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Capacity Audit on Disaster Risk Reduction and Management in Basic Education

Henderson Kiso Balanggoy
College of Nursing, Benguet State University, La Trinidad Benguet, Pilippines

Author Email: balanggoyhenderson@gmail.com

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Abstract. Vulnerability may be associated with a community's capacity to act and counteract the effects of a hazard by enhancing the community's capacity to reduce risk. With this, the study seeks to assess the school's capacity for disaster risk reduction and management in terms of implementation differences and identify the obstacles and training requirements for DRRM in the Secondary Public Schools of the province of Benguet. The questionnaire was self-designed based on the activities of the four thematic areas, with its validity and dependability subject to verification. The result indicates that the resource capacity of public secondary institutions is moderately established. Regarding capability, there is no significant distinction between resources, knowledge, and talents. With the current School DRRM plan, every school has a disaster risk reduction and management plan, and most have evacuation and contingency plans. The Public Service Continuity plan and the local climate change action plan are present in only nine institutions. With this result, there are still many spaces to be filled, and the DRRM capacity of each public school must be improved. It may affect the school's performance in delivering its main objective to provide a safe and hazard-free environment. It is best to be proactive and ready to ensure that learners and teachers are safe. The result also indicates that public institutions must examine their system and enhance its implementation of the different thematic areas of DRRM; it does not require a complicated framework but a functional and understandable guideline. If DRRM is implemented effectively, it will assure the continuity of education and the safety of students and faculty.

Keywords: Capacity audit; Disaster risk reduction and management; Basic education.

1.0 Introduction

The Philippines faces various natural hazards due to its geographical location, within the Pacific Ring of Fire and the typhoon belt. Hence, there is a significant likelihood that the nation may experience cyclones, volcanic eruptions, landslides, flooding, and earthquakes. Additionally, the Philippines faces certain challenges related to human-induced hazards, including potential incidents of terrorism, civil unrest, structural fires, vehicular accidents, and other related occurrences.

Furthermore, as indicated by the Global Climate Risk Index (CRI) 2021, the Philippines stands out as a country that experiences a high frequency of extreme weather events. Based on the statistical data obtained in 2019, it is evident that the Philippines attained a score of 26.67, representing the lowest score within the timeframe spanning from 2015 to 2019. In the preceding year, the country secured the second position in the index, with a score of 11.17 (CPBRD 2021). According to the CPBRD (2020), the Philippines ranked ninth globally regarding the severity of extreme weather events, as indicated by its score of 20.96 on the 2020 World Risk Index (WRI). The statement suggests a need for improvement by reducing disaster risk.

Disasters are unavoidable; they can have a major or minor effect, depending on the person or the community's resiliency. These vary, especially if they need proper training or exposure. Children and youth suffer most from the effects of hazards, which may be physical or psychological. According to Care (2017), Children suffer the most during disasters because of their inherent social, psychological, and physical weaknesses. The physical sensitivity of children, who experience the worst shock from any calamity, continues to have a significant impact.

The United Nations Office for Disaster Risk Reduction (UNODRR) (2010) reiterates that lowering the risk and impact of disasters will most assist people under thirty. Children and youth are disproportionately affected by disasters in food security, which affects their nutritional status, physical capabilities, psychological well-being, admission to school and quality education, financial aspects, and possible abuses. They are frequently the first and hardest hit when disasters strike. With this, it is important to emphasize the children and youth's rights to be involved in the capability building of the community on DRRM to strengthen the capacities needed for them to survive during and after a calamity. Moreover, it will also acknowledge their effort in building risk reduction and resilience in the community.

Moreover, Save the Children Philippines Calls for Stronger Disaster Preparedness for Kids - Philippines (2019) has urged improving community and school disaster preparedness, noting that children are most at risk for emergency-related illness, injury, and death. In this context, the learners will learn from the adult's actions, a good predisposing factor in visual learning. As Rymanowicz (2015) said, children copy what they listen to and observe from the people they are exposed to with what is referred to as "observational learning." These kids imitate the people they watch most, especially if they admire them. It does not matter whether they are in contact with them, as long as it interests them with their character. It occurs in any place or event.

This study assesses the school's ability to effectively mitigate and manage disaster risks. This initiative aims to enhance the implementation of fundamental components of Disaster Risk Reduction and Management (DRRM) within educational institutions and communities. The objective is to familiarize individuals with protocols and skills that can be utilized before, during, and following a calamitous event. This assertion is substantiated by the declaration made by the Emergency and Risk Management for Academics (ERMA, 2018), which affirms that Disaster Risk Reduction (DRR) endeavors to mitigate the susceptibility and consequences of calamities on educational institutions, emphasizing the paramount importance of ensuring school safety. The mitigation of Vulnerability and reduction of the likelihood of disaster occurrence can be achieved through adequate preparedness among teachers and students. These students possess the ability to educate their family members on pre-disaster, during-disaster, and post-disaster protocols. Consequently, the entire community will acquire knowledge and readiness in the face of any occurrence.

2.0 Methodology

2.1 Research Design

The present study employed a descriptive quantitative research design to assess the implementation of Disaster Risk Reduction and Management in Basic Education in the Province of Benguet. Data was gathered through a survey questionnaire.

2.2 Research Participants

The research was carried out in the province of Benguet, specifically in the main and extension secondary public schools. The study's participants were the School Disaster Risk Reduction and Management Coordinators. However, the school response rate could have been higher, with only 18 out of 59 participants providing feedback, representing approximately 30.50% of the total respondents, which is acceptable (Assessment, 2023). In this study, the participating schools were grouped into three clusters, namely Bokod, Buguias, and La Trinidad, based on the Municipality where their respective schools are situated.

2.3 Research Instrument

The researcher developed the questionnaire and subsequently subjected it to a validation process to assess its reliability and validity. The internal consistency of the measure was assessed using Cronbach's Alpha, yielding a coefficient of .926, indicating a high level of internal consistency. The survey comprised 35 items and was

segmented into three sections according to the subject matter. It was then distributed to the participants for completion.

2.4 Data Gathering Procedure

The researcher sought authorization from the superintendent of the Benguet school division to carry out the study and administer the questionnaire to the secondary public schools. Afterward, the researcher sought authorization from the school principal to distribute the survey questionnaires to the school's Disaster Risk Reduction and Management (DRRM) coordinators.

2.5 Ethical Considerations

The study adhered to ethical protocols when administering the questionnaires and followed the specific instructions set by the division office in administering the questionnaire. All materials were disposed of for confidentiality.

3.0 Results and Discussion

3.1 Level of Capacity in Terms of Resources, Knowledge, and Skills

Table 1. Descriptive statistics of the level of capacity the school

Skills	Mean	Interpretation
Level of Capacity in Terms of Resources	2.93	Moderately Established (ME)
Level of Capacity in Terms of Knowledge and Skills	3.00	Moderately Knowledgeable (MK)
Level of Capacity in Terms of Knowledge	3.15	Moderately Knowledgeable (MK)
Level of Capacity in Terms of Skills	2.84	Moderately Knowledgeable (MK)
Level of Capacity of the School	2.96	Moderately Established (ME)

The data on the capacity of schools in terms of resources, knowledge, and skills is presented in Table 1. The average score of 2.96 indicates a moderate level of establishment and knowledge. It implies that there are prospects for additional enhancement and expansion. A low mean score is a matter of apprehension due to its potential impact on executing safety and security protocols within the school premises. A decrease in perceived safety within their environment can influence learners' performance. In a study conducted by Kibriya et al. (2018), the researchers sought to investigate the influence of school safety on academic performance. The results of their study suggest that the absence of a secure educational setting negatively impacts students' academic achievement in mathematics and reading. Applebury (2023) asserts that safety measures within the school setting yield beneficial outcomes for students as they facilitate social and creative learning development. If learners' basic needs are not adequately fulfilled, they may encounter feelings of discomfort, which could ultimately result in their decision to withdraw from the educational institution. Promoting a safe environment is crucial to cultivating an optimal learning environment. According to a study conducted by Solutions (2022), the foremost objective of protective measures in educational settings is to prioritize the safety of learners, teachers, and other school personnel.

The weighted mean of 2.93, representing the capacity in terms of resources, can be interpreted as moderately established. This observation indicates that public schools possess a certain level of resources, albeit limited, which may affect the effective execution of DRRM initiatives. According to Watt et al. (2014), managing resources involves the organization and efficiently deploying an organization's resources as required. Implementing these resources within the school premises will enhance the efficacy of DRRM initiatives.

Knowledge and skills are closely interconnected, yet they possess distinct characteristics. Knowledge encompasses individuals' understanding, perceived information, practical comprehension of concepts or theories, and awareness of environmental occurrences. Furthermore, knowledge is derived from an individual's social and environmental interactions, acquired through personal experiences and exposure to various sources such as social media, printed media, literature, internet browsing, policies, and guidelines. Additionally, knowledge can be obtained through interactions with lecturers and speakers.

Table 1 also displays the mean score of 3.15 for knowledge, indicating a moderate knowledge level. It implies that educational institutions possess a certain level of knowledge, yet there still needs to be a greater understanding of effective strategies for enhancing and developing their overall capabilities. The research conducted by Bhika and

Pretorius (2019) found that the execution of any project necessitates the involvement of human resources in all activities. The allocation and utilization of resources will significantly impact the project's outcome, either leading to its success or failure. Therefore, it is imperative to possess appropriate human resources for the task, as inadequate team proficiency can pose a significant obstacle to successfully executing such endeavors or initiatives.

Skills refer to the aptitude and competence to proficiently utilize one's acquired knowledge. These skills are derived from an established knowledge base. Acquiring knowledge, encompassing ideas, facts, procedures, and information, is the foundation for developing skills. An individual may possess a comprehensive understanding of various concepts and theories; however, the practical application of this knowledge presents a distinct challenge. According to the data presented in Table 1, the mean score for skills is 2.84, indicating a moderate level of knowledge. When compared to the average knowledge score, it exhibits a lower score. It suggests that more theories must be translated into the practical skills required in Disaster Risk Reduction and Management (DRRM). According to the Surge Advisory (2019), it has been noted that individuals can acquire knowledge about a particular task or skill without necessarily engaging in the practical execution of said task or skill. More than merely knowledge of the procedures and concepts is required; their practical application is also imperative. Furthermore, Clarisse (2023) posited that possessing understanding and knowledge does not necessarily guarantee optimal performance.

3.2 Difference in the Level of Capacity in terms of the Variables Resources, Knowledge, and Skills

The capacity of each secondary public school cluster in Buguias Bokod and La Trinidad in terms of available resources is depicted in Table 2. The mean scores of 2.81, 2.73, and 3.12, interpreted as moderately established, reveal no significant differences in capacity. All three clusters from distinct municipalities were enacted identically. Resource capacities are similar between institutions based on location. Additionally, it can be observed from the table that there is no statistically significant difference in terms of knowledge. Buguias and Bokod exhibit mean scores of 3.23 and 2.77, respectively, which can be interpreted as reflecting a moderate level of knowledge.

On the other hand, La Trinidad demonstrates a mean score of 3.28, indicating a high level of implementation. There exists a slight disparity in the average scores of the indicators; however, this does not necessarily indicate a significant divergence in their implementation. Upon examination of the score, La Trinidad lies on the threshold between moderate and high, suggesting a limited number of indicators in which La Trinidad demonstrates a higher rate, such as coordination or monitoring of students during times of disaster.

Table 2. Test of difference in resources, knowledge and skill according to the municipal school location

Knowledge And Skill	Municipality	Mean	De	Kruskal-Wallis Statistic	P-Value	Pairwise
Capacity Level in terms of Resources	Buguias	2.81	ME	2.624ns	0.269	-
	Bokod	2.73	ME			-
	La Trinidad	3.12	ME			-
Capacity in Terms of Knowledge	Buguias	3.23	MK	2.924ns	0.232	-
	Bokod	2.77	MK			-
	La Trinidad	3.28	HK			-
Capacity in Terms of Skills	Buguias	2.97	MK	1.075ns	0.584	-
	Bokod	2.60	MK			-
	La Trinidad	2.88	MK			-

La Trinidad exhibits a more favorable reception of cellular signals than Buguias and Bokod. Consequently, this disparity impacts the monitoring of students and teachers, a matter that lies outside the purview of the school's ability to regulate the implementation of this indicator. Nevertheless, the researcher posits that the Buguias and Bokod clusters diligently endeavor to oversee their students and employees, irrespective of the obstacles they may encounter.

Furthermore, the findings in Table 2 indicate no statistically significant disparity in skill levels among the three clusters, as evidenced by the mean scores of 2.97, 2.60, and 2.88, which can be interpreted as indicating a moderate level of implementation. The researcher posits that the variation in teacher training and skill enhancement may only occur when there is a collaboration between private partnerships or government agencies to develop the teachers' diverse skills suitable for the particular cluster. Furthermore, there is a prevailing belief that the outcome

will transform over time as the government diligently endeavors to disseminate Disaster Risk Reduction and Management (DRRM) practices within the community.

3.3 Assessment of the Existing DRRM Plans

These plans hold significant importance in Disaster Risk Reduction and Management (DRRM) due to their inherent functionality in times of necessity. These plans possess distinct purposes that the relevant governing body has authorized for implementation. The UNODRR (2010) outlines that disaster preparedness aims to assist school personnel and learners in various disasters, including earthquakes, typhoons, human-induced landslides, chemical spills, bombs, and man-made fire incidents. The objective is to ensure the safety of individuals and minimize the risk of injury, loss of life, and property damage. Table 3 presents the extant disaster risk reduction and management (DRRM) plans implemented by the educational institutions. Planning holds significant importance for individuals, professionals, and organizations alike. According to Curiel (2017), this approach facilitates the achievement of goals and objectives by promoting the efficient utilization of resources and time.

The school's Disaster Risk Reduction and Management (DRRM) plan achieved the highest ranking, with all respondents indicating that they possess a corresponding School Disaster Risk Reduction and Management (SDRRM) plan. One primary factor contributing to the top ranking of the SDRRM plan is its mandatory implementation across all public schools in the Philippines. Furthermore, the plan outlines the programs and activities for the annual Disaster Risk Reduction and Management (DRRM) initiatives. It demonstrates the schools' strong dedication to ensuring the safety of both students and employees despite the financial limitations and other challenges they encounter within their respective regions.

Table 3. Descriptive statistics of the assessment of existing local DRRM plans

	Frequency	Percentage	Rank
Evacuation Plan	15	19.23%	2
School DRRM Plan	18	23.08%	1
Public Service Continuity Plan	9	11.54%	5
Contingency Plans for identified hazards in the schools	15	19.23%	2
Local Climate Change Action Plan	9	11.54%	5
Emergency Plan	12	15.38%	4

The Evacuation Plan and Contingency Plan hold the second position in terms of rank. It is imperative to establish and maintain an evacuation plan that remains in effect throughout the year, ensuring that all individuals, including visitors, possess knowledge of its contents. It will accurately indicate the locations individuals should go to in an emergency. Kerema (2023) defines evacuation as the procedural response in a disaster or emergency. This assistance offers a more efficient and improved secure area access method. Understanding the significance of a contingency plan lies in comprehending the prescribed course of action, the requisite resources that must be mobilized, and the optimal timing for activating the said plan. This measure serves as a strategic planning tool in disaster management. Terrae (2016) asserts that implementing a contingency plan proves to be highly advantageous during periods of calamity. The Contingency Plan can identify potential issues that can be proactively addressed before their occurrence. In a similar scenario, it is understood that it must be supported and strengthened to become more effective, according to Bagolong et al. (2013). The Local Government must strengthen people's fresh outlook, rescue teams, rescue facilities, flood warnings, and evacuation centers to ensure the effectiveness of the early warning system and contingency preparations. By implementing this comprehensive plan, all individuals would possess the necessary knowledge and guidance to effectively navigate situations without the designated point person or organization.

4.0 Conclusion

The performance of an institution can be influenced by its capacity. The conclusions have been derived from the empirical observations and analysis conducted in the study. The responses above were derived from the School Disaster Risk Reduction and Management (DRRM). The resource capacity level in Benguet's public secondary schools indicates a moderate establishment level. The knowledge and skills of human resource personnel have a moderate level of knowledge and skill. Their overall capacity is similar when considering the notable disparities in resources, knowledge, and skills. The responsibility of determining the existing School Disaster Risk Reduction and Management (DRRM) plan lies with the school coordinators. Each educational institution possesses a disaster

risk reduction and management plan, with the majority also implementing evacuation and contingency plans. Educational institutions must formulate a Public Service Continuity plan and a local climate change action plan to be implemented.

These recommendations are derived from the identified gaps in the study's findings. It is imperative to conduct a comprehensive evaluation of the internal capacity of the educational institution, encompassing all staff members. This evaluation should identify individuals with the requisite skills and expertise to fulfill specific service roles effectively. Subsequently, a strategic plan should be formulated, including training potential personnel who can assume the responsibility of training others within the school. One should consider seeking potential collaborative partners such as the Municipal Disaster Risk Reduction and Management (DRRM) Office, Provincial DRRM Office, Office of the Civil Defense, Philippine National Police, Bureau of Fire Protection, and especially parents, as crucial partners. In addition, secondary schools can collaborate with state universities and colleges or private institutions to formulate and implement projects under the National Service Training Program, Disaster Nursing, and Community Health Nursing. It is also recommended that an annual review of plans be conducted and refresher training provided to ensure the comprehensive coverage of all necessary knowledge and skills within the educational institution. This approach should extend beyond the skills mentioned in the survey questionnaires. If plans have yet to be devised, the school administration may opt to incorporate them into the In-Service Training program, thereby ensuring the active participation of all staff members in the planning process. The researcher acknowledges the initial challenges associated with initiating this endeavor, but once commenced and completed, the subsequent task involves annual updates to monitor and enhance its progress. Incorporating funding for capability building into the school budget poses significant challenges. To address this issue, the researcher proposes that the top management form a training team comprising department personnel who can assist the school when necessary.

5.0 Contributions of Authors

The study's author is responsible for the entire research process, which includes data collection, analysis, and work development.

6.0 Funding

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7.0 Conflict of Interests

The author declares no conflict of interest in the conduct of this research

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