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# Selected Public School Teachers' Awareness and Involvement in School-Based Disaster Risk Reduction Management Measures

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## Abstract

This study aims to determine the level of awareness and level of involvement on School-Based Disaster Risk Reduction Management Measures of selected District 10 teachers in the Schools Division of Baybay City-District 10. The study made use of a descriptive correlational survey research design. Data were collected from 85 respondents employing an estimated 79% sample size. The study utilizes a 5-point Likert scale in measuring level of awareness and involvement. Part I of the questionnaire focuses on the socio-demographic profile of the respondents categorized the sex, age, civil status, number of related trainings/seminars attended and number of years in teaching service while Part II and Part III of the research tool focuses on the Teachers' Level of Awareness and Level of Involvement on School-Based Disaster Risk Reduction Management Measures. The researcher utilizes the questions based from the DepEd in its School Disaster Risk Reduction and Management Manual Booklet 2 in their 2015 edition. Results reveals that the respondents have high level of awareness and high level of involvement on School-Based Disaster Risk Reduction Management Measures. In addition, there was no significant differences in disaster's level of awareness when grouped according their socio-demographic profile: sex, age, civil status, number of related trainings/seminars and number of years in teaching service and also the disaster's level of involvement in School-Based Disaster Risk Reduction Management Measures shows no significant when they are grouped according to their socio -demographic profile. Lastly, the results reveal that there is a significant relationship between the teachers' level of awareness and the teachers' level of involvement on School-Based Disaster Risk Reduction Management Measures. Moreover, the results found out that installation of appropriate and available fire suspension equipment or resources such as fire extinguishers, water source and relevant indigenous materials, ensuring that learners have identification cards with relevant information and holding regular meetings with parents to exchange views on student's achievement relating to DRR learning inside and outside the classroom had the lowest weighted mean. It can be concluded that there is a need for an action plan to developed to find solution to the indicators identified to have the lowest weighted mean both in the level of awareness and the level of involvement on School-Based Disaster Risk Reduction Management Measures.

***Keywords:*** ***Teachers' Awareness, Teachers' Involvement, Safe Learning Facilities, School Disaster Management, Disaster Risk Reduction in Education***

## Introduction

The National Disaster Risk Reduction and Management Plan fulfills the requirement of RA No. 10121 of 2010, which provides the legal basis for policies, plans and programs to deal with disasters. The department's Unified DRMM in Basic Education Framework includes three pillars: safe learning facilities, school disaster management, and disaster risk reduction in education. The Disaster Risk Reduction and Management Service takes the lead in empowering the learners, personnel, schools and offices to ensure safety and learning continuity; institutionalize Disaster Risk Reduction and Management (DRRM), Climate Change Adaptation (CCA) and Education in Emergencies (EiE) in the scope of work across and within all levels of DepEd; and strengthen the resilience of K-12 education in the context of natural and human-induced hazards.

According to Republic Acts 9729 known as the Philippine Climate Change Act of 2009, the Philippines is vulnerable to several disasters occurring naturally which is brought by the changing landscapes, rising of ocean, severe droughts that results to the occurrence of wildfires and heavy floods. Effects of disasters are very tremendous, it can be loss of lives, loss of access, and the loss of services. Righi, et al. (2021) mentions that natural and technological disasters and health emergencies are increasingly causing human and economic losses and disruptions. In fact, a large number of schools have been destroyed by the "super typhoon" that devastated the Philippines – and more than one million children could have their education disrupted for some time (UNICEF 2018).

The disasters experienced spurred the Department of Education authorities to integrate the disaster risk reduction and management in their curricula. Section 14 of Republic Act 10121 or the Philippine Disaster Risk Reduction and Management Act of 2010 requires the DepEd among other agencies to integrate the said curricula. Thus, DepEd Order No. 45, s. 2015 mandates School-Based Management Department of Education to create a healthier environment for school kids, and to generate a strong interest in achieving better educational results, take the lead in training individuals to become disaster risk management experts, and so disaster risk reduction programs and curricula need to be mainstreamed across all levels of curriculum.

The Department of Education is central in the safekeeping of lives and thus plays an active role in the nation's effort in Disaster Risk Reduction Management. The Department of Education had encouraged school authorities to practice disaster preparedness measures in their particular schools. Preparedness can alleviate the effects of disasters on school, teachers and especially to the learners. Participating actively in disaster preparedness of teachers, students, parents and their communities are also encouraged for this is an effective way of raising their awareness about risk reduction. Furthermore, Dikmenli, et al. (2018) asserts that teachers need education to raise awareness of disaster prevention. The education for disaster prevention awareness includes various measures, such as disaster education awareness and even disaster recovery awareness.

The Schools Division of Baybay City is divided into 10 Districts. District 10 is composed of 11 public schools where 6 are Elementary Schools, 2 are Integrated Schools and 1 is National High School. These schools are located in remote/mountainous area which are far from the city. Because of its location, schools are prone to adverse impacts of disasters and calamities. District 10 experienced different disasters like flood, typhoon, and earthquake that caused damages to the school. Last April 11, some of the school facilities, buildings and resources were damaged because of the Tropical Depression Agaton or Megi and recently, last October 28, Typhoon Paeng (Nalgae) causing light to moderate rains with occasional heavy rains as well as flooding in low laying areas of the schools. There was also earthquake happened last few months, in which some of the structures of Schools Division of Baybay City Public Schools were slightly damaged. As an institution with students and personnel, the school should be ready before, during and after the disaster. If the calamities occur during school hours, safety is everybody's responsibility and primary concern. It is the duty of the school administrators, faculty members and staff to ensure the safety of the students. Precautionary measures, fostering awareness and promoting a culture of preparation are needed to minimize the effects of the disasters and calamities. Knowing the steps to take before, during and after the disaster whether it is a flood, typhoon, and earthquake or another type of disaster can greatly reduce the danger and distress of the disaster. The knowledge of awareness on SDRRM can help DepEd Baybay Public School teachers to reduce the consequences of disaster.

It is important to increase knowledge of teachers of Schools Division of Baybay City-District 10 regarding the natural and man-made disasters in order to make them cope up with the disasters' negative effects. With this, the researcher wanted to assess the level of awareness and involvement of teachers in terms of the three pillars namely: the Safe Learning Facilities, School Disaster Management and Disaster Risk Reduction in Education and determine the significant difference between the socio-demographic profile, the level of awareness and the level of involvement on School-Based Disaster Risk Reduction Management Measures when the respondents are grouped together.

The results of the study are the basis in making proposed action plan in having a greater collaboration among the institution involved to have a high quality of education. Furthermore, the teachers benefit because they will become more competent and they can create a more comprehensive SDRRM Plan that the school community will used. The parents have the assurance that the students are on good hands and safe in the school where they are studying and they will know that students have proper knowledge on how to respond in times of emergency situations because they are taught by their teachers. They help in implementing the safety programs through the parents and teachers' associations (PTA). The community helps in the evaluation of the safety programs of the schools by participating or witnessing in

the school safety drills conducted and submits their evaluation report to the school authorities for reference of the school management for further improvement on its safety programs. The researcher helps the teachers on assessing their level of awareness and involvement so that when disaster occurs, they will be aware of what will they do to be equipped with the needed knowledge. The results of the study add to the body of knowledge concerning on matters as earlier specified that become the basis for another future research.

## Research Questions

1. What is the teachers' level of awareness on School-Based Disaster Risk Reduction Management Measures in terms of Safe Learning Facilities, School Disaster Management and Disaster Risk Reduction in Education?
2. What is the teachers' level of involvement on School-Based Disaster Risk Reduction Management Measures in terms of Safe Learning Facilities, School Disaster Management and Disaster Risk Reduction in Education?
3. Is there a significant relationship of teachers' level of awareness and involvement on School-Based Disaster Risk Reduction Management Measures when grouped according to their socio-demographic profile?
4. Is there a significant relationship between the teachers' level of awareness and teachers' level of involvement on School-Based Disaster Risk Reduction Management Measures?
5. What action plan can be proposed based from the outcome of the study?

## Research Methodology

### Research Design

This study employed descriptive correlation design by Aggarwal & Ranganathan (2019) which intends to determine the relationship between two or more variables and gives an indication of how one variable may affect the other. It is employed in this study to evaluate the relationship of the teachers' awareness and involvement on School-Based Disaster Risk Reduction Management Measures.

### Research Respondents

The respondents of the study were the 85 teachers of School Division of Baybay City-District 10 purposively selected. The researcher determined the respondents using the Slovin's formula.

The study was carried out at Baybay 10 District schools, one of the districts of School Division of Baybay City, where the researcher is assigned. These schools are 20 km away from its municipality and it is led by a school principal.

### Research Instrument

The researcher adopted from the School Safety and Preparedness Guide in 2010 and Malawi Handbook for Child Friendly Schools (CFS) in 2008 and it underwent pilot testing for validity using Cronbach alpha and the result was 87 and interpreted as good in internal consistency, thus, the tool was valid to use. This questionnaire was used to measure the level of awareness and level of involvement of selected teachers on SBDRRMM. There were 25 questions which were divided into three categories namely: Safe Learning Facilities with nine indicators, School Disaster Management with ten indicators and Disaster Risk Reduction in Education with six indicators. The instrument has three parts.

### Data Analysis

The following statistical tools were used to treat the gathered data in order to answer queries of the study:

Frequency counts and percentage distribution were used to present the profile of the respondents.
Weighted Mean was used to determine the teacher's level of awareness and involvement on School-Based Disaster Risk Reduction Management Measures.
Chi-Square was used in analyzing the data effectively to determine the significant difference between the teacher's level of awareness and the teacher's level of involvement in the SBDRRMM when they were grouped according to their socio-demographic profile.
Cronbach Alpha was used to assess the reliability or internal consistency of a set of scale or test items for the cultural knowledge and assessment skill questionnaires.
Spearman's Rank Correlation Coefficient and t-test for the significance of correlation were used in analyzing the data to determine the significant relationship between the level of awareness and level of involvement of selected teachers on SBDRRMM.

## Results and Discussion

### The Teachers' Profile

The teachers were profiled based on their sex, civil status, number of years in teaching service, number of related attended seminars/trainings and age using the questionnaire designed for the purpose. Figure 1, 2, 3, 4 and 5 show the profile of the teachers.

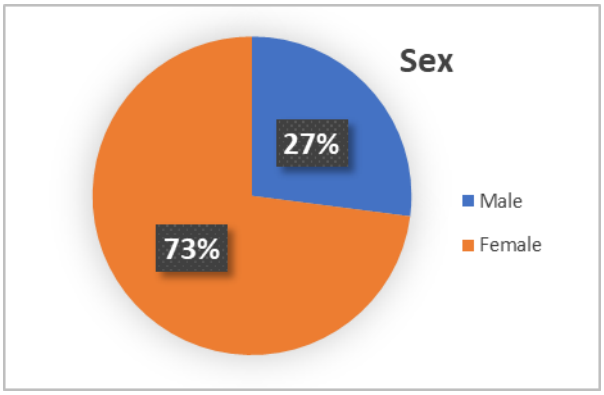


**Figure 1. Distribution of the Sex**

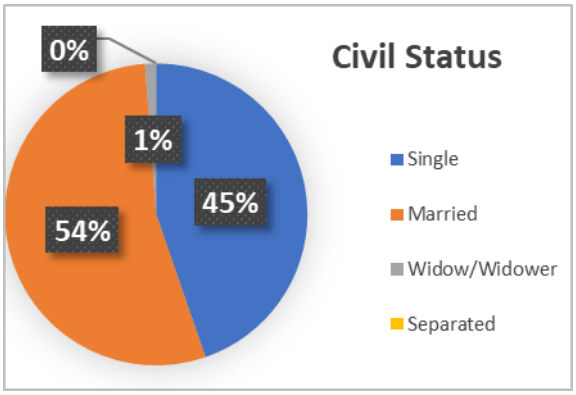


**Figure 2. Distribution of Civil Status**

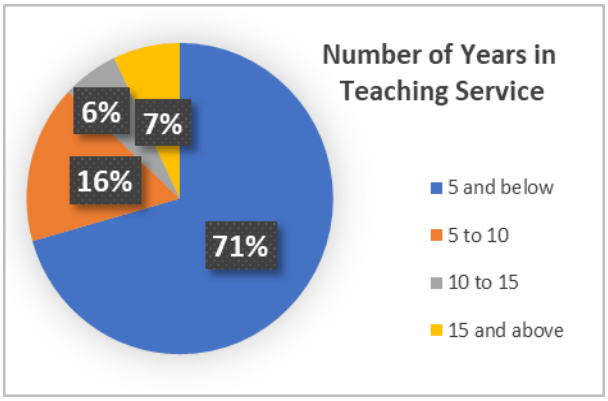


**Figure 3 Distribution of the Number of Years in Teaching Service**

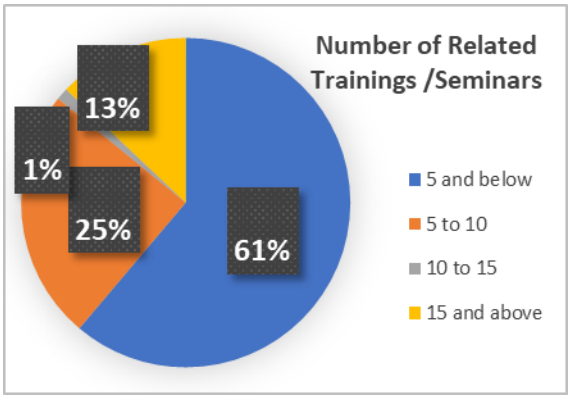


**Figure 4. Distribution of the Number of Related Trainings/Seminars**

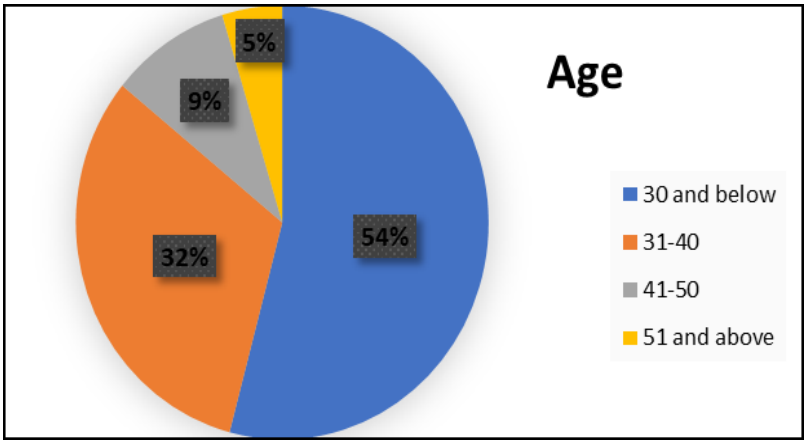


**Figure 5 Distribution of the Age**

The data reveals the specified variables of the socio-demographic profile of the respondents in terms of sex, civil status, number of years in teaching service, number of related trainings/seminars and age. Female respondents were more dominant on the male respondents, in terms of civil status, the married teachers have the greater percentage, in terms of length of service, a greater percentage was more on those who rendered in 5 years and below, with regards to the number of training/seminars attended, 5 and below training/seminars have the greater percentage and a greater percentage was more on those 30 years old and below.

**Table 1: Distribution of Teachers' Level of Awareness on School-Based Disaster Risk Reduction Management Measures**

| No | Pillars | Weighted Mean | Interpretation |
|---|---|---|---|
| 1 | School Disaster Management | 4.21 | High Level of Awareness |
| 2 | Disaster Risk Reduction in Education | 4.17 | High Level of Awareness |
| 3 | Safe Learning Facilities | 4.09 | High Level of Awareness |
| Overall Weighted Mean | | 4.16 | High Level of Awareness |

*4.21-5.00Very High Level of Awareness; 3.41-4.20High Level of Awareness; 2.61-3.40Moderate Level of Awareness; 1.81-2.60Low Level of Awareness; 1.00 -1.80Very Low Level of Awareness*

Teachers have very high level of awareness of the SBDRRMM in terms of School Disaster Management considering the weighted mean of 4.21. Furthermore, the weighted mean of 4.17 described as high level of awareness of the SBDRRMM in terms of Disaster Risk Reduction in Education and it shows that the teachers' level of awareness indicated that teachers are very aware of all those indicators. These findings mean that the District 10 teachers have very high level of awareness of the different indicators of the three pillars on the SBDRRMM. The results show high level of awareness even though the respondents have less number of seminars/trainings because from time to time DepEd has conducted various webinars and trainings for them to maximize the scope that should be covered in order to be aware and involved in disaster management and the District encourage them to attend trainings/ seminars and participate DRR activities in school, from theses, respondents have knowledge on the indicators. Thus, Rañeses, Chang-Richards, Richards, and Bubb (2018) proclaim that by being prepared is having awareness of the disasters that may occur.

**Table 2: Distribution of Teachers' Level of Involvement on School-Based Disaster Risk Reduction Management Measures**

| No | Pillars | Weighted Mean | Interpretation |
|---|---|---|---|
| 1 | Disaster Risk Reduction in Education | 4.16 | High Level of Involvement |
| 2 | School Disaster Management | 4.04 | High Level of Involvement |
| 3 | Safe Learning Facilities | 4.00 | High Level of Involvement |
| **Overall Weighted Mean** | | **4.07** | **High Level of Involvement** |

*Overall Weighted Mean4.07High Level of Involvement; 4.21-5.00Very High Level of Involvement; 3.41-4.20High Level of Involvement; 2.61-3.40Moderate Level of Involvement; 1.81-2.60Low Level of Involvement; 1.00 -1.80Very Low Level of Involvement*

As viewed from Table 2, results show that the teachers' level of involvement on SBDRRMM was high level of involvement based on the obtained overall weighted mean of 4.07. The high level of involvement means that the selected teachers were more involved in the activities related to disaster around them. For the Safe Learning Facilities, the weighted mean of 4.00 described as high level of involvement of the SBDRRMM where it indicates that District 10 teachers met all the indicators on the high level. Similarly, the District 10 teachers' level of involvement have the weighted mean of 4.04 described as high level of involvement of the SBDRRMM in terms of School Disaster Management which means that they are involved on the indicators needed. Lastly, the weighted mean of 4.16 described as high level of involvement of the SBDRRMM shows that the teachers' level of involvement indicated that teachers are very much involved in all those indicators. These findings mean that the District 10 teachers have very high level of involvement of the different indicators of the three pillars on the SBDRRMM. The result shows high level of involvement even though the respondents have limited number of seminars and trainings and only 5 and below years in teaching service because there are seminars conducted every year that is why they are involved on the indicators but because they are newly hired to the District, that is why they have limited seminars in the results of the data. Thus, Cubillas,AU., Aviles and Cubillas, TE (2022) put emphasis that part of having the involvement in DRRM program is considering the awareness of it.

**Table 3: Teachers' Level of Awareness on SBDRRMM when grouped according to the Socio-Demographic Profile**

| SBDRRMM | Socio-Demographic Profile | Chi -Square Value | df | p- value | Significance |
|---|---|---|---|---|---|
| Level of | Sex | 1.625 | 4 | .804 | Not Significant |

| | | | | | |
|---|---|---|---|---|---|
| Awareness | Civil Status | 2.590 | 12 | .998 | Not Significant |
| | Number of Years in Teaching Service | 9.298 | 12 | .677 | Not Significant |
| | Number of Related Trainings /Seminars | 7.190 | 12 | .845 | Not Significant |
| | Age | 2.914 | 12 | .996 | Not Significant |

*Legend: Significant at alpha.05 level of significance*

The computed value of Pearson Chi-Square between the teachers' socio-demographic profile and teachers' level of awareness on SBDRRMM shows that there is no significant relationship between the variables. This means that the level of awareness of the respondents on SBDRRMM are not affected by the teachers' sex, civil status, number of teaching service, number of attended seminars/trainings and age.

**Table 4: Significant Difference on Teachers' Level of Involvement on SBDRRMM when grouped according to the Socio-Demographic Profile**

| SBDRRMM | Socio- Demographic Profile | Chi -Square Value | df | p-value | Significance |
|---|---|---|---|---|---|
| Level of Involvement | Sex | 1.710 | 4 | .789 | Not Significant |
| | Civil Status | 4.544 | 12 | .972 | Not Significant |
| | Number of Years in Teaching Service | 8.231 | 12 | .767 | Not Significant |
| | Number of Related Trainings /Seminars | 10.860 | 12 | .541 | Not Significant |
| | Age | 2.307 | 12 | .999 | Not Significant |

*Legend: Significant at alpha.05 level of significance*

The computed value of Pearson Chi-Square between the teachers' socio-demographic profile and teachers' level of involvement on SBDRRMM shows that there is no significant relationship between the variables. This means that the level of awareness of the respondents on SBDRRMM are not affected by the teachers' sex, civil status, number of teaching service, number of attended seminars/trainings and age.

**Table 5: Significant Difference on Teachers' Level of Awareness and Teachers' Level of Involvement on SBDRRMM**

| SBDRRMM | Correlation Coefficient r | Interpretation | df | p-value | Interpretation |
|---|---|---|---|---|---|
| Level of Awareness | .806 | Strong positive correlation | 83 | (2-tailed) .000 | Significant |
| Level of Involvement | | | | | |

*Legend: Significant at alpha.05 level of significance*

As reflected in Table 5, the relationship of the variables was tested using Spearman-Rank Correlation Coefficient at.05 level of significance. The computed value of Spearman -Rank Correlation Coefficient is.806 which falls in positive and negative.80 in the correlation interpretation means strong, this result shows that there is a strong positive correlation between the teachers' level of awareness and teachers' level of involvement on SBDRRMM.

These findings mean that the level of awareness of the teachers on SBDRRMM directly affect to the teachers' level of involvement. The awareness on the indicators of the three pillars of the District 10 teachers matters to their involvement on it, this is due to the fact that when one is aware of things or idea, surely if it needs to perform, then one will be involved. This is supported by the study of Asio (2021) where he declares that there are significant differences in disaster awareness and level of compliance with disaster programs. Therefore, Suryaratri, Akbar, Ariyani, Purwalatia and Wahyuni (2020) specify that the higher the awareness, the higher the involvement to deal with disasters. This further confirms that if the respondent has a high level of awareness to the disaster, the same also happens to the involvement of that respondent.

## Conclusion

The results on the level of awareness of selected teachers on SBDRRMM described as high level indicates that there were certain indicators that needs to be addressed, this can be aided through conducting seminars or trainings related to disaster management for it to be successful. Similarly, on the level of involvement of selected teachers on SBDRRMM described as high level indicates that there were certain indicators that needs full attention and this can be done through

providing more resources or conducting hand-on demonstration on a particular skill especially on installing fire extinguisher, water source and other indigenous materials related to disaster.

Since there was a significant relationship between the awareness and involvement, then teachers must have the awareness of all the indictors so that they will become involve on it. To be successfully prepared, aware and involved, concerned efforts of the DepEd together with the Local Government Unit (LGU) are needed. SBDRRMM must be given priority by the DepEd, giving focus on school DRRM and conduct relevant activities are important to establish resilience in schools.

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