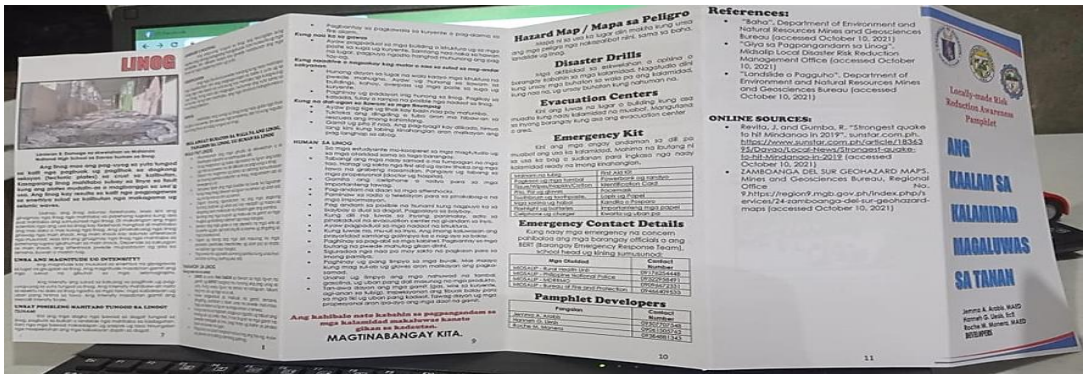
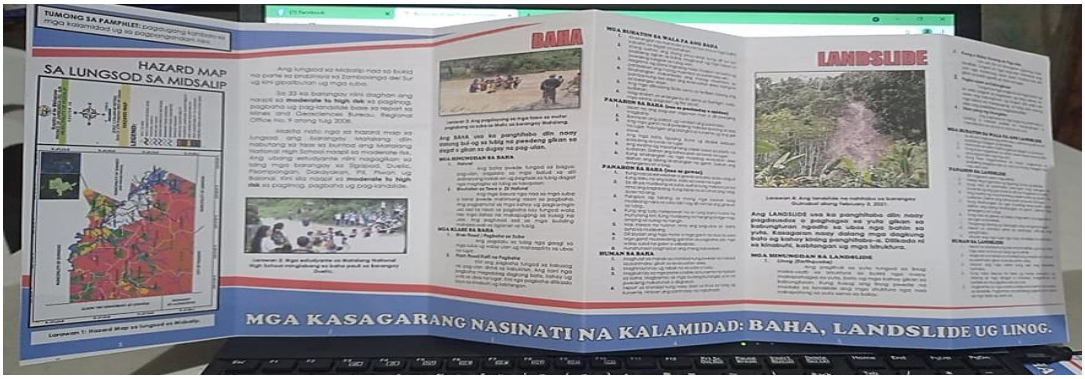


Figure 2: The Back Page of the LRA's Pamphlet



As exemplified in the figures above, LRA's Pamphlet was a six-fold type of pamphlet. It was printed on 8.5" x 22" paper with 12 panels to thoroughly describe and discuss the students' commonly experienced disasters, such as floods, landslides, and earthquakes, using the students' existing language (Sinugbuanong Bisaya). It was known as the Locally-made Risk-Reduction Awareness Pamphlet or LRA which stands for the identities of the three researchers: Llesis, Roche, and Arabis, respectively. Its front page included the Department of Education logo, the municipality's logo, and the

school's logo with a reminder: "Ang Kaalam sa Kalamidad Magaluwas sa Tanan." It also exhibited the hazard map of the municipality of Midsalip that labeled the barangay Matalang, and its neighboring barangays where the students of Matalang National High School came from were exposed to moderate to high risk of experiencing earthquakes, floods, and landslides. Further, the three cited disasters were individually highlighted with photos that captured the actual scenarios of the disasters. Also, the reasons and types of each cited disaster were explained, and resilient ideas before, during, and after each disaster were stressed carefully. The existence of the panel for Emergency Kits, Emergency Contact Details, Pamphlet Developers, and References was given priority for future use. The researchers believed that students' level of awareness of disasters through this intervention would enhance.

After the development of the intervention, it was then preceded through informal checking and validation with some colleagues to add more information and suggestions. Subsequently, the pamphlet underwent a series of validation again to assure its quality before using, by the three mother tongue teachers of sinugbuanong bisaya for the language validity, followed by the school disaster risk-reduction management (DRRM) coordinator to the district DRRM Coordinator and finally to the DRRM officer of the municipality Midsalip. They were the validators of the said intervention. There were a few suggestions and recommendations given to enhance and validate the intervention for its betterment. Afterward, all the comments, advice, and recommendations were accepted for the final revision, so that mass production commenced and was ready to be utilized.

Action Research Questions

This action research attempted to determine the impact of the LRA's "Locally-made Risk-Reduction Awareness" Pamphlet on the selected Matalang National High School students during the School Year 2020-2021.

Specifically, this sought to answer the following queries:

1. What is the level of students' disaster awareness before implementing the intervention?
2. What is the level of students' disaster awareness after implementing the intervention?
3. Is there a significant difference between the level of students' disaster awareness before and after implementing the intervention?
4. What is/are the students' perceptions of the intervention?
5. Based on the study findings, what action plan can be developed?

Action Research Methods

Research Design

This study utilized a sequential explanatory mixed-method research design. It is a sequential approach for it requires follow-up interpretation and analysis from quantitative results with qualitative data. The design was suitable for this action research for required quantitative and qualitative data. The utilization of the mixed method in action research is not novel. According to Klassen et al. (2012, 377-380), even though action research fits more appropriately to qualitative methods, when teacher-researchers must include numerical scale, students' achievement to augment observations and qualitative narratives, study research topics may require action

researchers to use both quantitative and qualitative data sources. Mills et al. (2012, 407-429) also exemplified a parallel between mixed methods and action research since quantitative and qualitative data are collected in one study in both research approaches.

To quantify the data, a Survey Research design was utilized through the use of an adapted Likert questionnaire tool from Bastida et al. (2019) to evaluate students' level of awareness of disaster. And this was succeeded by a phenomenological study by recognizing the participants' perception after having the said intervention through a structured interview to elicit the qualitative interpretation of the study. Thus, the qualitative data was handled to clarify and describe the results from the quantitative data analysis (Mills et al. 2012, 407-429).

Participants and Other Sources of Data Information

The gathered data were from the 100 selected Matalang National High School students. The participants usually experienced disasters like earthquakes, landslides, and floods. These students came from the barangays of Sigapod, Matalang, Duelic, Pili, Balonai, and Pisompongan and were randomly chosen to elicit the responses needed because they had prior experiences facing disaster. They were more susceptible to landslides and flooding, and there was a great necessity in increasing disaster awareness and education.

Moreover, out of 100 participants, 12 of them were randomly selected who had experienced or witnessed the three mentioned disasters and were asked to answer the interview-guide questions to probe the effectiveness of the intervention used.

Research Instrument

The researchers adapted the survey questionnaire from Bastida et al. (2019) to indicate their disaster awareness level. It was also modified based on the needs of the study, and it was translated into the existing language used by the students (Sinugbuanong Bisaya) for a more profound and accessible understanding of each question. The questionnaire was set at a 5-point scale: 1 – Strongly Disagree; 2 – Disagree; 3 – Undecided; 4 – Agree; 5 – Strongly Agree, and the following hypothetical mean range was used to describe students' level of awareness on the disaster, specifically on earthquake, flood, and landslide: 1.00 – 1.80 = Very Low Level of Awareness; 1.81 – 2.60 = Low Level of Awareness; 2.61 – 3.40 = Moderate Level of Awareness; 3.41 – 4.20 = High Level of Awareness; 4.21 – 5.00 = Very High Level of Awareness.

After such, interview-guide questions were expanded in the qualitative phase of this undertaking, and the researchers themselves conducted the in-depth interview following the standard health safety protocol since this was in times of the COVID-19 pandemic.

Data Gathering Procedure

The researchers first secured a permission letter from the school head of Matalang National High School to conduct this action research that aimed to spread and increase the students' disaster awareness, specifically in facing earthquakes, landslides, and floods. Upon approval, the research participants were fully informed of the relevance and goal of the study, as well as their involvement and commitment to maintaining anonymity. Then, they were subjected to answer the adapted survey questionnaire to measure their level of disaster awareness.

Later, the researcher-made intervention, the LRA's "Locally-made Risk-Reduction Awareness" Pamphlet, was given to the participants and re-evaluated through the same but jumbled and paraphrased questionnaire tool.

After gathering the quantitative data needed using the adapted 5-scale Likert questionnaire tool, the researchers then sequel conducted an in-depth interview with the 12 students (two students from each barangay) to determine their perceptions about the researcher-made intervention identified as the LRA's "Locally-made Risk-Reduction Awareness" Pamphlet. Lastly, the gathered quantitative data was then supported by the interpretation of the qualitative data. Hence, both findings were presented and accounted for whether this intervention effectively increased the students' disaster awareness.

Data Analysis

The gathered data during the two surveys conducted were analyzed using weighted means and standard deviations. Paired samples z-test was also carried out using Microsoft Excel to test the significant difference in the students' disaster awareness level before and after employing the said intervention to assess its effectiveness. Moreover, responses during the interview were categorized through thematic analysis to generate the research themes from the interview, specifically the Key-words-in-context (KWIC) method. Using this method, researchers choose keywords and then thoroughly scan the text corpus to find every occurrence of the word or phrase. The usual quick and effective way to start exploring for themes is to use word-based techniques. At the beginning of topic identification, they are helpful. These methods are also simple enough for new researchers to use.

Results and Discussion

The important conclusions reached in this research and how the data were analyzed and interpreted to explain the impact of researcher-made intervention identified as the LRA's "Locally-made Risk-Reduction Awareness" Pamphlet are hereby stressed.

Table 1 shows the students' level of disaster awareness before implementing the researcher-made intervention identified as "LRA's Pamphlet." It describes the three indicators with respective mean and standard deviation (SD) values with its descriptive interpretation.

Table 1: Level of Students' Disaster Awareness (Before the Intervention)

Indicators	Mean	SD	Remarks
Disaster Risk-Reduction Education	2.81	0.76	Moderate Level of Awareness
Disaster Mitigation	3.29	0.57	Moderate Level of Awareness
Disaster Preparedness	3.02	0.76	Moderate Level of Awareness
Overall	**3.04**	**0.58**	**Moderate Level of Awareness**

Range: 1.00 – 1.80 = Very Low Level of Awareness; 1.81 – 2.60 = Low Level of Awareness; 2.61 – 3.40 = Moderate Level of Awareness; 3.41 – 4.20 = High Level of Awareness; 4.21 – 5.00 = Very High Level of Awareness

As shown in the table, the disaster mitigation obtained high mean and SD scores than the rest of the indicators with 3.29 and 0.57 respectively and interpreted as a

moderate level of awareness. Disaster preparedness topped as second with the mean and SD scores of 3.02 and 0.76, respectively, with the descriptive interpretation of a moderate level of awareness. Lastly, disaster risk reduction earned mean and SD scores of 2.81 and 0.76, respectively, with the interpretation of a moderate level of awareness. The three indicators came into an overall mean and SD scores of 3.03 and 0.58 and were interpreted as a moderate awareness level. The result would imply that students already know about disasters, specifically floods, earthquakes, and landslides, rather than defending and preparing for them. Yet, all are at a moderate level only.

Some studies established that having an adequate level of awareness and understanding of disaster risks positively affects readiness, hazard response, personal safety precautions, and recuperation (National Academies Press 2011). However, this does not guarantee, especially since the participants were very susceptible to facing disasters for their geographical location. Thus, increasing disaster awareness among students must be emphasized to elevate their awareness level.

Table 2 illustrates the students' disaster awareness level after implementing the LRA's Pamphlet.

Table 2: Level of Students' Disaster Awareness (After the Intervention)

Indicators	Mean	SD	Remarks
Disaster Risk-Reduction Education	3.30	0.60	Moderate Level of Awareness
Disaster Mitigation	3.53	0.49	High Level of Awareness
Disaster Preparedness	3.61	0.47	High Level of Awareness
Overall	**3.48**	**0.43**	**High Level of Awareness**

Range: 1.00 – 1.80 = Very Low Level of Awareness; 1.81 – 2.60 = Low Level of Awareness; 2.61 – 3.40 = Moderate Level of Awareness; 3.41 – 4.20 = High Level of Awareness; 4.21 – 5.00 = Very High Level of Awareness

Table 2 portrays the level of students' disaster awareness after the implementation of the intervention. As presented in the table, disaster preparedness topped among the three indicators having a weighted mean of 3.61 and described as a high level of awareness, followed by the indicator of disaster mitigation with a weighted mean of 3.53 *(SD = 0.49*). Nevertheless, disaster risk-reduction education is still at a moderate level with a weighted mean of 3.30 *(SD = 0.49)*, making this indicator rank last.

Figure 3 compares the overall mean results of the two conducted surveys on the students' level of awareness of disaster through a bar graph representation.

Figure 3. Comparison of the Two-Conducted Surveys on the Students' Level of Awareness on Disaster

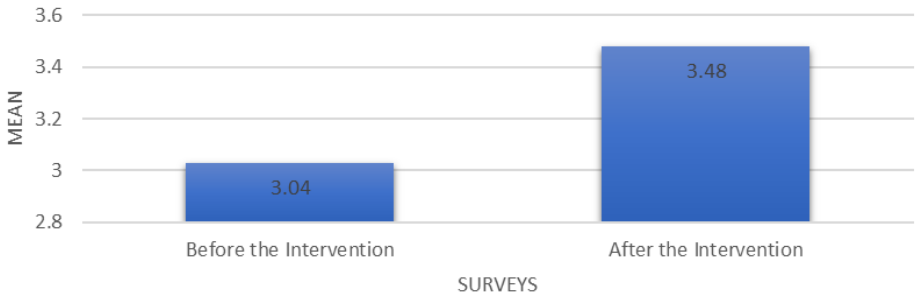


Figure 3 displays the comparison of the learners' level of awareness of disaster before and after the intervention. Before utilizing the LRA's Pamphlet, the weighted overall mean on the students' level of awareness was only 3.03, interpreted as a moderate level of awareness, which had an increase of 0.45 on the weighted overall mean of 3.48 after the application of the intervention interpreted as a high level of awareness. It indicates that the LRA's Pamphlet had a high potential in increasing the students' disaster awareness.

Table 3: Paired Samples Z-test to Test the Significant Difference of Students' Disaster Awareness Level Before and After Implementing LRA's Pamphlet

Before		After		z-score	p-value	Remarks
M	SD	M	SD			
3.04	0.58	3.48	0.43	-6.17	0.00	*With Significant Difference

**Significant at 0.05 level*

As depicted in Table 3, a z-test for means was conducted comparing the mean value of students' disaster awareness level before implementing the intervention *(M = 3.04, SD = 0.58)* to the mean value of students' disaster awareness level after employing the said intervention *(M = 3.48, SD = 0.43).* The result was statistically significant *(z = -6.17 < 0, p = 0.00),* and the mean value before the intervention showed lower levels of student awareness. Thus, there was enough evidence to suggest that there was a significant difference in students' level of awareness before and after implementing the intervention. Hence, the said intervention was effective enough in increasing students' disaster awareness, specifically in the three mentioned disasters. The study findings were proven by the study of Kamil et al. (2020) that the knowledge of students about disasters is strengthened by instructional or learning resources that contain disaster information.

To corroborate the quantitative findings, here are some narrated responses elicited by the participants during the in-depth interview about their perceptions of the LRA's Pamphlet. These themes supported and contributed in one way or another to the positive results in the numerical findings. Three emerging themes were hereby acknowledged: (1) additional inputs on disaster, (2) acknowledge community's role in facing disaster, and (3) provide resilient ideas.

Additional Inputs on Disasters. Knowing more about the disaster you are facing may proceed to an increase in risk perception. The research participants stressed:

> "**Nindot kini nga pamphlet tungod kay naghatag kini og dugang nga impormasyon bahin sa baha, pagdahili sa yuta, ug linog. Kini usa ka maayong giya nga gamiton tungod kay, uban niini, nahibal-an ko na kung unsa ang mga hinungdan ug mga timailhan niining tulo nga mga katalagman ug kung giunsa kini pag-atubang kung kini moabut".** [*This pamphlet is great because it provides more information about floods, landslides, and earthquakes. It is a good reference to use because, with it, I already know what the causes and signs of these three disasters and how to deal with them when it comes.*] – P1
>
> **"Gamit kaayu ni kay naa jud tanang mga impormasyon bahin sa mga kasagaran nga kalamidad".** [It is very useful because it has all the information about common disasters.] – P3

Understanding the causes, consequences, and potential outcomes of a situation you might encounter helps you develop better-prepared ideas on how to cope with it. There is an apparent association between education, elevated risk perception, and students' risk-reduction efforts, claims a study by Faber et al. (2014, 601-609). By instilling in children, the value of readiness and precautions, the gap between knowledge and action can be narrowed.

Acknowledge Community's Role in Facing Disasters. The community has a big role when disaster comes. Recognizing the importance of community in disaster mitigation and preparation is of great help in reducing disaster risks.

> **"Tungod niini nga pamplet, nahibal-an nako kung unsa ka puslanon ug mayo nga mapamilyar ang mga evacuation area ug ang mga tawo nga mahimo nakong tawagan ug mahimo nakung pangayuan ug tabang kung adunay katalagman nga maabot."** [Because of this pamphlet, I know how important it is to be familiar to the designated evacuation areas and the people I may call for help when there is a disaster.] – P5
>
> **"Mahimo diay ko makasumbong sa taga munisipyo kun dunay mga katalagman nga mahitabo".** [I can report to the municipality if there are disasters.] – P8

To lessen the effects of a disaster, community members are essential. For a variety of reasons, those in this level of society are frequently the most vulnerable to tragedy and suffer its effects the most. The resources for the emerging workforce are established on the notion that societies and communities are resourceful and resilient. There is likely to be a sizable local response capability even in disaster-stricken areas that have been severely affected. It is predicated that effective preparedness planning expands upon already-existing community institutions and support networks rather than developing a wholly new disaster management system (Yang and Wu 2020, 386-394).

Provide Resilient Ideas. Resilience has been the constant key to effective disaster management all through the globe. With the equipment of resilience ideas about disaster mitigation and preparedness, both prevent unwanted effects of the disaster.

> **"Akong nahibaw-an nga kinahanglang jud diay ko moapil sa mga disaster drills nga himuon sa baranggay ug sa eskwelahan sama sa earthquake drill kay kini magtudlo kanako sa mga angay nga buhaton sa dili pa, sa panahon, ug human sa kalamidad nga nahisulat usab sa maong pamplet."** [I have found out that I should participate in disaster drills that will be done in the barangay and at the school such as the earthquake drill because it will teach you the right things to do before, during, and after a disaster that is also written in the same pamphlet.] – P11
>
> **"Kini nga pamplet dako kaayog ikatabang kay aduna nay listahan sa mga butang nga andamon sa dili pa moabot ang katalagman. Naglakip usab kini sa mga kontak number nga makontak kung adunay emergency."** [This pamphlet is very helpful because there is already a list of things to be prepared for before the disaster comes. It also includes emergency contact numbers to contact in case of an emergency.] – P4

Various studies supported the above claims. Mitigation also played a crucial part in reducing the adverse effects of disasters through disaster preparedness measures. It also characterizes knowing where to go, identifying evacuation areas, preparing

essential things to be prepared, and applying safety protocols against specific disaster risks can lessen the harm brought on by disasters and enhance recovery accordingly (Torani et al. 2019).

To summarize the findings between the two surveys before and after applying the intervention of the study and the in-depth interview, the quantitative data presentations and the qualitative data analyses are undeniably in accordance with each other. It clearly shows that a pamphlet is a valuable tool in increasing students' awareness of disasters because of its positive benefits that significantly contributed to an increased awareness level after the intervention's implementation. It implied that the increased awareness level proceeds to the resiliency in facing disasters specifically in areas like Matalang NHS that were naturally disaster-prone. Participants also claim its advantageous characteristics in disaster education, mitigation, and preparedness that could be useful for further research.

Conclusion and Recommendations

Due to the present geographical situation of Matalang National High School, which is exposed to moderate to high risk of experiencing floods, earthquakes, and landslides, public awareness must be emphasized to the students, for they have only a moderate level of awareness of disasters. A moderate level was not enough since they were very susceptible to the mentioned disasters. Indeed, awareness must be given more importance and elevated to minimize the severity of the aftermath scenarios. In this way, positive behavior and attitudes to disaster preparation and responses were developed because of deeper awareness. Activities that increase public knowledge encourage behavioural modifications that result in a risk-reduction culture. It merely implies that there ought to be public awareness campaigns like information dissemination, drills, training, and seminars that foster public awareness and disaster risk reduction. In increasing disaster awareness, it was also found that this intervention tool was an optimistic view to enhancing students' resilience to their frequently experienced disasters. That is why LRA's Pamphlet was locally designed and developed for a more profound understanding of the student-users that showcase our context's actual events and happenings. Thus, this pamphlet was considered an innovative approach to disaster risk reduction. Most of the participants have favored this intervention and viewed it as a great instrument in increasing the awareness of disaster risks among students.

Further, the results of the study recommended the following: (a) DRRM Cordinators were highly encouraged to employ LRA's Pamphlet to intensify students' level of awareness on disasters, specifically on landslides, earthquakes, and floods to schools like Matalang NHS, that are naturally belonged to disaster-prone areas; (b) barangay officials of Matalang and its neighboring barangays where the students of Matalang NHS were coming from were suggested to adopt the LRA’s Pamphlet to disseminate public awareness and education about the commonly experienced disasters, specifically on landslides, earthquakes, and floods; (c) modification or unification of LRA’s Pamphlet was sincerely in favor of strengthening and obtaining a better result on the students' disaster awareness.

Action Plan

Information Dissemination about the LRA'S (LOCALLY-MADE RISK-REDUCTION AWARENESS) PAMPHLET

Goals/ Objectives	Activities/ Strategies	Persons Involved	Resources Needed	Time Frame	Success Indicator
(a) To disseminate the result of this study.	Limited Face to Face/ Live Streaming	Midsalip District II Elementary and Secondary Teachers	Laptop, reliable internet connection	2nd Week of November 2021	Number of Participants (Attendance) /Completion report
(b) Craft district policy on the intervention of the study.	Online Meeting	Researchers, PSDS, School Heads	Laptop, Wifi	December 2021	Approved Policy, Minutes of the Meeting
(c) To orient teachers about the researcher-made intervention, which was the LRA's "Locally-made Risk-Reduction Awareness" Pamphlet	Webinar/ Limited Face to Face	All school DRRM coordinators of Midsalip II District	Laptop, reliable internet connection, approval from authorities of conducting such activity	January 2022	Number of Participants (Attendance) /Completion report /Adaptation of LRA's "Locally-made Risk-Reduction Awareness" Pamphlet
(d) Track utilization and progress of the intervention used in this study	Online Kumustahan	Researchers, DRRM Coordinators	Laptop, Wifi	February 2022	Attendance/ Accomplishment Report

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Financial Report

The table below shows the cost estimates expended before, during, and after conducting this action research.

Deliverables	Particulars	Cost Estimate
1. Encoding of Proposal	Encoding Cost	500.00
2. Proposal Reproduction	Printing Cost	500.00
3. Encoding of the Survey Questionnaire	Encoding Cost	500.00
4. Reproduction of the Survey Questionnaire	Photocopy Expenses	500.00
5. Encoding of the Researcher-made Intervention	Encoding Cost	300.00
6. Printing and Reproduction of Researcher-made Intervention for Pilot Testing	Photocopy Expenses	500.00
7. Editing of the Researcher-made Intervention for Final Revision	Encoding Cost	300.00
8. Printing and Reproduction of the Revised Researcher-made Intervention	Photocopy Expenses	500.00
9. Travel Expenses during Collection of Data	Travel Expenses	2000.00
10. Meals and Snacks during Data Collection	Meals and Snacks	1000.00
11. Office Supplies	Ink and bond paper	1000.00
12. Reproduction of Evaluated Output	Printing Cost	500.00
13. Reproduction of Final Output	Printing Cost	500.00
14. Travel Expenses during Submission of output to the DO	Travel Expenses	1000.00
15. Research for Needed Data (Load for Internet Modem)	Load for Internet Modem	1000.00
	Total:	**10,600.00**

Appendix A

Informed Assent

Title of the Study:
LRA'S (LOCALLY-MADE RISK-REDUCTION AWARENESS) PAMPHLET: INCREASING STUDENTS' RESILIENCE TO DISASTER
Principal Investigators:
JEMMA A. ARABIS
ROCHE M. MONERA
HANNEH G. LLESIS

I, _____, have been asked to take part in a research study about assessing students' level of disaster awareness with the use of the researcher-made intervention identified as LRA's (Locally-made Risk-Reduction Awareness) Pamphlet that aims to increase students' level of disaster awareness. The study was explained to me by the above-mentioned principal investigators who were teachers of Matalang National High School, Matalang, Midsalip Zamboanga del Sur.

I understand that I will complete a survey before and after implementing the said intervention. I will face minimal risks by taking part in the study. My participation is voluntary, and I can change my mind at any time without any penalty like financial, and/or affecting my grades and disturbing my ability to participate in an activity.

The persons conducting the study will not reveal my name to anyone, and my name will not appear in any reports on the study. I was informed that if I have questions about the study and my rights, I can call **Jemma A. Arabis** at **09510281114**. Moreover, I have been informed that my parent(s) have permitted me to participate.

I certify that I have read all the above and received satisfactory answers to any questions that I may have had. I therefore willingly file my assent to participate in the study. (I will be provided with a copy of this signed informed consent).

_____ _____
Student's Signature Date

Appendix B

Survey Questionnaire Tool
(Adapted from Bastida et al, 2019)

Name (*Pangalan*): _____

Address (*Lugar Pinuy-anan*): _____

Directions: Read the statements carefully concerning your behavior on disaster awareness specifically on landslides, earthquakes, and floods and honestly answer the question below. Rate the following by checking the box that best describes your response.

1 – STRONGLY DISAGREE *(Kusganong Wala Ka Uyon)*
2 – DISAGREE *(Wala Ka-Uyon)*
3 – UNDECIDED *(Dili Ka-Desisyon)*
4 – AVERAGE *(Sakto lang o Average)*
5 – STRONGLY AGREE *(Kusganong Uyon)*

STATEMENTS (Mga Pahayag)	**5** (Strongly Agree)	**4** (Agree)	**3** (Undecided)	**2** (Disagree)	**1** (Strongly Disagree)
1. I am ready all the time for earthquake, landslide, and flood. *(Andam ako kanunay sa linog, pagdahili sa yuta, ug pagbaha)*					
2. I already have a background knowledge about earthquake, landslide and flood safety measures. *(Duna na koy nahibal-an nga kasayuran bahin sa mga pangluwas nga lakang sa linog, pagdahili sa yuta ug pagluwas sa baha)*					
3. I have already mastered the safety routes of our house and school building during earthquake, landslide and flood. *(Nasayod na ako sa mga ruta sa kahilwasan sa among balay ug bilding sa skwelahan sa panahon sa linog, pagdahili sa yuta ug pagbaha)*					

4. I participated some earthquake drills and safety measures and protocols for landslide and flood. *(Miapil ako sa pipila ka mga drill sa linog ug mga lakang sa kahilwasan ug mga protokol sa kahilwasan alang sa pagdahili sa yuta ug pagbaha)*					
5. I will observe and apply the duck, cover and hold method during earthquake. *(Ako nang obserbahan ug e-apply ang duck, cover and hold sa panahon sa linog)*					
6. I follow safety precautions if its flooding. *(Gisunud nako ang paglikay sa kahilwasan kung nagbaha)*					
7. I know what to do as well as the safety measures for a landslide. *(Nahibal-an ko kung unsa ang buhaton ingon man ang mga lakang sa kahilwasan alang sa usa ka pagdahili sa yuta)*					
6. I prioritize awareness in local, regional and national level for earthquake, landslide and flood. *(Giuna nako ang pagkahibalo sa lebel sa lokal, rehiyon ug nasyonal alang sa linog, pagdahili sa yuta ug pagbaha.)*					
7. I have been a participant in a disaster risk education seminar and training. (*Nag-apil ako sa usa ka seminar ug training sa pagbansay sa peligro sa katalagman)*					
8. I recognize the importance of making conversations about earthquake, landslide and flood with family members, neighbors, relatives, and friends. *(Nahibal-an ko ang kahinungdanon sa paghimo og mga panagsulti bahin sa linog, pagdahili sa yuta ug*					

pagbaha sa mga miyembro sa pamilya, silingan, paryente, ug higala)					
9. I am aware of the shelter areas or evacuation centers and open spaces in case earthquake, landslide and flood happen. *(Nahibal-an nako ang mga lugar nga kapasilongan o mga lugar pagbakwitanan ug mga dakong wanang nga mga lugar kung adunay linog, pagdahili sa yuta ug pagbaha nga mahitabo)*					
10. I am fully aware and informed about the evacuation system and plan in my locality. *(Hingpit akong nahibalo ug nakabalo bahin sa sistema sa pagbakwit ug plano sa akong lokalidad)*					
11. I actively participated in disaster-awareness campaigns focusing on earthquakes, landslide and floods. *(Aktibo ako nga miapil sa mga kampanya nga adunay pag-ila sa katalagman nga gapukos sa mga linog, pagdahili sa yuta ug pagbaha)*					
12. I think our house/building is well designed to withstand an earthquake, landslide, and flood. *(Sa akong hunahuna ang among balay / bilding gilaraw pag-ayo aron makasukol sa usa ka linog, pagdahili sa yuta, ug pagbaha)*					
13. I know where to evacuate when an earthquake, flood and landslide happen. *(Nahibal-an ko kung diin mobakwit kung adunay linog, pagbaha ug pagdahili sa yuta)*					
14. I attended first aid training.					

(Mitambong ko sa pagbansay sa first aid)					
15. I gain enough knowledge about earthquake, landslide, and flood from experts who works or conducts activities for disaster-reduction and management. *(Nakakuha ako ug igo nga kahibalo bahin sa linog, pagdahili sa yuta, ug pagbaha gikan sa mga eksperto nga nagtrabaho o naghimo sa mga kalihokan alang sa pagkunhod sa katalagman ug pagdumala)*					
16. I know the significance of sharing knowledge of experiencing the flood, landslide and earthquake. *(Nahibal-an ko ang kahinungdanon sa pagpaambit sa kahibalo sa pagsinati sa pagbaha, pagdahili sa yuta ug linog)*					
17. I am already aware of the necessary precautions as a preparation for earthquake, flood and landslide. *(Nahibal-an ko na ang mga kinahanglan nga pag-amping ingon usa ka pag-andam alang sa linog, pagbaha ug pagdahili sa yuta)*					
18. I am prepared with emergency kits and bags in case flood, landslide and earthquake might come. *(Andam ako sa mga emergency kit ug bag kung adunay baha, pagdahili sa yuta ug linog nga moabut)*					
19. I am aware and familiar to the DRRM personnel and their location as well as their respective contact number whenever I ask for help if earthquake, landslide and flood will occur. *(Nahibal-an ko ug pamilyar ako sa mga kawani sa DRRM nga makatabang naku ilabina ilang lokasyon ug ilang tagsatagsa nga numero sa*					

pagkontak sa pagpangayo ug tabang kung nay muabot nga linog, pagdahili sa yuta ug pagbaha)					
20. I really do understand what is the best way to prepare for earthquake, flood as well as for landslide. *(Nakasabut gyud ko unsa ang labing maayo nga paagi aron makapangandam alang sa linog, pagbaha ingon man alang usab sa pagdahili sa yuta)*					
21. I am aware that 70% of all injuries that occur in earthquakes are caused by people being hit by or stumbling over fallen objects such as furniture, glassware, appliances and pictures on the walls. *(Nahibal-an ko nga 70% sa tanan nga mga kadaot nga nahitabo sa mga linog kay ang hinungdan ay mga tawo nga naigo o napandol sa mga nahulog nga mga butang sama sa muwebles, baso, gamit sa balay ug litrato sa dingding)*					
22. I am aware that if I cross the flooding river, I will be drown or worst be dead and nowhere to be found. (Nasayud ako nga kung motabok ako sa suba nga nagbaha, malumos ako o labihan mamatay ug dili na makit-an)					
23. I am aware that when landslide occur, not just our house and material things will be damaged but also the lives of my beloved family members for we will be hit and buried by the land fall. *(Nahibal-an nako nga kung adunay pagdahili sa yuta, dili lang ang among balay ug materyal nga mga butang ang madaut kundili apil usab ang kinabuhi sa akong hinigugma nga mga miyembro sa*					

pamilya tungod kay maigo ug matabunan kami sa pagkahulog sa yuta)					

_____

Participant's Signature

Thank you for your participation in this research.

Appendix C

Interview Guide Questions

A. Engaging Question

1. What are your experiences with disasters like floods, earthquakes, and landslides?
2. What struggles and challenges have you encountered in the above-mentioned disasters?

B. Exploratory Questions

1. What can you say about the LRA's Pamphlet?
2. Does it address your struggle and challenges in facing disasters? In what way?
3. How would you describe the impact of the LRA's Pamphlet?

C. Exit Question

1. Is there anything else you would like to say or add about the LRA's Pamphlet as disaster awareness material?