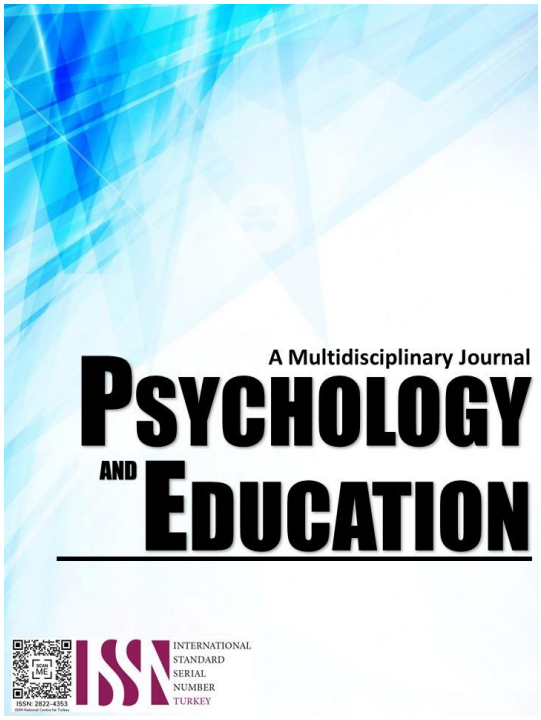
SCHOOL DISASTER RISK REDUCTION MANAGEMENT PROGRAM (SDRRMP) EFFECTIVENESS: INPUT TO STUDENTS AWARENESS AND PARTICIPATION IN NATURAL DISASTER PREVENTION AND MITIGATION



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Research Article

School Disaster Risk Reduction Management Program (SDRRMP) Effectiveness: Input to Students' Awareness and Participation in Natural Disaster Prevention and Mitigation

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Abstract

This study focused the effectiveness of the existing School's Disaster Risk Reduction Management Program (SDRRMP) in increasing students' awareness and participation in natural disaster prevention and mitigation through their perception on natural disasters, awareness and participation on disaster prevention and mitigation. The study was a descriptive correlational design, and a survey questionnaire was the main instrument used in the gathering of data. Mean, Standard Deviation and Pearson Product Moment Correlation Coefficient were used in treating the statistical data. The researcher conducted the study at Hondagua National High School in Lopez, Quezon, with Grade 9 students of academic year 2022-2023 as the respondents.The results reveal that there is a low significant relationship of SDRRMP dimensions with that of students' awareness of SDRRMP objectives, and participation in disaster prevention and mitigation. The results also reveal that students have moderate perception on the types of natural disaster, moderate awareness of the SDRRMP objectives and moderate participation on the SDRRMP activities. In the light of the findings, the following recommendations are given: by involving students in disaster preparedness planning, encouraging community participation, providing accessible information, providing teacher training and collaborating with local emergency management agencies. By doing so, individuals and communities may be better equipped to mitigate the impact of disasters, and disaster management agencies may potentially improve the disaster adaptation skills of individuals, which may help reduce the impact of disasters in communities.

Keywords: *disaster prevention and mitigation, disaster preparedness, SDRRMP*

Introduction

Natural disasters have had major and devastating effects in the Philippines. This is the main reason why the government make disaster risk reduction (DRR) a top priority. DRR as defined by Mamon et.al (2017), is an organized and step by step approach to identify, assess and reduce the risks inflicted by various disasters.Disaster risk reduction (DRR) protects the lives and livelihoods of communities and individuals who are most vulnerable to disasters or emergencies. As a proactive response to disasters, the government ratified Republic Act 10121 or the Philippine Disaster Risk Reduction and Management Act of 2010. Its goal is to strengthen the government's disaster risk mitigation management mechanism by putting in place National Disaster Risk Reduction Policies and Services, such as disaster mitigation preparedness, mitigation, risk reduction, and management, which includes allocation of budget for emergency resources.

It is important to evaluate the ability of students on Disaster risk reduction in order to ensure their performance to ensure that the students under the K-12 Curriculum is substantial on the culture of safety and resilience toward disaster risks. Education, through disaster preparedness learning, is one of the strategic and effective efforts to reduce the risks brought about by disasters. The disaster risk reduction could be integrated into the basic competence content of certain subjects, such as Araling Panlipunan and Science.

With this condition, students should have the attitude, skills and knowledge for disaster preparedness so that the material and immaterial risks that the community bears lower. The development of attitudes, skills, and knowledge can be achieved through proper education. Therefore, there is a need to provide knowledge about the disaster mitigation especially on students, and to grow the "Safety Culture" in schools and to make it more conducive and safer. Furthermore, this study aimed to assess the effectiveness of the existing Disaster risk Reduction Management Program (SDRRMP) provided by the Department of Education mainly on the four dimensions such as the disaster-related knowledge, preparedness and readiness, adaptation, awareness, and risk perception of Grade 9 students in relation to their level of perception towards natural disasters, level of awareness in contingency planning and availability of emergency supplies ad level of participation in natural disaster prevention and mitigation.

Methodology

Research Design

The study is Descriptive in nature. As defined by, Shona McCombes 2019, descriptive research aims to accurately and systematically describe a population, situation or phenomenon. This study adopted the descriptive-survey method in an attempt to determine and analyze the effectiveness of the school's disaster risk reduction management practices.

Sampling and Ethical Considerations

The researcher utilized a simple random sampling in selecting the subjects of the study Simple random sampling is a type of probability sampling in which the researcher randomly selects a subset of participants from a population. The researcher applies the sampling procedure so that each member of the population has an equal chance of being chosen.

Research Instrument

The research instrument consists of 50 survey-questions which were categorized into four parts. These categories include the following: Part I dwells on the types of natural disasters namely climatological, geomorphological and geological types, Part II depicts student's awareness of SDRRMP in terms of contingency planning; Part III depicts student's participation in the prevention and mitigation on natural disasters; Part IV dwells on the effectiveness of the SDRRMP dimensions namely: disaster related knowledge, disaster preparedness and readiness, disaster adaptation and disaster risk perception. The survey questionnaire for this study was a validated data collection tool based from different research studies and literatures in investigating DRR knowledge. The survey questionnaire for this study was a validated data collection tool based from different research studies and literatures in investigating DRR knowledge. A four-point Likert scale (4 = Strongly Agree, 3 = Agree, 2= Disagree, and 1 = Strongly Disagree was used to determine the responses of students on the effectiveness of the SDRRMP dimensions, on the awareness of SDRRMP objectives and on the participation of the students on the program in terms of disaster prevention and mitigation.

Data Analysis

For the meaningful interpretation of data to the indicated research problems, descriptive and inferential statistics were used. First, the researcher analyzed the Mean score on each variable. Since the answers to the items in the survey questionnaire are qualitative, weight points were assigned for the quantitative analysis. In calculating whether there is a significant relationship between the independent and dependent variables, Pearson Product Moment Correlation was used.

Results and Discussion

Summary Table on the Perceived Types of Natural Disasters, Awareness of SDRRMP Objectives and Participation in Natural Disaster Prevention and Mitigation

The research participants' test results were evaluated and measured using the mean and standard deviation.

As shown on table 1, students' perception on the types of natural disasters such as climatological, geomorphological and geological had the highest overall mean of 3.48 and a standard deviation of 0.58. It was followed by the students' awareness on the SDRRMP objectives in terms of contingency planning and availability of emergency supplies with a mean of 3.33 and a standard deviation of 0.43. The lowest overall mean was shown in students' participation on natural disaster prevention and mitigation activities with 3.27 and a standard deviation of 0.52. The results revealed that the Grade 9 students have a moderate perception on the types of natural disaster, moderate awareness on the SDRRMP objectives and moderate participation on the SDRRMP activities such as disaster prevention and mitigation. As proposed by the study of Xu, et al. (2019), individual's knowledge, skills, perception of disaster risk and awareness of disaster prevention and mitigation will change along with their behavioural decisions. Additionally, an individual's level of awareness on disaster risk reduction may increase depending on their willingness to participate and involve themselves in SDRRMP related activities.

Table 1. *Summary Table on the Perceived Types of Natural Disasters, Awareness of SDRRMP Objectives and Participation in Natural Disaster Prevention and Mitigation*

	Indicators	*Mean*	*Std. Deviation*	*Verbal Interpretation*
Types of Natural Disaster	Climatological	3.39	0.38	Moderately Perceived
	Geomorphological and Geological	3.56	0.40	Highly Perceived
	Overall	3.48	0.58	Moderately Perceived
SDRRMP Objectives	Contingency Planning	3.36	0.46	Moderately Aware
	Availability of Emergency Supplies	3.29	0.41	Moderately Aware
	Overall	3.33	0.43	Moderately Aware
SDRRMP Activities	Disaster Prevention	3.41	0.48	Moderately Participated
	Disaster Mitigation	3.13	0.56	Moderately Participated
	Overall	3.27	0.52	Moderately Participated

Summary Table on the Level of Effectiveness of SDRRMP Dimensions

Table 2 shows the summary of the level of effectiveness of the SDRRMP Dimensions such as disaster-related knowledge, disaster preparedness and readiness, disaster adaptation and disaster risk perception.

The data reveals that the overall mean for the dimensions of SDRRMP is 3.46 with a standard deviation of 0.39 which is interpreted as moderately effective. According to the result, the highest mean score of 3.76 with a standard deviation of 0.28 is seen on disaster preparedness and readiness and is interpreted as being highly effective. This means that the students were most likely prepared when disaster comes. Second to the highest mean is shown on disaster-related knowledge as it obtained the mean of 3.48, interpreted as moderately effective, with a standard deviation of 0.39. Next to this is, the mean score of 3.32 on disaster risk perception with a standard deviation of 0.45, and interpreted as moderately effective. Lastly, the lowest mean score of 3.28 is seen on disaster adaptation with a standard deviation of 0.45. Thus, it proves that there is moderate effectiveness of the existing SDRRMP at school level.

Wahlstrom (2015) highlighted the need for cooperation and collaboration at all levels to effectively address the challenges posed by disasters and build resilience. Moreover, it is supported by the DepEd Order no.37 s.2015 which provides a framework to serve as basis in all DRRM effort on basic education towards the attainment of DepEd's outcome such as access, quality and governance.

Table 2. *Summary Table on the Level of Effectiveness of SDRRMP Dimensions*

Indicators	*Mean*	*Std. Deviation*	*Verbal Interpretation*
Disaster-related Knowledge	3.48	0.39	Moderately Effective
Disaster Preparedness and Readiness	3.76	0.28	Highly Effective
Disaster Adaptation	3.28	0.45	Moderately Effective
Disaster Risk Perception	3.32	0.45	Moderately Effective
Overall	3.46	0.39	Moderately Effective

Correlation of SDRRMP Effectiveness Towards Students' Awareness of the Objectives and Participation in the Program Activities

The Pearson Product Moment Correlation of the perceived level of SDRRMP effectiveness towards students' awareness of the program's objectives and their participation in the activities of the program is shown in Table 3.

The analysis reveals that there is a positive significant correlation between disaster-related knowledge and level of perception on geomorphological types of disaster (r=.420, p=0.01). Also, there is a moderate positive relationship between disaster preparedness and readiness the respondents' level of participation on disaster mitigation (r=.376, p=0.01). It is likely to prove that the effort to participate in disaster mitigation activities will improve disaster preparedness and readiness. There is also a moderate positive significant correlation on the result between disaster adaptation and the level of participation on disaster mitigation (r=.487, p=0.01). The findings show that the individuals who are actively involved in disaster mitigation activities tend to have better disaster adaptation skills. By promoting participation in disaster mitigation activities, disaster management agencies such as schools can potentially improve the disaster adaptation skills of individuals, which could help reduce the impact of disasters on communities.

The result on Table 3 was supported by the study of Brouwer, et al. (2018) who proved that putting emphasis in the community participation is essential for effective disaster risk reduction as it allows for local knowledge and perspectives to be integrated into the planning and implementation of disaster risk reduction activities. Disaster risk perception and level of awareness of SDRRMP objectives in terms of contingency planning have substantial correlation (r=.512, p=0.01) which means they are positively correlated with each other. Students with higher level of disaster risk perception tends to have greater awareness on contingency planning.

To sum up the results, disaster risk reduction management program plays a crucial role in promoting

disaster preparedness and awareness by building knowledge, encouraging proactive measures, increasing awareness and fostering community engagement. By doing so, individuals and communities may be better equipped to mitigate the impact of disasters, and disaster management agencies can potentially improve the disaster adaptation skills of individuals, which can help reduce the impact of disasters in communities.

Table 3. *Correlation of SDRRMP Effectiveness Towards Students' Awareness of the Objectives and Participation in the Program Activities*

		Dimensions of Disaster Risk Reduction Program Management			
		Knowledge	*Preparedness and Readiness*	*Adaptation*	*Risk Perception*
Types of Natural Disasters	Climatological	.321**	.225*	0.176	.292**
	Geomorphological	.420**	.353**	0.155	0.179
Level of Awareness	Contingency Planning	.412**	.351**	.331**	.512**
	Availability of Emergency Supplies	.213*	.0.108	0.122	.225*
Level of Participation	Disaster Prevention	.340**	.320**	.262**	.242*
	Disaster Mitigation	.278**	.376**	.487**	.417**

Conclusion

The conclusion drawn from the study's findings that there is low significant relationship between the level of effectiveness SDRRMP dimensions and that of the perception on the types of natural disaster, awareness of SDRRMP objectives, and students' participation in disaster prevention and mitigation. Therefore, the null hypothesis posited in the study is not sustained.

In the light of the findings and conclusion of the study, the following recommendations are offered for the respondent school: first, to involve students in disaster preparedness planning. Students may engage in disaster preparedness planning and decision making in their schools, Second, encourage community participation. Communities may be encouraged to participate in disaster risk education and management. Third, is to provide accessible information. Information may be provided in a variety of formats, such as visual aids, audio, and easy-to-read materials. Next is to provide teacher training. Teachers may be trained in disaster risk education and preparedness, so that they may effectively teach students and lead disaster preparedness efforts in their schools. Lastly, collaborate with local emergency management agencies. School may collaborate with local emergency management agencies to develop effective disaster risk education programs. The recommendations mentioned above may increase the effectiveness of the existin g SDRRMP at school level.

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References

Das, P. et. al. (2014). Role and Capacity Building of School Disaster Management Team: Issues and Insights. International Journal of Education and Management Studies. Vol 4. Issue 2. p. 171- 177

Department Order (DO) no. 50 series of 2011

DepEd Order no. 37 s.2015 The Comprehensive Disaster Risk Reduction and Management in Education Framework

DRRM Primer Act Philippine Disaster Risk Reduction Management Act of 2010 (Republic Act 10121).

Mamon,Mark Anthony C., Suba, Regin Adrian V., Son, Ignacio L. . (2017). Disaster Risk Reduction Knowledge of G11 Students Impact of Senior High School Disaster Education in the Philippines. Int J Health System Disaster Manage, 69-74. Retrieved from Google Scholar: https://www.ijhsdm.org/text.asp?2017/5/3/69/225102

Mahmood, A., Dilshad, M., & Sarwar, M.T. Assessing the Relationship between Disaster Risk Perception and Risk Reduction Behaviors: A study of Coastal Communities in Bangladesh. International Journal of Disaster Risk Reduction,Vol 19.p.1-8.

Hyogo Framework for Action. (2005-2015). International strategy for disaster reduction international strategy for disaster reduction building the resilience of nations and communities to disasters

Jaeger, C.; Shi, P.J. Core Science Initiative on Integrated Risk Governance. IHDP Update 2008, 1, 27–28

Sano, E. A. (2010). Primer on the Disaster RIsk Reduction Management Act of 2010. DRRNetPhilippines.

Xu, L., et al.2019. Factors Influencing Public Perception and

Response to Earthquake Risk: A Multidisciplinary Review. International Journal of Disaster Risk Reduction

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