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DISASTER RISK REDUCTION PREPAREDNESS IN THE ELEMENTARY SCHOOL DURING PANDEMIC

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Abstract: This research assessed the status of the implementation of the DepEd based disaster risk preparedness program. This study utilized the descriptive methods of research, using appropriate statistical tool, the results were treated using mean, percentage, and z-test for significant mean difference on the level of preparedness of the respondent groups. Based on the findings in terms of DRR implementation, majority of the respondent groups were not fully satisfied in terms school facilities and equipment in preparation to disaster, environment as to the likelihood of the place to adopt and easily cope-up with disaster, preparation as to the plan on what to do and avoid during the disaster and lastly implementation of the designed preparation on different types of disaster. the results of the data analysis indicated that all aspects of the implementation do not significantly differ between teachers and parents, hence the hypotheses were not rejected. Overall, the finding shows that there is a need to improve and elevate the disaster preparedness of the schools.

Keywords: Disaster Preparedness, Basic Education Program, Advent of Pandemic

1. Introduction

Public schools are required to take measures to ensure the safety of learners during any school activity (Obiakor & Adeniran, 2020). There is a need to assess whether learners and educators are aware of the safety plans and are well prepared for any outbreak of disasters (Barbour et al., 2020). According to UN ISDR (2006-2007), when a natural hazard strikes, children are among the most vulnerable population group, especially those attending school in times of disaster. Furthermore, during disasters, school buildings are destroyed, taking away the precious lives of children and teachers and stalling access to education in the aftermath of disaster. This is supported by the Pakistan earthquake in 2005, where over 16 000 children died in a school that collapsed and in a mudslide in the Philippines, more than 200 school children were buried alive. Therefore, children need to be protected before disaster strikes. Protecting children during natural hazards requires two distinct yet inseparable priorities for action: disaster risk education and school safety as reported (ISDR ,2006).

Disaster awareness borrows very heavily from educational planning. Educational planning starts with a vision that will bring change or benefit. The educational planner, ipso facto develops a roadmap that will help bring about the desired change (Wanjala, 2018). Similarly, disaster awareness involves identifying activities to be undertaken within the context of disaster risk management (Khan et al., 2018). Schools with proper disaster awareness manage the disaster risks very well. A couple of questions come to mind at this juncture. What exactly is disaster and why is it an issue of concern to educational planners? Further, what is disaster awareness? Disaster has been defined variously as a calamitous event that results in great harm, damage, death or serious difficulty (Wanjala et al., 2018). It is an occurrence that causes great distress or destruction hence, disaster awareness refers to having relevant knowledge and skills on disaster management which can help one identify and mitigate disaster occurrences. According to Grant (2002) disaster awareness in schools can be incorporated in institutions through strategically posting safety rules, installing firefighting equipment, creating evacuation exits and maintaining buildings. It can also be enhanced through the use of songs, electronic and print media, action learning as well as using science education as a means to introduce studies of disaster risk.

Moreover, Disaster Risk Reduction (DRR), referring to the process of understanding, analyzing and managing the causes and origins of disasters and the risks that accumulate and lead to disasters (Wisner et al, 2012). In 1990, only experts and practitioners were involved in the understanding and implementing of Disaster Risk Reduction (DRR) by the United Nations International Decade for Natural Disaster Reduction (IDNDR). At the early phase of Disaster Risk Reduction (DRR), there was difficulties to find any participation of social aspects. There was least government's involvement in the programmed or disaster policy that targeted at reducing the risk and vulnerability to natural hazards in the year of 1999. Following by many tragic disasters in the next 10 years, governments start to rapidly focus to DRR. Until nowadays, almost all governments are officially paying attention and implemented policies in this field, including Malaysia. In 2005, the United Nations International Strategy for Disaster Reduction (UNISDR) created the Hyogo Framework for Action (HFA) 2005–2015: 'Building the Resilience of Nations and Communities', which recommend the execution of DRR must include an organized planning and evaluation for succeeding the DRR activities. Malaysia adopted the HFA (2005-2015) together with another 167 countries in order to enhance the nation's awareness and also build the disaster resilience. After the 10 years of HFA, the Sendai Framework for Disaster Risk Reduction 2015-2030 (SFDRR), was adopted by Malaysia and also 187 countries during the World Conference on Disaster Risk Reduction (DRR) in Sendai, Japan on 18 March 2015.

Moreover, natural and man-made disasters cannot be prevented, but at least communities can plan for them through disaster management involving preparedness and mitigation measures as indicated by UNESCO (2010:30). According to Ozmen (2006:384), to prevent the huge destructions and to become a disaster resistant society, schools can play a pivotal role. According to the United Nations International Strategy for Disaster Reduction, disaster is a serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses, which exceed the ability of the affected community or society to cope, using its own resources (UNISDR, 2009). According to Nia, et.al (2017) a disaster is an unforeseen event, which can overwhelm the capacity of the affected people to manage its impact. Many people are periodically exposed to natural disasters in their life, and most disasters, or more correctly hazards that lead to disasters, cannot

be prevented. However, their effects can be mitigated. Disaster management efforts aim to reduce or avoid the potential losses from hazards, assure prompt and appropriate assistance to the victims of a disaster, and achieve a rapid and effective recovery. Cherian, (2017) defined disaster management as a plan that has been done strategically & the process is administered & employed to protect critical assets from natural or human made calamities & destruction take place. She expressed that disaster management is a necessity in every country, because the world is becoming vulnerable to natural disaster, and the number of casualties has skyrocketed in the past 20 years. Okoroji (2018) noted that disaster risk reduction and management form a major part of policy in all regions of the world. Nations must statutorily set aside a portion of their national income to combat the negative effects of natural and physical disasters. This project seeks to evaluate the role of local coping mechanisms of at-risk communities in the disaster risk reduction process, and the possibility for better aligning state determined, scientific planning for DRR with locally determined, traditional processes.

In the Philippines, natural disasters such as typhoons, earthquakes, floods, volcanic eruptions, landslides, and fires affect the country. Volcanic eruptions and tsunamis are related to the continental plate activity around "the Ring of Fire". Because it is one of the most geologically active areas, it is nicknamed "The Ring of Fire". Republic Act (RA) 10121 otherwise known as the Philippine Disaster Risk Reduction and Management Act of 2010, mandated all government agencies to institutionalize policies, structures, coordination mechanisms and programs with continuing budget appropriation on disaster risk reduction at all levels.

The future of disaster preparedness and response is dependent on the next generation's knowledge and inclusion in the disaster process. According to Lekies and Wells, people are fixed on a particular path toward an outcome, and they will stay on this path unless a turning point occurs that sets them on a different trajectory (Lekies & Wells,2006). Accordingly, youth need to be set on a path that enables them to protect themselves. Based on the Climate Change and Disaster Risk Assessment of the Philippines by Asian Development Bank they emphasized the "need for effective government policies" in the country with regards to vulnerability. Moreover, vulnerability is influenced first by governance aspects such as the quality of infrastructure, the implementation of building codes, and good urban and land use planning. Second, vulnerability is influence by the state of environmental degradation and thirdly by the resilience of rural livelihoods (ADB, 2012). Moreover, the concept of disaster and vulnerability itself are not static, but, rather, is dynamic. School as the heart of any learning institution is a good start in promoting awareness in terms of disasters preparedness. Furthermore, the related studies above suggests that there is a need to monitor and evaluate the disaster preparedness of the change makers, to ensure the welfare of the all the stakeholders.

2. Purpose of the Study

This research assessed the status of the implementation of the DepEd based disaster risk preparedness program. the status of the implementation of the DRR program as to the following preparation: school facilities and equipment, Preparedness for the environment and Preparedness for the guidelines, were considered in the main problem. Issues and Concerns was also included to identify the challenges.

3. Research Methodology

The researcher utilized the descriptive research method on assessing the level of disaster preparedness of the group respondents. Descriptive research method does not

describe what caused a situation. In this study descriptive research was adopted to measure the disaster preparedness of the group respondents. This research starts on the orientation of the respondents on current research study. The research used the INPUT-PROCESS-OUTPUT approach. The respondents of the study were the teachers and the administrators. The instrument of the study was adapted questionnaire from the DRRM questionnaire developed from Colombo Municipal Council (CMC), City Government of Makati. Issues and concerns will be asked from the respondents to address problems relating to DRR.

4. Results and Discussions

Table 1. School Facilities and Equipment

School Facilities and Equipment	Teachers		Parents	
	Mean	VD	Mean	VD
Early warning system	2.98	MS	3	MS
Equipment for emergency response	3.1	MS	3.01	MS
Warning tools and alert signs have been agreed upon and understood by all school elements.	3.1	MS	3	MS
Person in charge to operate the early warning system	2.4	MS	2.38	MS
Duplication and storage important school documents in a safe place.	2.95	MS	2.98	MS
Design and layout of classroom, facility and infrastructure that comply with standard of safety.	3	MS	3.02	MS
Total	2.92	MS	2.89	MS

Table 1 shows the descriptive feedback of the respondent groups in terms of school facilities and equipment in DRR implementation. Data shows that the statement "Equipment for emergency response and Warning tools and alert signs have been agreed upon and understood by all school elements" got the highest weighted mean of 3.1, which verbally described as moderately satisfied, while the statement "Person in charge to operate the early warning system" got the lowest weighted mean of 2.4, which verbally described as unsatisfied. Moreover, it can be seen that teacher group got an overall weighted mean of 2.92 which verbally described as moderately agree. This indicates that teacher's group were not totally satisfied that school facilities and equipment would help in the learners or the teachers in terms of disaster. While parents on the other hand, got an overall weighted mean of 2.89 which verbally described as moderately satisfied. This implied that parents were also not totally satisfied that school facilities and equipment are sufficient in disaster prevention. Based on the reports of Emergency ready (2019) If a catastrophic disaster happens during school hours, students and staff may be stranded at school for days until roads are cleared for safe driving. If the building suffers structural damage, students may be forced to shelter outdoors at mercy to the elements. Electricity may be out for days to weeks leaving everyone in the dark and causing water treatment plants to shut down. There may also be injuries requiring medical attention when no emergency assistance will be available. Not only do you want to keep your students safe, but it is also your responsibility to take measures to protect your school from foreseeable dangers. To aid in search & Rescue efforts, school should have necessary equipment that could use for rescue and search operation. Therefore, it is important that school has the equipment and resources that could use before, during and after disaster.

Table 2. Environment

Indicators	Teachers		Parents	
	Mean	VD	Mean	VD
Hazard, vulnerability and capacity assessment	3.025	MS	3.1	MS
Disaster risk identification	2.82	MS	2.88	MS
School risk reduction planning and risk reduction management	2.75	MS	2.65	MS
Formulating school/community preparedness plan	2.875	MS	2.83	MS
Formulating emergency and disaster response, evacuation and first aid plans	2.78	MS	2.83	MS
Conducting mock drills / emergency drills	2.9	MS	2.83	MS
Total	2.86	MS	2.85	MS

Table 2 shows the descriptive feedback of the respondent groups in terms of environment in DRR implementation. Data shows that the statement "Hazard, vulnerability and capacity assessment" got the highest weighted mean of 3.025, which verbally described as moderately satisfied, while the statement "School risk reduction planning and risk reduction management" got the lowest weighted mean of 2.75, which verbally described as moderately satisfied. Moreover, it can be seen that teacher group got an overall weighted mean of 2.86 which verbally described as moderately agree. This implied that the environment where the teachers and students occupied were not safe during disaster. While parents on the other hand, got an overall weighted mean of 2.85 which verbally described as moderately satisfied. This implied that parents were also not totally satisfied on the prevention plan of the school in terms of disaster prevention. According to Srinivas and Nakagawa (2008) the impact of disasters, whether natural or man-made, not only has human dimensions, but environmental ones as well. Environmental conditions may exacerbate the impact of a disaster, and vice versa, disasters tend to have an impact on the environment. Therefore, a safe environment that have disaster preparedness is necessary to promote safety to the learners and teachers.

Table 3. Preparation

Indicators	Teachers		Parents	
	Mean	VD	Mean	VD
Ensure the establishments of an Early warning system	2.93	MS	2.9	MS
Maintain close coordination with stakeholders relating to DRRM.	2.8	MS	2.75	MS
Maintain close coordination with DRR management.	2.9	MS	2.85	MS
Maintain, disseminate and post relevant and updated emergency hotlines in strategic locations.	2.95	MS	2.92	MS
Ensure the availability of updated baseline education data of the school.	2.95	MS	2.92	MS
Pre-identify possible temporary learning spaces (TLS) and alternative delivery modes in new normal	3.1	MS	2.9	MS
Total	2.93	MS	2.87	MS

Table 3 shows the descriptive feedback of the respondent groups in terms of preparation in disaster preparedness. Data shows that the statement "Pre-identify possible temporary learning spaces (TLS) and alternative delivery modes in new normal" got the highest weighted mean of 3.1, which verbally described as moderately satisfied, while the statement "Maintain close coordination with stakeholders relating to DRRM" got the lowest weighted mean of 2.8, which verbally described as moderately satisfied. Moreover, it can be seen that teacher group got an overall weighted mean of 2.93 which verbally described as moderately satisfied. This implied that the disaster preparation of

the schools was still lack of plan. Parents on the other hand, the statement "Ensure the availability of updated baseline education data of the school and Maintain, disseminate and post relevant and updated emergency hotlines in strategic locations" got the highest weighted mean of 2.92 which verbally described as moderately satisfied, while the statement "Maintain close coordination with stakeholders relating to DRRM" got the lowest weighted mean of 2.75, which verbally described as moderately satisfied. Overall, the parents group got an overall weighted mean 2.87 which verbally described moderately satisfied. Based on the report of AYR (2018) Being prepared can reduce fear, anxiety, and losses that accompany disasters. Communities, families, and individuals should know what to do in the event of a fi re and where to seek shelter during a tornado. They should be ready to evacuate their homes and take refuge in public shelters and know how to care for their basic medical needs. People also can reduce the impact of disasters (flood proofing, elevating a home or moving a home out of harm's way, and securing items that could shake loose in an earthquake) and sometimes avoid the danger completely. Therefore, preparation before disaster is very important to lessen the havoc of the disaster might bring.

Table 4. Test of Significant Difference

DRR Programs	Mean	Std Dev	z stat	p - value	Decision
School Facilities	2.92 2.89	0.6382 0.6497	0.7242	0.4689	Do not Reject Ho
Environment	2.86 2.85	0.6553 0.6530	1.2205	0.2223	Do not Reject Ho
Preparation	2.93 2.87	0.6211 0.6366	0.5772	0.5638	Do not Reject Ho

Table 4 shows the significant difference between teachers and parents' perception on the aspect of DRR programs. Data shows that there is no difference were seen. Considering that the Z statistics is lesser than the limit or critical value at 0.05 level of significance. Thus, thus the data fail to reject the null hypothesis.

Table 5. Issues and Concerns

Issues and Concerns	RANK
Lack of coordination in times of disaster	2
Not enough resources	1
No advance technology	3
Relevant implementation of DepEd Orders, Memoranda and other issuances relating to DRR	4

Table 5 shows the issues and concerns of the teachers and administrators relating to DRR. Data shows that not enough resources were rated as ranked number 1, followed by lack of coordination in times of disaster, no advance technology and Relevant Implementation of DepEd Orders, Memoranda and other issuances relating to DRR.

Conclusion

Based on the data gathered, more than half of respondents were not satisfied with the DRR program's implementation in terms of school facilities and equipment, disaster preparation, the environment's ability to adapt and cope, and the implementation of the designed preparation for different types of disasters.... Since there were no statistically significant differences between teachers and parents in the implementation, the

hypotheses were not rejected. We conclude that schools need to strengthen and raise their disaster readiness.

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