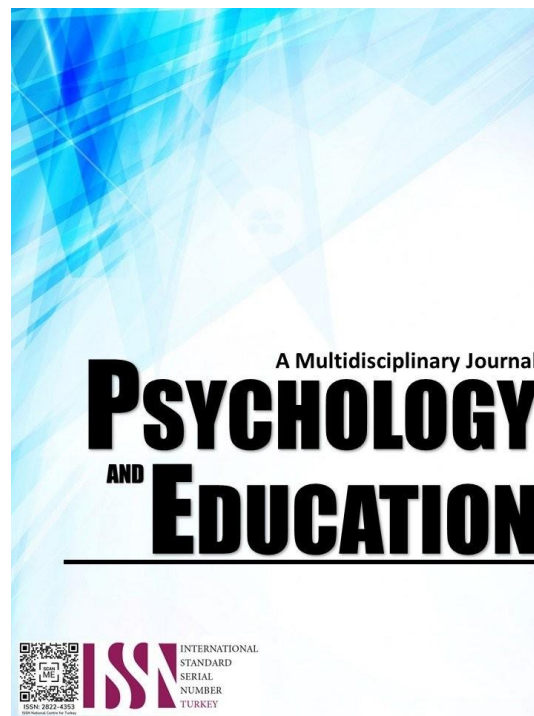


**RISK REDUCTION AND DISASTER PREPAREDNESS  
(RRDP) PROGRAM IMPLEMENTATION OF THE  
PUBLIC ACADEMIC INSTITUTIONS  
IN CARMONA, CAVITE**



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## Risk Reduction and Disaster Preparedness (RRDP) Program Implementation of the Public Academic Institutions in Carmona, Cavite

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### Abstract

Effects of disasters are unavoidable yet can still be minimized if locally-experienced hazards will be completely understood and corresponding preventive measures will be implemented. This research aimed to determine the compliance level in the Risk Reduction and Disaster Preparedness (RRDP) program in terms of safe learning facilities, school disaster management and disaster risk reduction in education; predicaments encountered in the implementation of the RRDP program in terms of financial, technical and human aspects; and the significant differences of these according to academic levels in Carmona, Cavite. Quantitative descriptive-correlational research design was utilized in this study with two hundred forty-one (241) teachers and twelve (12) designated school DRRM officers as participants. Mean and analysis of variance were used to analyze data and interpret results. Results revealed that there is a high compliance level in the RRDP program in elementary, junior and senior high school levels while a moderate compliance in the university level. Meanwhile, financial aspect was observed to be the most encountered problem in the implementation of RRDP program in all academic levels. Moreover, results showed a significantly different result on the compliance level and no significant differences for the problems encountered in the implementation of the program in Carmona, Cavite.

**Keywords:** *risk reduction, disaster preparedness, disaster management, disaster education, public academic institutions*

### Introduction

Currently, the world is experiencing so much exposure to risks and hazards of both climate-related and human-made disasters that pose a threat to the lives of the people and to the sustainable development efforts of the community. These occurrences need serious attention so disaster capacity and mitigation efforts can be formulated to reduce population exposure and vulnerability in international and local settings.

Disasters are unavoidable, and most of the time, its scope, impact and magnitude are often magnified due to unsustainable development that has not taken into account and consideration. The effects of this disasters, whether natural or man-made, can still be minimized if people do have better understanding of locally-experienced hazards and implements corresponding preventive and mitigating measures.

Based on the report of Asian Disaster Reduction Center (2002), Asian continent has been suffering from almost thirty-eight percent (38%) of the natural disasters of the world. It was said that Asian region accounted for fifty-seven percent (57%) of people killed and eighty-eight percent (88%) were affected by natural disasters. Meanwhile, the country Philippines, as part of Southeast Asia, ranked third worldwide in terms of the number of reported natural disaster events and ranked first in the number of disaster-related

mortalities in 2011.

Throughout the recorded history of the Philippines, floods and storms have been the most frequently occurring hazards (NDRRMP, 2011). This confirms the high level of exposure of the country to hazards due to its geography. Its geology explains the prevalence of earthquake, tsunami and landslide. The frequency, intensity and variability of hydrometeorological hazards also have heightened the compelling need for the nation to adopt disaster risk reduction and management (DRRM) and climate change adaptation (CCA). The information shows that there is a need to give some attention and do some actions with the increase on the level of vulnerability especially in areas affected by internal disputes, in order to reduce the percentage of death, loss of properties, natural resources and other assets in all parts of the country.

The island of Luzon, where Metropolitan Manila, Cavite Province and Laguna Province are located, is a mountainous and volcanic region. Laguna de Bay, the largest lake in the Philippines is located at the southeast of Manila Bay. The Pasig River, which is regarded as the most important river in the Philippines since it flows across the central area of Metropolitan Manila, flows from Laguna de Bay into Manila Bay. The Cavite area is affected by flooding of the Imus, San Juan and Canas Rivers. Cavite area also have a risk of storm surges in the low-lying coastal areas (Japan International Cooperation Agency, 2015). In

addition, based on the report of The Manila Times (2015), the Philippine Institute of Volcanology and Seismology recently released the Valley Fault System Atlas, which are large-scale maps showing areas that are near an earthquake fault. It identified the West Valley Fault that could possibly generate a 7.2 magnitude of earthquake, while the East Valley Fault could generate a 6.2 magnitude of earthquake. Unfortunately, the West Valley Fault can directly affect the Carmona; General Mariano Alvarez (GMA) and Silang, Cavite.

These disasters experienced in the Philippines spurred the National Government, through the Department of Education (DepEd) authorities to integrate the Disaster and Risk management in the Curricula. Section 14 of R. A. 10121 (or the Philippine Disaster Risk Reduction Management Act of 2010) requires the DepEd among other agencies to integrate the said curricula. For the elementary and junior high school levels, DRRM (Disaster Risk Reduction and management (DRRM) education has not been made a stand-alone subject but only a component of subjects such as science, technology, and social science. Meanwhile, for the senior high school level, in the K-12 curricula, DepEd already made DRRM education as an independent subject. For the Higher Education Institutions, the Commission on higher Education (CHED) mandated all SUCs to involve DRRM education with the subjects specially with the NSTP and ROTC classes.

Aside from including the DRRM education in the curricula, the National Government, Regional Government, Local Government and other Government Agencies are conducting different activities to inform the people about the importance of having knowledge on reducing risk and disaster. Training, seminars and workshops are being conducted as part of the campaign to have safer, adaptive and disaster resilient Filipino communities towards sustainable development (NDRRM, 2011).

Therefore, this research was conducted to determine the level of compliance and the different predicaments encountered in the implementation of Risk Reduction and Disaster Preparedness (RRDP) program of the public academic institutions in the municipality of Carmona, Cavite. The results of the study could be used as the basis for revisiting the implemented institutional Risk Reduction and Disaster Preparedness Program in the said locale.

## Research Questions

This research generally aimed to know the problems encountered and the level of compliance of the public academic institutions in the municipality of Carmona, Cavite in the Risk Reduction and Disaster Preparedness (RRDP) program. The result of the study could be used in enhancing the implemented RRDP program of the public academic institutions in the said locale. Specifically, the study sought to answer the following questions:

1. What is the level of compliance in the Risk Reduction and Disaster Preparedness program as perceived by the teacher respondents and the level of evidence as perceived by the DRRM Officers according to academic levels in Carmona, Cavite in terms of:
  - 1.1 safe earning facilities;
  - 1.2 school disaster management;
  - 1.3 Disaster risk reduction in education?
2. What are the problems encountered by the public academic institutions in Carmona, Cavite in the implementation of RRDP program, according to academic levels, in terms of:
  - 2.1 Financial Aspect;
  - 2.2 Technical Aspect;
  - 2.3 Human Aspect?
3. Is there a significant difference on the level of compliance in the RRDP program as perceived by the teacher respondents according to academic levels?
4. Is there a significant difference on the problems encountered in the implementation of RRDP program in according to academic levels?

## Literature Review

### Philippines at Risk

The Philippines is one of the top countries in the world which is found to be at risk of climate-related disasters. Being an archipelago with 7,107 islands, it is known to be the fourth most at-risk country in the world in terms of climate-related natural disasters like typhoons, flooding, sea level rise and extreme temperature (Alcayna, Bolletino & Vinck, 2016). The country is also known to be situated at the Pacific Ring of Fire, which made faced frequent number of earthquakes and tsunamis over the years. Moreover, the country is known to be the home of active faults and several trenches. One of the most fearful calamity that happened in the history of the Philippines was when magnitude 8.0 shook Mindanao island at past midnight of August 17, 1976. This was followed by a four to five meters high of tsunami covering the 700 kilometers of coastline bordering the island. People

were caught off guard thus killing 8,000 people and leaving 10,000 more injured while 90,00 people homeless (Philippine Information Agency, 2019). Also, year 1990 is another unforgettable phenomenon in the Philippine History when Baguio City was hit by a 7.9 magnitude earthquake for 45 seconds, killing at least 1,621 people and causing almost 15 billion damages (Jardin, 2012).

These things may be unavoidable but as believed, the community can come prepared when they strike unexpectedly. With this, the country devoted itself into strengthening its capacity in fronting disasters and reducing population exposure and susceptibility, both nationally and locally (Alcayna, Bolletino and Vinck, 2016).

### **Risk Reduction and Disaster Preparedness in the Philippines**

Different agencies of the country have been doing their part in preparing for any “Big One” event. Creation of an agency to focus in this matter was pushed through which created the National Disaster Risk Reduction and Management Council (NDRRMC) in 2010, formerly known as the National Disaster Coordinating Council (NDCC). The NDRRMC formulated the RA No. 10121 of 2010, provided by the government, as the legal basis for policies, plans and programs in facing disasters. The program covers four thematic areas, namely, (1) Disaster Prevention and Mitigation; (2) Disaster Preparedness; (3) Disaster Response; and (4) Disaster Rehabilitation and Recovery, which correspond to the structure of the National Disaster Risk Reduction and Management Council (NDRRMC). The Office of Civil Defense formulates and implements the NDRRMP and ensures that the physical framework, social, economic and environmental plans of communities, cities, municipalities and provinces are consistent with such plan. The NDRRMP sets down the expected outcomes, outputs, key activities, indicators, lead agencies, implementing partners and timelines under each of the four distinct yet mutually reinforcing thematic areas (www.ndrrmc.gov.ph).

Generally, the set of activities are divided into three timelines, namely, Short Term, 2011 – 2013, Medium term, 2014 – 2016; and Long term, 2017 – 2028. This year 2019 is part of the Long term period. The NDRRMP sets down the expected outcomes, outputs, key activities, indicators, lead agencies, implementing partners and timelines under each of the four distinct yet mutually reinforcing thematic areas. With this, it is then a must to put into implementation all the

programs.

An important link in the national-local chain are the Regional Disaster Risk Reduction and Management Councils (RDRRMCs) and the Local Disaster Risk Reduction and Management Councils (DRRMCs). The RDRRMC shall take the overall lead to ensure that DRRM-sensitive regional development plans contribute to and are aligned with the NDRRMP. Local DRRM Plans (LDRRMPs) which OCD is tasked to evaluate, shall ensure that DRR measures are incorporated into the Comprehensive Development Plan (CDP) and the Comprehensive Land Use Plan (CLUP) of the local government units.

It was also mandated that the results-based programming shall be used to ensure that the implementation is done on time and learning is done according to the DRRM system. The OCD shall develop a standard monitoring and evaluation template together with the Technical Management Group.

This stepwise monitoring and evaluation process includes the LGU, regional and national levels. To monitor and evaluate, the indicators will be used against targets and activities identified in each of the four thematic areas of the NDRRMP with the aid of the identified means of verification. Annual reporting is done by the NDRRMC through the OCD to the Office of the President, Senate and House of Representatives, within the quarter of the succeeding year.

### **Role of Academic Institutions**

Creating effective public awareness and motivating individuals to get a collective commitment to develop a culture of prevention in the community requires sustained activities that are essentially educational in nature. There is a need of consistent efforts in this direction since retention happens when activities are done repetitively to be able to create a significant impact on people. Hence integrating disaster risk reduction in the structured educational programmes and providing professional training becomes essential. Investing in capacity building of various stakeholders to inculcate the prevention approach will have more lasting effect than the investment made in only technological systems in order to reduce disaster risks (Galliara and Ananya Prabhawalkar, 2012). As Schools, have to plan and commit in making effort to create a conducive learning atmosphere and process to enable the students to develop their potentials actively, and to express religious and spirituality, self-control, personality, intelligence, good morals, and skills

needed for themselves, their communities, and country. Pertaining to this, the school still gains trust as an effective institution to build the culture of disaster preparedness in societies, particularly among students, teachers, education practitioners, other stakeholders as well as to the public (Consortium for Disaster Education, Indonesia, 2011).

This is why one of the key activities of the RA No. 10121 of 2010 is the integration of DRRM and CCA (Climate Change Adoption) in the school curricula, textbooks and manuals (dilg.gov.ph). It is a must that the advocacy of information dissemination, implementation and monitoring must be done.

This is the reason why the Department of Education has created the Comprehensive DRRM in Basic Education Framework, which underscores the following pillars of focus: Safe Learning Facilities, School Disaster Management and DRR in Education. The ongoing implementation of this pillars is aligned with DepEd's commitment to the four thematic areas of Philippines DRRM Act of 2010, otherwise known as RA 10121. These areas are Prevention and Mitigation, Preparedness, Response, Recovery and Rehabilitation (DepEd, n.d.). Based on the framework, Safe Learning facilities refers to the physical and other related structures of the schools. It also includes the establishment of temporary learning spaces that can be used during possible displacement brought by disasters and/or emergencies. Here, education authorities, architects, engineers, builders and school members undertake safe site selection, design, construction, and maintenance of school structures to ensure safe and continuous access to the facility. On the other hand, School Disaster Management pillar refers to the establishment of organizational support structures such as the DRRM service and DRRM Coordinators in all regional and division offices of DepEd. This also cover the setting up of systems, processes and standards to operationalize the four (4) thematic areas in the context of basic education. Lastly, Disaster Risk Reduction in Education pillar refers to the integration of DRRM in the formal and non-formal school curricula and in extra-curricular activities. It should also provide the necessary material support. These covers building the capacity and skills of learners and personnel, particularly the academic community.

## Methodology

Quantitative-descriptive correlational research design was used in this study. Descriptive since the study only described the compliance and evidence level in the

Risk Reduction and Disaster Preparedness (RRDP) program of the public academic institutions in the municipality of Carmona, Cavite. Likewise, problems encountered were also described. Moreover, correlational research design was employed since it determined the significant differences on the level of compliance and problems encountered in the implementation of RRDP program according to academic levels in the municipality.

## Participants

The participants of the study were the teachers from the public academic institutions in the municipality of Carmona, Cavite in academic year 2020-2021. In addition, the designated School Disaster Risk Reduction Management (SDRRM) officers were also involved in the study to countercheck the responses of the teacher respondents and to determine the level of evidence in the RRDP program. The researchers used the RRDP checklist and the survey instrument lifted from the Department of Education's School Disaster Risk Reduction and Management Manual in assessing the degree of evidence and compliance of the selected public academic institutions.

To get the number of participants of the study, the researchers used the Krejcie and Morgan formula for known population. Out of six hundred forty-three (643) teachers in Carmona, Cavite, two hundred forty-one (241) teachers were taken as participants of the study with twelve (12) SDRRM officers, one in each institution. The number of the teacher respondents were proportionately distributed to the public academic institutions in the municipality. The total number of the participants and the list of schools in the municipality of Carmona, Cavite were requested and obtained from the Department of Education Division Office.

After knowing the total number of population, the researchers used the Krejcie and Morgan (1970) formula for known population to determine the sample size



Table 1. *Distribution of the participants in Carmona, Cavite*

<i>Municipality</i>	<i>Total Population (N = 643)</i>	<i>Sample Population (n = 241)</i>	<i>Percentage (%)</i>
Carmona			
*Elementary			
Bancal Elementary School	42	16	7.00
Cabilang Baybay Elementary School	23	9	3.00
Carmona Elementary School	60	22	9.00
Lantic Elementary School	27	12	5.00
Mabuhay Elementary School	25	9	3.00
Maduya Elementary School	26	10	4.00
Milagrosa West Elementary School	42	16	7.00
Milagrosa Elementary School	41	15	6.00
Paligawan Matanda Elementary School	10	4	2.00
*Junior High School			
Carmona National High School	201	78	33.00
*Senior High School			
Angelo Leardo Loyola Senior High School	60	24	10.00
*State University/College			
Cavite State University - Carmona	69	26	11.00
<b>Total</b>	<b>643</b>	<b>241</b>	<b>100</b>

### Instruments of the Study

A survey instrument adapted from the study of Lopez, Echavez, Magallen and Sales (2018) was used in the study. The instrument was anchored on the instrument made by the Department of Education in its School Disaster Risk Reduction and Management Manual (2012) with a four-point likert scale. There were 33 questions which were divided into three categories namely: safe learning activities (12), school disaster management (10) and disaster risk reduction in education (11). There were also additional modified questions on the problems encountered in terms of financial aspect (5), technical aspect (5) and human aspect (7). To make the results more valid and reliable, the researchers also used a Disaster Risk Reduction and Monitoring tool adapted from the Department of Education to counter check the responses of the participants and this was used as a guide in asking the SDRRM officer. The instrument consists of 34 questions on the three key areas such as: safe learning activities (9), school disaster management (17) and disaster risk reduction in education (8) which are aligned with the instrument answered by the participants.

### Procedure

The researchers wrote and submitted a permission letter to the Department of Education, Division of Cavite to conduct a survey to the teachers and designated School Disaster Risk Reduction Management (SDRRM) officers of the public academic institutions in the municipality of Carmona, Cavite. Meanwhile, for the academic institutions in the tertiary level, letter of request to conduct the study was submitted to the designated/appointed dean/administrator. Upon approval by the Division Superintendent, the letter was shown to the school principals/school heads informing them of the

approval of the said undertaking. After which, the researchers already proceed with the data gathering activity. Google Form was used in distribution of research instrument sent via email and messenger. Questions and clarifications regarding the study were answered by the researchers using the same platform.

### Ethical Considerations

Prior to the conduct of the study, the researchers submitted the proposal to the Ethics Review Board to check and evaluate if the study conforms with the ethical standards in conducting research involving human participants. Likewise, the researchers sought the approval from the Department of Education and submitted all the necessary documents for ethical considerations. Informed consent was given to the participants to ensure voluntary participation. All information was used only for the purpose of the study and only the researchers have access to all the gathered data.

### Results

This section presents the findings according to the study's research questions. Weighted mean and Analysis of Variance were used to analyze and interpret the results of the study.

### Compliance and Evidence Level in the Risk Reduction and Disaster Preparedness (RRDP) Program according to Academic Levels in Carmona, Cavite

The result for the compliance and evidence level in the RRDP program of the public academic institutions according to academic levels is presented in Table 5 to 8. The compliance and evidence level are evaluated in terms of safe learning facilities, school disaster management and disaster risk reduction in education.

Table 2. *Compliance and evidence level in the RRDP Program of elementary school level in Carmona, Cavite*

<i>Compliance</i>	<i>Teacher Respondents</i>		<i>SDRRM Officer</i>	
	<i>Mean</i>	<i>Interpretation</i>	<i>Mean</i>	<i>Interpretation</i>
a. Safe Learning Facilities	3.58	Highly Complied	2.79	Strongly Evident
b. School Disaster Management	3.58	Highly Complied	2.74	Strongly Evident
c. Disaster Risk Reduction in Education	3.62	Highly Complied	2.62	Strongly Evident
<b>Overall</b>	<b>3.59</b>	<b>Highly Complied</b>	<b>2.72</b>	<b>Strongly Evident</b>

Table 3. *Compliance and evidence level in the RRDP Program of junior high school level in Carmona, Cavite*

Compliance	Teacher Respondents		SDRRM Officer	
	Mean	Interpretation	Mean	Interpretation
a. Safe Learning Facilities;	3.49	Highly Complied	3.00	Strongly Evident
b. School Disaster Management;	3.54	Highly Complied	2.88	Strongly Evident
c. Disaster Risk Reduction in Education	3.66	Highly Complied	3.00	Strongly Evident
Overall	3.56	Highly Complied	2.96	Strongly Evident

Table 4. *Compliance and evidence level in the RRDP program of senior high school level in Carmona, Cavite*

Compliance	Teacher Respondents		SDRRM Officer	
	Mean	Interpretation	Mean	Interpretation
a. Safe Learning Facilities;	3.11	Moderately Complied	2.22	Moderately Evident
b. School Disaster Management;	3.78	Highly Complied	2.59	Strongly Evident
c. Disaster Risk Reduction in Education	3.83	Highly Complied	2.38	Strongly Evident
Overall	3.57	Highly Complied	2.40	Strongly Evident

Table 5. *Compliance and evidence level in the RRDP program of the university level in Carmona, Cavite*

Compliance	Teacher Respondents		SDRRM Officer	
	Mean	Interpretation	Mean	Interpretation
a. Safe Learning Facilities;	2.81	Moderately Complied	2.66	Strongly Evident
b. School Disaster Management;	2.94	Moderately Complied	2.29	Moderately Evident
c. Disaster Risk Reduction in Education	3.18	Moderately Complied	1.75	Moderately Evident
Overall	2.98	Moderately Complied	2.23	Moderately Evident

### Problems Encountered by the Public Academic Institutions in Carmona, Cavite in the Implementation of Risk Reduction and Disaster Preparedness (RRDP) Program According to Academic Levels

The result for the problems encountered in the implementation of RRDP program of the public academic institutions according to academic levels is presented in Table 9 to 12. The problems encountered are evaluated in terms of financial, technical and human aspect.

Table 6. *Problems encountered in the implementation of RRDP program in the elementary level in Carmona, Cavite*

Problems Encountered	Weighted Mean	Interpretation
a. Financial	2.22	Slightly Encountered
b. Technical	1.75	Not Encountered
c. Human	1.99	Slightly Encountered

Table 7. *Problems encountered in the implementation of RRDP program in the junior high school level in Carmona, Cavite*

Problems Encountered	Weighted Mean	Interpretation
a. Financial	2.37	Slightly Encountered
b. Technical	1.79	Slightly Encountered
c. Human	1.99	Slightly Encountered

Table 8. *Problems encountered in the implementation of RRDP program in the senior high school level in Carmona, Cavite*

Problems Encountered	Weighted Mean	Interpretation
a. Financial	1.98	Slightly Encountered
b. Technical	1.39	Not Encountered
c. Human	1.91	Slightly Encountered

Table 9. *Problems encountered in the implementation of RRDP program in the university in Carmona, Cavite*

Problems Encountered	Weighted Mean	Interpretation
a. Financial	2.67	Moderately Encountered
b. Technical	1.82	Slightly Encountered
c. Human	2.40	Slightly Encountered

### Significant Differences on the Compliance Level in the RRDP Program According to Academic Levels in Carmona, Cavite

Table 10 showed the significant differences on the

compliance level in the RRDP program according to academic levels in the municipality of Carmona, Cavite.

Table 10. *Significant differences on the level of compliance in the RRDP Program according to academic levels in Carmona, Cavite*

<i>Variable</i>	<i>F-Value</i>	<i>P-Value</i>	<i>Interpretation</i>
Carmona			
(Elementary, Junior High School, Senior High School, College)	13.610	0.000	Significantly Different

### Significant Differences on the Problems Encountered in the Implementation of RRDP Program according to Academic Levels in Carmona, Cavite

The result for the problems encountered in the implementation of RRDP program according to academic levels in the municipality of Carmona, Cavite is presented in Table 11.

Table 11

<i>Variable</i>	<i>F-Value</i>	<i>P-Value</i>	<i>Interpretation</i>
Carmona			
(Elementary, Junior High School, Senior High School, College)	2.137	0.096	Insignificantly Different

## Discussion

This section shows the discussion for the results of the study on the compliance level, evidence level, and problems encountered in the implementation of RRDP program. Compliance and Evidence Level in the Risk Reduction and Disaster Preparedness (RRDP) Program according to Academic Levels in Carmona, Cavite

### Elementary Level

The result revealed that the overall level of compliance in the RRDP program of the elementary schools in the municipality of Carmona, Cavite was highly complied with an overall mean of 3.59. This means that the elementary teachers perceived the management of the institution to be very serious in the implementation of a successful Risk Reduction and Disaster Preparedness program in consideration of all the three pillars of the

comprehensive Disaster Risk Reduction and Management (DRRM).

On the other hand, the overall result for the level of compliance was supported by the results obtained from the School Disaster Risk Reduction and Management (SDRRM) officers with a strong level of evidence in all the pillars namely safe learning facilities (2.79), school disaster management (2.74) and disaster risk reduction in education (2.62) arriving to an overall mean of 2.72 interpreted as strongly evident. This just shows that the perceived level of compliance of the teacher respondents and the perceived level of evidence of the SDRRM officers of the elementary schools in the municipality of Carmona, Cavite were the same when it comes to the implementation of the RRDP program in their respective institution. There was no mismatch between the teachers' perception on the RRDP program implementation and the actual activities spearheaded by the SDRRM officers.

The overall result implied that elementary schools in Carmona, Cavite have a very good physical structures which also include temporary learning spaces that can be utilized during possible displacement brought by disasters or emergencies; with a very good organizational support structures such as DRRM services; and a very good integration of DRRM in school curricula and extra-curricular activities which builds the capacity and skills of the learners and school personnel.

This result was a successful manifestation of the DepEd Division Order 37, s. 2015 or The Comprehensive Disaster Risk Reduction and Management in Basic Education Framework that the authorities in the basic education sector have made inroads in their efforts towards resilience-building in offices and schools, and ensuring quality education is continuously provided and prioritized even during disasters and emergencies (DepEd, 2015).

### Junior High School Level

The result revealed that the overall level of compliance in the RRDP program of the junior high school Carmona, Cavite was highly complied with an overall mean of 3.56. This means that the junior high teachers perceived the management of the institution to be very serious in the implementation of a successful Risk Reduction and Disaster Preparedness program in consideration of all the three pillars of the comprehensive Disaster Risk Reduction and Management (DRRM).

On the other hand, the overall result for the level of



compliance was supported by the results obtained from the School Disaster Risk Reduction and Management (SDRRM) officers with a strong level of evidence in all the pillars namely safe learning facilities (3.00), school disaster management (2.88) and disaster risk reduction in education (3.00) arriving to an overall mean of 2.96 interpreted as strongly evident. This just shows that the perceived level of compliance of the teacher respondents and the perceived level of evidence of the SDRRM officers of the junior high school in the municipality of Carmona, Cavite were the same when it comes to the implementation of the RRDP program in their respective institutions. There was no mismatch between the teachers' perception on the RRDP program implementation and the actual activities spearheaded by the SDRRM officers.

The overall result implied that junior high school in Carmona, Cavite have a very good physical structures which also include temporary learning spaces that can be utilized during possible displacement brought by disasters or emergencies; with a very good organizational support structures such as DRRM services; and a very good integration of DRRM in school curricula and extra-curricular activities which builds the capacity and skills of the learners and school personnel.

The result was supported by the study of Echavez, Lopez, Magallen and Sales (2018) stating that secondary school teachers and students in Bohol perceived their schools to be compliant in the RRDP program despite the problems encountered in the program implementation. In addition, Muttarak and Pothisiri (2013) emphasized that formal education in primary and secondary schools can help promote disaster preparedness because education enhances the cognitive and learning skills of the students which help them make right decisions in times of disasters.

### Senior High School Level

The result revealed that the overall level of compliance in the RRDP program of the senior high schools in Carmona, Cavite was highly complied with an overall mean of 3.57. This means that the senior high teachers perceived the management of the institution to be very serious in the implementation of a successful Risk Reduction and Disaster Preparedness program in consideration of all the three pillars of the comprehensive Disaster Risk Reduction and Management (DRRM).

On the other hand, the overall result for the level of compliance was supported by the results obtained from

the School Disaster Risk Reduction and Management (SDRRM) officers with a moderate and strong level of evidence in all the pillars namely safe learning facilities (2.22), school disaster management (2.59) and disaster risk reduction in education (2.38) arriving to an overall mean of 2.40 interpreted as strongly evident. This just shows that the perceived level of compliance of the teacher respondents and the perceived level of evidence of the SDRRM officers of the senior high schools in Carmona, Cavite was the same when it comes to the implementation of the RRDP program in their respective institutions. There was no mismatch between the teachers' perception on the RRDP program implementation and the actual activities spearheaded by the SDRRM officers.

The overall result implied that the senior high school in Carmona, Cavite have a very good organizational support structures such as DRRM services; a very good integration of DRRM in school curricula and extra-curricular activities which builds the capacity and skills of the learners and school personnel; a good physical structures, still with some improvement as it has the lowest compliance, which include temporary learning spaces that can be utilized during possible displacement brought by disasters or emergencies.

The result was a manifestation of a successful implementation of the policy on the integration of disaster risk education in the curricula of senior high schools. According to Miasco (2017), the Department of Education already reinforced disaster preparedness and management education through programs and projects spearheaded by non-government agencies and the local government units and experts from these agencies provide orientation and training on disaster mitigation and preparedness, as well as distribute DRRM manuals to senior high school students and faculty members.

### University Level

Surprisingly, for the overall level of compliance in the RRDP program of the university in Carmona, Cavite, the result revealed that it was only moderately complied with an overall mean of 2.98. This just showed that teachers in the college/university level perceived the management of the institution to be just serious in the implementation of a successful Risk Reduction and Disaster Preparedness program with still consideration of all the three pillars of the comprehensive Disaster Risk Reduction and Management (DRRM).

On the other hand, the results for the level of

compliance based on the teacher respondents is different from the obtained results from the School Disaster Risk Reduction and Management (SDRRM) officer when it comes to the safe learning facilities pillar. The SDRRM officers assessed the level of evidence for the safe learning facilities (2.67) as strongly evident compared to the moderate compliance on the teachers' responses. Meanwhile, it showed a similar result for the school disaster management (2.29) and disaster risk reduction in education (1.75) which were both interpreted as moderately evident the same with the moderate compliance in the teachers' response. The result, on this particular level, revealed that there was a mismatch between teachers' perception on the RRDP program implementation and the actual activities spearheaded by the SDRRM officers which should be coordinated between the two parties for a successful evaluation and implementation of the program.

However, the overall result still implied that college/university in Carmona, Cavite still have a good physical and other related structures which include temporary learning spaces that can be utilized during possible displacement brought by disasters or emergencies; with a good organizational support structures such as DRRM services; and a good integration of DRRM in school curricula and extra-curricular activities which builds the capacity and skills of the learners and school personnel.

The result was supported by Miano (2017) saying that college and university students are further capacitated through civic education and defense preparedness program including disaster risk management. Likewise, the Commission on Higher Education (CHED) (2017) highlighted that disaster mitigation, preparedness and management is among the topics being taught to students in the tertiary level through the National Service Training Program (NSTP) and stated that all HEIs are required to organize their respective disaster responders. It was also mentioned in the Republic Act 10121 that local DRRM bodies are mandated to "encourage community, specifically the youth, participation in disaster risk reduction and management activities, such as organizing quick response groups, particularly in identified disaster-prone areas, as well as the inclusion of disaster risk reduction and management programs as part of youth programs and projects."

Problems Encountered by the Public Academic Institutions in Carmona, Cavite in the Implementation of Risk Reduction and Disaster Preparedness (RRDP) Program According to Academic Levels

## Elementary Level

Results of the study showed that, as perceived by the elementary teachers in Carmona, Cavite, their schools slightly encountered financial and human problems with the implementation of RRDP Program and no problems at all in the technical factor.

It can be observed that among the three factors, financial aspects got the highest mean of 2.22 compared to the human aspect and technical aspect. This shows that with elementary schools, although slightly encountered, financial matters in the implementation of the RRDP Program is the highest concern.

As revealed in the responses of the teachers in terms of financial aspect, they were able to slightly encounter problems as to lack of funds to support the RRDP program of the institution, since budgets are realigned for other school priorities and there are also limited resources other than funds such as training materials; space for training, etc. In terms of human aspect, most of the problems the schools slightly encountered includes limited staff to facilitate or manage the preparations of the program, the assigned authorities or officials have other work or job priorities, and that they lack volunteers to initiate the preparations of the program. Despite these facts, it is a good thing that the elementary schools generally did not encounter problems on technical aspects, except with having slight problems as to lack of information, which seems some of them does not know what to do and on handbook/guidelines about the preparations.

This is in consonance with the study of Benson (2016) saying that reallocation of planned capital is really needed and recurrent spending is a must to meet more immediate post disaster spending requirements. Moreover, Tuladhar, Yatabe, Dahal and Bhandary (2015) also found out that academic personnel are really not knowledgeable about disaster and risk reduction issues in the educational sector, thus, a dilemma in terms of human aspects.

## Junior High School Level

It shows that in terms of financial, technical and human aspects, with weighted means of 2.37, 1.79 and 1.99 respectively, there were slight encounters on all these aspects. Similar with the elementary level, it can be observed that in this set of teachers, they perceived financial aspects as their highest problem, seconded by human factors then technical aspects.

Analyzing further the responses of the teachers, in

terms of financial aspect, there was a moderate encounter on the realignment of budget for other school priorities. But, altogether, the result still showed slight problems in this aspect. In terms of the human aspect, the top reasons of this encounter focused on having a limited staff to facilitate or manage any preparations of the program, lacking volunteers to initiate the said preparations and lacking time for collaborative work among the teachers.

In terms of the human aspects, the result is supported by the study of Rotas (2020) saying that teaching is already a multifaceted task and teachers are inevitably exposed to superfluous teaching workloads and challenges which already take so much of their time that they cannot work for other extra functions and designations.

### Senior High School Level

The senior high school teacher respondents in Carmona, Cavite perceived that, generally, they slightly encountered financial problems and human problems, but do not encounter dilemma in terms of technical aspects which got the lowest weighted mean of 1.39, compared to the financial and human aspects with weighted means of 1.98 and 1.91, respectively. It shows that in this level, repeatedly, financial aspect is the most encountered problem.

This is supported with the claims of the teachers as most of them perceived that, as to financial aspects, lack of funds to support RRDP program of the institution, budgets are realigned for other school priorities which led to no budget allocation for the implementation of the program and no qualified bidder for the projects and the limited resources other than funds such as training materials; space for training, etc. are the usual encountered dilemma in the implementation of the RRDP programs in their schools. This clearly says they are financially challenged when it comes to the implementation of it. As to human aspects, usual top dilemma includes limited staff to facilitate or manage the preparations, lack of volunteers to initiate the preparations, lack of time for collaborative work among members of the faculty and authorities or officials assigned have other work or job priorities. In terms of technical aspects, it is a satisfactory note that they did not encounter problems on this matter.

Bello (2020) had the same observation with the high school institutions in the island of Samar which when they tried to identify reasons of the great devastation which occurred when super typhoon Yolanda swept

there are and killed over 6000 people, displacing four (4) million people. It showed that the problems encountered on the implementation included insufficient fund subsidy of schools for the DRRM implementation and limited financial support from other stakeholders.

### University Level

The results showed that when it comes to technical (1.82) and human problems (2.40), there were slight encounter while a moderate encounter on the financial problems (2.67).

This is supported with the claims of the teachers as most of them perceived that, as to financial aspects, lack of funds to support RRDP program of the institution and limited resources other than funds such as training materials and spaces for training are the usual encountered dilemma in the implementation of the RRDP programs in their institution. This clearly shows that they are financially challenged when it comes to the implementation of the RRDP program. As to human aspects, usual top dilemma includes limited staff to facilitate or manage the preparations, lack of volunteers to initiate the preparations, lack of time for collaborative work among members of the faculty and lack of training for faculty members. In terms of technical aspects, most of the dilemmas encountered in the implementation of RRDP were having no handbook/guidelines about the preparations which lead to lack of information regarding the preparations on RRDP program (participants do not know what to do).

This result is consistent with the discussion paper series of Domingo (2017) recommending to have more resource allocation at the national and local levels since it is relatively substantial. There may be increasing fund allocation every year but a relative augmentation of funds is still necessary considering we have 18 administrative regions to accommodate with for the DRRM programs.

### Significant Differences on the Compliance Level in the RRDP Program According to Academic Levels in Carmona, Cavite

The result revealed that all academic levels have significant differences on the level of compliance in the implementation of the RRDP program. This just revealed that the DRRM approach and DRRM implementation process in all academic levels in the municipality of Carmona, Cavite differed from one another. The result implied that the level of

compliance according to academic levels in Carmona, Cavite really differed from one another as it might be affected by the leadership/management style and the priority level in DRRM of the school heads/principals and the respective deans/administrators.

### **Significant Differences on the Problems Encountered in the Implementation of RRDP Program according to Academic Levels in Carmona, Cavite**

As expected, the result showed no significant differences on the problems encountered in the implementation of RRDP program according to academic levels in Carmona, Cavite. This just showed that all academic levels in the said municipality experienced the predicaments and faced such challenges in the successful implementation of RRDP program in their respective institution.

Just the same with the result of Asio (2021) discovering that there are also no significant differences in the level of compliance with disaster programs as it is grouped based on locations in Central Luzon. This just reveals that no significant difference may appear as well in Carmona, Cavite even if grouped at different levels.

### **Conclusion**

This study was primarily conducted to determine the level of compliance and predicaments encountered in the Risk Reduction and Disaster Preparedness (RRDP) program of the selected public academic institutions in the municipality of Carmona, Cavite. Likewise, it aimed to determine if there are significant differences on the compliance level and problems encountered in the implementation of the said program according to academic levels in the said municipality. As a result, the researchers provided suggestions/recommendations to further enhance the implemented RRDP program.

It was also concluded that among the academic levels in Carmona, Cavite, the elementary, junior high school and senior high school levels have high level of compliance in the RRDP program. This was also supported by a strongly evident level of assessment based on the SDRRM officers' responses. Moreover, it was concluded that the elementary schools in Carmona, Cavite got the highest level of compliance in the RRDP program which signifies that the Department of Education have an effective approach in integrating DRRM education in the basic education curricula. Consequently, the university/college level

obtained the lowest level of compliance in the RRDP program having a moderate level of compliance. This suggests colleges/universities in Carmona, Cavite to exert more effort and initiative in strengthening the implementation of RRDP program in their respective institutions.

On the other hand, for the predicaments encountered in the implementation of RRDP program according to academic levels in the Carmona, Cavite, it was concluded that the major problem faced by schools of all academic levels in the successful implementation of the RRDP program focused on the financial aspect needed to support and fund the program. It was followed by the human aspect since there is only a limited staff who facilitates or manages the preparations. The least of all the given problems encountered, common to all levels, was the technical aspect which merely focused on information dissemination through handbooks. This implied that among the problems encountered in the implementation of RRDP program, financial aspect is found to be prioritized and be addressed.

Moreover, it was concluded that there was a significant difference on the level of compliance of all the academic levels in the RRDP program. The result implied that the level of compliance according to academic levels in Carmona, Cavite really differed from one another as it might be affected by the leadership/management style and the priority level in the DRRM of the school heads/principals and deans/administrators.

Subsequently, for the significant differences on the problems encountered in the implementation of RRDP program according to academic levels in the municipality of Carmona, Cavite, the results showed no significant differences in all academic levels. This implied that problems involved in the study were common to all academic levels which were obvious since all public academic institutions are anchored in only one educational agency, Department of Education for the elementary, junior high and senior high school levels and Commission on Higher Education for the tertiary level. Thus, a centralized system for all the policies, procedures and programs is advised.

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