Awareness and Practice of Disaster Risk Reduction and Management:

Foundations for Teacher Training

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Abstract

With a focus on the four disaster themes of disaster rehabilitation and recovery, disaster response, disaster preparedness, and disaster prevention and mitigation, the study aims to investigate the degree of awareness and implementation of disaster risk reduction and management (DRRM) within the comprehensive school safety framework among secondary public school teachers. The study also aims to ascertain if awareness and DRRM implementation levels in educational contexts are significantly correlated. The respondents consisted of 236 secondary school teachers during the 2022-2023 academic year. The findings revealed that teachers did not demonstrate a strong level of awareness and implementation of DRRM within the comprehensive school safety framework across the four disaster themes. Although a significant correlation was confirmed between the level of awareness and the level of implementation of DRRM in school settings, the study highlights that this does not guarantee effective implementation of the four disaster themes by schools and teachers in practice.

Keywords: *Disaster risk reduction and management, Disaster prevention and mitigation, Disaster preparedness, Disaster response, Disaster rehabilitation and recovery.*

Introduction

Highlighted by their rising frequency and severity on a global scale is the necessity for preemptive steps to mitigate the effects of disasters. Disasters usually strike without warning, making preparedness and awareness important for everyone's security and safety. Etkin (2016) emphasizes that disaster management is a responsibility of governments, communities, and individuals, as disasters impact people regardless of their race, religion, or socioeconomic status.

The DRRM Act in the Philippines improves awareness and preparedness of disasters by aligning with international standards. By emphasizing student safety, curriculum integration, and efficient school management in disaster response, preparedness, prevention and mitigation, and rehabilitation and recovery, the Comprehensive School Safety Framework supports this (RA 10121, 2010; Comprehensive School Safety Framework 2015–2030; DepEd DO 37, 2015).

Teachers must enhance their awareness and implementation of disaster risk reduction and management in schools. Doing so enables them to reduce the impact of disasters, promote a culture of safety, and effectively prepare for and respond to risks, ensuring the continued delivery of quality education (UNESCO, 2014)

However, despite these efforts, schools often overlook their role in disaster risk reduction education (Macher, 2014; Canlas, 2016). Ganpatrao (2015) highlights that teachers lack sufficient knowledge and training in disaster management, emphasizing the need for capacity-building programs to strengthen disaster preparedness in schools.

Literature Review

Formulation of Disaster Risk Reduction and Management

Through strategic approaches to risk and vulnerability reduction, the Hyogo Framework for Action (HFA) 2005-2015 sought to improve disaster risk reduction. Supported by 168 UN Member States, it built on the Yokohama Strategy (1994) and addressed five key areas: governance and policy

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frameworks, early warning and risk evaluation, knowledge management, response effectiveness, and capacity building (UN General Assembly, 2015). Gullette (2013) and Ocampo (2015) added that the HFA emphasized integrating DRR into education and called for improved management practices, monitoring, and stakeholder coordination to address the gaps and challenges.

The Philippine Disaster Risk Reduction and Management General View

The Philippines is ranked third in the world for disaster risk (UNDRR, 2019), with a high vulnerability score of 25.14%. Considering the Philippines has advanced its disaster management through Republic Act 10121, brought about by events like Ondoy and Pepeng, and directing on risk reduction (DRRP Status Report, 2019), significant challenges continue. These include insufficient funding, technical insufficiency, and limited access to adapting the national DRRM structure at the local level (Paci-Green et al., 2020). The National DRRM Plan focuses on a proactive approach, emphasizing prevention, response, preparedness, and rehabilitation, but effective disaster management ultimately requires stronger coordination and greater investment in building local capabilities (NDRRMP, 2012).

Disaster Risk Reduction and Management in the Comprehensive School Safety Framework

With the importance of enhancing school infrastructure and integrating disaster risk reduction (DRR) education, as stressed by the Hyogo Framework for Action (2005–2015; Selby & Kagawa, 2012), the Philippines enacted Republic Act 10121. This brought to the promotion of the Comprehensive School Safety Framework, designed to strengthen school preparedness and safety by focusing on DRR education, emergency management, and safety (Escobar, 2021; SDRRM Manual Booklet I, 2015).

Despite these efforts, inadequate teacher training and limited resources remain significant barriers to effective implementation (Gubalane, 2015; Canlas, 2019; Aprontie et al., 2015). Aprontie et al. (2015) and Gullete (2013) noted a gap between DRR pedagogy and classroom practice, recommending disaster education integration into various subjects. However, Canlas (2019) and Curato (2015) observed that some teachers lack the understanding and training that is important in the effective implementation of DRR.

Awareness and implementation of the four disaster themes **in disaster risk reduction and management within   the comprehensive school safety framework**

Disaster Prevention and Mitigation Awareness and Implementation

Ganpatrao (2015) stressed that teachers' understanding of disaster management is key to student safety. UNESCO (2014) recommends incorporating realistic risks into curricula to bridge theory and practice. However, Tuswadi and Takehiro (2014) and Apronti et al. (2015) identified the gap as stemming from inadequate training and reliance on outdated materials. Cubillar et al. (2022) and Lopez et al. (2018) found that teachers often avoid disaster topics due to limited expertise.

Escobar (2021) emphasized the need for continuous evaluation and communication of disaster prevention and mitigation because of limited efforts initiated by schools. Schools outsource risk assessments frequently due to staffing constraints and technical skills (Cubillas et al., 2022; Kawasaki et al., 2022). Strong evidence is provided with a connection between implementation and awareness (Cominghud, 2020); however, it was pointed out that the ongoing challenges in integrating disaster risk education into classroom activities (Canlas, 2019).

Disaster Preparedness Awareness and Implementation

Ganpatrao (2015), as quoted by UNESCO (2014), teacher training in disaster management is necessary to increase awareness for student safety and stressed the importance of incorporating disaster education into school curricula. Ganpatrao (2015) and Tuswadi and Takehiro (2014) point out that teacher training needs to be improved to address the gap, whereas Apronti et al. (2015) stressed that resources for teaching are limited. Though acknowledging the importance of disaster education, Cubillas et al. (2013) and Lopez et al. (2018) spotlighted that teachers do not teach it due to a lack of interest and expertise. The School Disaster Risk Reduction and Management Booklet II (2015) underscores that risk mitigation and frequent safety evaluations in comprehensive disaster preparedness are important. Escobar (2021) stressed the need for continuous monitoring due to the moderate level of implementation, while Marcher (2014) pointed out a gap between awareness and readiness of teachers. Paci-Green (2020) and Lopez et al. (2018) agreed that disaster education delivery needs to be improved continuously. Manalo and Manalo (2020) support an interdisciplinary approach, while Cubillas et al. (2022) and Comighud (2020) emphasize the importance of digitizing school records and strengthening.

The School Disaster Risk Reduction and Management (SDRRM) plays a critical role in ensuring the safety of students and school staff. Yabut and Cresencio (2023) evaluated SDRRM across four key areas: coastal school safety procedures, risk reduction and resilience education, school disaster management, and safe learning facilities. The results revealed a significant gap in coastal school safety procedures due to its lowest rating. Nonetheless, it reflects a standard approach to disaster risk reduction, evidenced by the consistent implementation of SDRRM across schools. The study advocates for the consistent upholding of safety and preparedness standards.

Disaster Response Awareness and Implementation

UNESCO's A Teacher's Guide (2014) emphasizes the importance of teachers in disaster risk reduction education. It recognizes the need for instructors to practice disaster response skills regularly and provide trauma assistance to their students. Teachers must also incorporate disaster preparedness into courses and provide basic life support training, as mandated by Republic Act 10871 (Santos, 2017). However, Canlas (2019) and Violeta (2013) highlight shortcomings in disaster education integration across all subjects.

The SDRRM Manual Booklet II (2015) stresses the importance of rapid assessment, campus clean-up, and psychological support during disasters. Escobar (2021) found that the incomplete implementation of safety frameworks in disaster education is due to the absence of practical risk reduction measures. Comighud (2020) emphasizes the need for well-trained disaster teams and school administrators, citing the significant relationship between awareness and effective disaster response. Sufficient resource allocation and continuous training are essential to improving disaster education in schools.

Disaster Rehabilitation and Recovery Awareness and Implementation

Teachers and school administrators are obligated to develop safety plans, update strategies for risk reduction, and review disaster preparedness (Verna, 2015). However, Escobar (2021) found that disaster response plans, as perceived by teachers, are moderately effective, citing a gap in implementation. Marcher (2014) commented that limited training on disaster education and budget constraints are often overlooked in schools, leading local governments to frequently assume responsibility.

Disaster rehabilitation and recovery involve evaluating disaster plans and protocols, with teachers playing a key role (Santos & Arguilles, 2017). Escobar (2021) reported moderate implementation, citing inadequate training and resources. Cubillas (2018) found satisfactory disaster recovery efforts, though Tolentino (2021) noted that recovery remains less prioritized. Comighud (2020) emphasized the need for a systematic recovery approach and a dedicated DRRM team for effective implementation (Dominguez, 2014).

The Purpose of the Research

The purpose of this study is to look at the level of awareness and implementation of DRRM within the Comprehensive School Safety Framework, with a focus on the four disaster themes in schools. The study's findings will be used to develop targeted training programs for principals, school administrators, managers, and teachers.

The study aimed to answer the following questions:

1) What is the level of awareness of teachers on DRRM within the Comprehensive School Safety Framework in relation to:

Disaster Rehabilitation and Recovery.

Disaster Response.

Disaster Preparedness.

Disaster Prevention and Mitigation.

2) How do teachers implement DRRM within the Comprehensive School Safety Framework in relation to:

Disaster Rehabilitation and Recovery.

Disaster Response.

Disaster Preparedness.

Disaster Prevention and Mitigation.

3) Is there a significant correlation between the level of awareness and the level of implementation of DRRM in school settings?

Methodology

Research Design

The researchers conducted a descriptive study methodology and created a survey questionnaire, which was distributed to three public schools in the Philippines. The survey included 32 questions organized into four disaster-themed areas to measure teacher awareness and implementation of DRRM within the Comprehensive School Safety Framework.

Respondents

The study was conducted at public high schools during the academic year 2023-2024. Table 1 illustrates the study's population and respondents.

Table 1. Respondents of the Study

School	Population	Number of respondents
School A	205	80
School B	100	39
School C	300	117
Total	**605**	**236**

The respondents to the survey were high school teachers who had acquired one year or more of teaching experience, regardless of what subject they teach. The total number of respondents for the academic year 2023-2024 is 605. Using the Cochran formula for simple random sampling, 236 teachers were selected to participate in the study.

Instrument

The researcher's survey questionnaire, consisting of 32 questions, was developed based on related literature and sent to three experts in DRRM for validation. Two of the experts work with a DRRM-focused NGO, while the third is a professor at a prestigious university in the Philippines. Their feedback was incorporated into the final version of the questionnaire. To assess its reliability, Cronbach's Alpha was utilized, yielding a score of 0.967 for DRRM awareness, which indicates excellent reliability, and a score of 0.962 for DRRM implementation, also indicating excellent reliability. Therefore, the 32 questions created by the researchers were deemed suitable for their intended purpose.

Data Analysis Framework

Before conducting the study, the researchers sought ethical clearance from the University Research Ethics Committee to assist with data collection. The questionnaires were distributed to teachers with the approval of the school principals. Data was processed utilizing statistical methods, specifically the mean and Spearman Rank Correlation, to interpret the acquired information.

Results and Discussion

This section discusses the data collected, analyzed, and interpreted from high school teachers' questionnaires on their awareness and implementation of DRRM within the Comprehensive School Safety Framework, with a focus on the four disaster themes.

Table 2. Respondents' Assessment of the Level of Awareness in Relation to Disaster Prevention and Mitigation

Disaster Prevention and Mitigation	Mean	Verbal Interpretation
Developing hazard warning systems.	4.26	Strongly Aware

Joining building inspection, including safety and security.	3.99	Aware
Facilitating Multi-hazards risk assessment.	4.01	Aware
Developing Disaster Risk Reduction teaching and Curriculum materials.	4.04	Aware
Setting up the School DRRM Club for disaster management activities.	4.20	Aware
Facilitating/Co-facilitating Disaster Risk Reduction Management Training for students.	4.16	Aware
Organizing co-curricular activities on Disaster Risk Reduction Education.	4.05	Aware
Attending action-based and scenario-based training programs on disaster management best practices.	4.02	Aware
Grand Mean	**4.09**	**Aware**

Legend: Slightly Unaware (1.00 – 1.80), Unaware (1.81 – 2.60), Moderately Aware (2.61 – 3.40), Aware (3.41 – 4.20), Strongly Aware (4.21 – 5.00)

Table 2 presents a grand mean of 4.09, categorized as "Aware," indicating that teachers are generally aware of disaster prevention and mitigation. The highest rating, 4.26, was for developing hazard warning systems, indicating "Strongly Aware." This reflects the importance of disaster education in schools, as supported by Chung and Yen (2016) and Ganpatrao (2015), who emphasized the role of teacher attitudes in effective disaster management. Despite the integration of DRRM into the curriculum through DepEd Order No. 50, s. 2011, gaps in training and risk identification remained (Tuswadi & Takehiro, 2014; Gabion & Bernardino, 2022). Strengthening teacher capacity through collaborative efforts aligns with the Sendai Framework's goal of improving disaster preparedness and school safety.

Table 3. Respondents' Assessment of the Level of Awareness in relation to Disaster Preparedness

Disaster Preparedness	Mean	Verbal Interpretation
Conducting multi-hazard drills and evacuation simulations twice a year.	4.29	Strongly Aware
Supervising the conduct of the student-led risk hazards assessment.	4.15	Aware
Providing capacity-building activities on the four themes of disaster.	3.98	Aware
Inviting DRRM experts/community members to talk about DRRM issues in my class.	3.89	Aware
Teaching DRMM is recognizing the rights of the child.	4.12	Aware
Scanning student records /documents in compliance with the Data Privacy Act of 2012 and instructional materials for online access.	3.80	Aware
Empowering students with the right attitude and skills to equip them to act effectively during a disaster.	4.06	Aware
Integrating DRRM Education in subject lessons and different school programs to foster and sustain a culture of safety and preparedness.	3.97	Aware
Grand Mean	**4.03**	**Aware**

Legend: Slightly Unaware (1.00 – 1.80), Unaware (1.81 – 2.60), Moderately Aware (2.61 – 3.40), Aware (3.41 – 4.20), Strongly Aware (4.21 – 5.00)

Table 3 indicates that teachers are generally aware of disaster preparedness, with a grand mean of 4.03, classified as "Aware." The highest rating, 4.29, was for conducting multi-hazard drills, showing strong awareness of this practice. This aligns with Paci-Green et al. (2020), who stress the relevance of regular drills for preparedness. UNESCO (2014) highlights teachers' key role in ensuring student safety through DRRM education. However, Cubillas et al. (2022) noted that while teachers value student involvement in DRR planning, it is not given high priority. Strengthening teacher-led preparedness activities can enhance overall school safety.

Table 4. Respondents' Assessment of the Level of Awareness in Relation to Disaster Response

Disaster Response	Mean	Verbal Interpretation
Conducting first aid during a disaster.	4.26	Strongly Aware
Tracking affected students after a disaster.	4.10	Aware
Taking part in conducting the School Rapid Damage Risk Assessment.	4.07	Aware
Organizing a prompt monitoring of the impact of hazards on students.	4.05	Aware
Mobilizing the School DRRM Team for assistance.	4.20	Aware
Communicating to students the designated safe emergency exit from the classroom to a safe place.	4.17	Aware
Acting as the building guide and verifying that all classrooms have been evacuated	4.04	Aware
Establishing temporary learning environments and implementing different delivery methods of teaching.	3.98	Aware
Grand Mean	**4.11**	**Aware**

Legend: Slightly Unaware (1.00 – 1.80), Unaware (1.81 – 2.60), Moderately Aware (2.61 – 3.40), Aware (3.41 – 4.20), Strongly Aware (4.21 – 5.00)

Table 4 reveals that teachers are generally aware of disaster response activities, with a grand mean of 4.11, categorized as "Aware." The highest rating, 4.26, was for conducting first aid, reflecting a strong awareness of immediate response actions. Teachers demonstrate readiness to ensure student safety during emergencies, aligning with the DepEd IRR for RA 10871. Santos (2017) highlights the importance of training teachers in first aid and psychological support for trauma-affected students. Chung and Yen (2016) emphasize active learning to help students apply disaster response skills, while Selby and Kagawa (2012) stress the importance of regular practice to reinforce these skills.

Table 5. Respondents' Assessment of the Level of Awareness in Relation to Disaster Rehabilitation and Recovery

Disaster Rehabilitation and Recovery	Mean	Verbal Interpretation
Participating in reviewing school-based risk reduction plans.	4.01	Aware
Continuously observing students' behavior during and after a disaster.	3.96	Aware
Integrating the assessment results in school planning, e.g., retrofitting	3.86	Aware
Continuously teaching students some post-disaster coping mechanisms.	3.91	Aware
Evaluating the effectiveness of interventions provided before, during, and after a disaster.	3.89	Aware

Reviewing the application of safety protocols and preventive measures.	3.95	Aware
Providing psychosocial aid and support services to the students affected even after a disaster.	3.86	Aware
Participating in the analysis of historical records and government-endorsed hazard maps to develop feasible policies and programs for hazard-prone areas within the school.	3.84	Aware
Grand Mean	**3.91**	**Aware**

Legend: Slightly Unaware (1.00 – 1.80), Unaware (1.81 – 2.60), Moderately Aware (2.61 – 3.40), Aware (3.41 – 4.20), Strongly Aware (4.21 – 5.00)

Table 5 reveals that teachers are largely aware of disaster rehabilitation and recovery operations, with a grand mean of 3.91 indicating "Aware." The highest rating, 4.01, was for reviewing school-based risk reduction plans, reflecting teachers' involvement in post-disaster planning and support. However, gaps remain in integrating assessment results into planning and providing psychosocial support. Macher (2014) noted that disaster education is often seen as a government responsibility, while Paci-Green et al. (2020) highlighted the need for consistent teacher training in disaster recovery and psychosocial care. Strengthening teacher capacity in these areas can enhance student resilience and recovery.

Table 6. Respondents' Assessment of the Level of Implementation in Relation to Disaster Prevention and Mitigation

Disaster Prevention and Mitigation	Mean	Verbal Interpretation
Developing hazard warning systems.	3.68	Implemented
Joining a building inspection, including safety and security.	3.51	Implemented
Facilitating Multi-hazards risk assessment.	3.52	Implemented
Developing Disaster Risk Reduction teaching and Curriculum materials	3.61	Implemented
Setting up the School DRRM Club for disaster management activities.	3.78	Implemented
Facilitating/Co-facilitating Disaster Risk Reduction Management Training for students.	3.69	Implemented
Organizing co-curricular activities on Disaster Risk Reduction Education.	3.61	Implemented
Attending action-based and scenario-based training programs on disaster best management practices.	3.57	Implemented
Grand Mean	**3.62**	**Implemented**

Legend: Slightly Unimplemented (1.00 – 1.80), Unimplemented (1.81 – 2.60), Moderately Implemented (2.61 – 3.40), Implemented (3.41 – 4.20), Strongly Implemented (4.21 – 5.00)

Table 6 reveals that disaster prevention and mitigation techniques are widely adopted, with a grand mean of 3.62 indicating "Implemented." The highest rating, 3.78, was for setting up the School DRRM Team, highlighting strong engagement in disaster management activities. However, improving building inspections and training programs could enhance overall preparedness. Escobar (2017) emphasized the need for better teacher training and accurate information dissemination. Paci-Green et al. (2020) noted that limited staffing and resources hinder effective DRRM implementation, while Cubillas et al. (2022) and Kawasaki et al. (2022) highlighted that heavy workloads often cause teachers to deprioritize DRRM activities.

Table 7. Respondents' Assessment of the Level of Implementation in Relation to Disaster Preparedness

Disaster Preparedness	Mean	Verbal Interpretation
Conducting multi-hazard drills and evacuation simulations twice a year.	3.89	Implemented
Supervising the conduct of the student-led risk hazards assessment.	3.76	Implemented

Providing capacity-building activities on the four themes of disaster.	3.67	Implemented
Inviting DRRM experts/community members to talk about DRRM issues in my class.	3.57	Implemented
Teaching DRRM involves recognizing the rights of a child.	3.72	Implemented
Scanning student records /documents in compliance with the Data Privacy Act of 2012 and instructional materials for online access.	3.38	Moderately Implemented
Empowering students with the right attitude and skills to equip them to act effectively during a disaster.	3.56	Implemented
Integrating DRRM Education in subject lessons and different school programs to foster and sustain a culture of safety and preparedness.	3.44	Implemented
Grand Mean	**3.62**	**Implemented**

Legend: Slightly Unimplemented (1.00 – 1.80), Unimplemented (1.81 – 2.60), Moderately Implemented (2.61 – 3.40), Implemented (3.41 – 4.20), Strongly Implemented (4.21 – 5.00)

Table 7 reveals that disaster preparedness strategies are generally implemented, with a grand mean of 3.62, categorized as "Implemented." Regular drills (3.89) and student-led risk assessments (3.76) reflect strong preparedness efforts. However, the moderate implementation of scanning student records (3.38) highlights a gap in technological readiness. Manalo and Manalo (2020) emphasized the need to integrate DRRM education into school programs to enhance safety, while Paci-Green et al. (2020) noted that limited teacher training and funding hindered full implementation. Strengthening teacher capacity and improving digital record-keeping could further enhance disaster preparedness (Cubillas et al.,2020).

Table 8. Respondents' Assessment of the Level of Implementation in Relation to Disaster Response

Disaster Response	Mean	Verbal Interpretation
Conducting first aid during a disaster.	3.74	Implemented
Tracking affected students after a disaster.	3.73	Implemented
Taking part in conducting the School Rapid Damage Risk Assessment.	3.63	Implemented
Organizing a prompt monitoring of the impact of hazards on students.	3.61	Implemented
Mobilizing the School DRRM Team for assistance.	3.71	Implemented
Communicating to students the designated safe emergency exit from the classroom to a safe place.	3.62	Implemented
Acting as the building guide and verifying that all classrooms have been evacuated	3.62	Implemented
Establishing temporary learning environments and implementing different delivery methods of teaching.	3.55	Implemented
Average Mean	**3.65**	**Implemented**

Legend: Slightly Unimplemented (1.00 – 1.80), Unimplemented (1.81 – 2.60), Moderately Implemented (2.61 – 3.40), Implemented (3.41 – 4.20), Strongly Implemented (4.21 – 5.00)

Table 8 indicates that disaster response measures are effectively implemented, with a grand mean of 3.65, categorized as "Implemented." Key strengths include first aid (3.74), student tracking (3.73), and communication of escape routes (3.62). However, improving the setup of temporary learning spaces (3.55) could enhance educational continuity post-disaster. Santos and Argulles (2017) emphasized that teachers play critical roles as first responders and should be equipped to provide both physical and psychological support. Strengthening teacher training and improving post-disaster learning environments will further enhance overall disaster response readiness.

Table 9. Respondents' Assessment of the Level of Implementation in Relation to Disaster Rehabilitation and Recovery

Disaster Rehabilitation and Recovery	Mean	Verbal Interpretation
Participating in reviewing school-based risk reduction plans	3.66	Implemented
Continuously observing students' behavior during and after a disaster.	3.60	Implemented
Integrating the assessment results in school planning, e.g., retrofitting	3.54	Implemented
Continuously teaching students some post-disaster coping mechanisms.	3.59	Implemented
Evaluating the effectiveness of interventions provided before, during, and after a disaster.	3.52	Implemented
Reviewing the application of safety protocols and preventive measures.	3.53	Implemented
Providing psychosocial aid and support services to the students affected even after a disaster.	3.51	Implemented
Participating in the analysis of historical records and government-endorsed hazard maps to develop feasible policies and programs for hazard-prone areas within the school	3.44	Implemented
Grand Mean	**3.55**	**Implemented**

Legend: Slightly Unimplemented (1.00 – 1.80), Unimplemented (1.81 – 2.60), Moderately Implemented (2.61 – 3.40), Implemented (3.41 – 4.20), Strongly Implemented (4.21 – 5.00)

Table 9 shows that disaster rehabilitation and recovery efforts are effectively implemented, with a grand mean of 3.55, categorized as "Implemented." Strengths include reviewing risk reduction plans (3.66), monitoring student behavior (3.60), and providing psychosocial support (3.51). However, enhancing the use of historical data (3.44) to inform policy and improve strategies could strengthen overall recovery efforts. Escobar (2022) highlighted that teachers need more training to effectively implement recovery measures, while Paci-Green et al. (2020) stressed the importance of continuous planning and support to build a resilient school community.

Significant Correlation Between the Level of Awareness and Implementation of DRRM in School Settings

Table 10. Significant Correlation Between the Level of Awareness and Implementation of Disaster Prevention and Mitigation

Awareness of Disaster Prevention and Mitigation	Implementation of Disaster Prevention and Mitigation				Remarks
	Correlation coefficient	Interpretation	p-value	Decision	
	0.442	Weak Positive Correlation	0.000	Reject Ho	Significant

Note: *Reject the null hypothesis (Ho) if the p-value is 0.05 or lower; otherwise, do not reject Ho.*

Table 10 shows a statistically significant but weak positive association (r = 0.442, p = 0.000) between awareness and implementation of disaster prevention and mitigation. This suggests that increasing awareness alone does not necessarily lead to better implementation. Cubillas et al. (2022) noted that awareness of disaster guidelines does not guarantee effective practice, as institutional structures and cultural factors also play a role. Policy changes require more than evidence alone; practical support and institutional alignment are crucial for improving DRR outcomes, as emphasized by Paci-Green et al. (2020).

Table 11. Significant Correlation Between the Level of Awareness and Implementation of Disaster Preparedness

Awareness of Disaster Preparedness	Implementation of Disaster Preparedness				Remarks
	Correlation coefficient	Interpretation	p-value	Decision	
	0.491	Weak Positive Correlation	0.000	Reject Ho	Significant

Note: If the p-value is 0.05 or lower, reject the null hypothesis (Ho); otherwise, do not reject Ho.

Table 11 shows a significant but small positive connection between disaster preparedness awareness and implementation (r = 0.491, p = 0.000). This means that while increasing awareness is important, it alone is not enough to ensure effective implementation. The need for comprehensive strategies combining educational efforts with practical support to strengthen disaster preparedness at all levels was emphasized by Comighud (2020).

Table 12. Significant Correlation Between the Level of Awareness and Implementation of Disaster Response

Awareness of Disaster Response	Implementation of Disaster Response				Remarks
	Correlation coefficient	Interpretation	p-value	Decision	
	0.513	Moderate Positive Correlation	0.000	Reject Ho	Significant

Note: If the p-value is 0.05 or lower, reject the null hypothesis (Ho); otherwise, do not reject Ho.

Table 12 demonstrates a moderately positive connection (r = 0.513, p = 0.000) between disaster response implementation and awareness, suggesting that improved response practices are a direct result of increased awareness. However, Numada (2021) stressed that effective disaster response requires more than awareness, including proper resources, training, and institutional support. Esposito (2024) highlighted the need for training programs that combine awareness with practical skills to enhance disaster management.

Table 13. Significant Correlation Between the Level of Awareness and Implementation of Disaster Rehabilitation and Recovery

Awareness of Disaster Rehabilitation and Recovery	Implementation of Disaster Rehabilitation and Recovery				Remarks
	Correlation coefficient	Interpretation	p-value	Decision	
	0.460	Weak Positive Correlation	0.000	Reject Ho	Significant

Note: Reject the null hypothesis (Ho) if the p-value is 0.05 or lower; otherwise, do not reject Ho.

Table 13 shows a weak positive association (r = 0.460, p = 0.000) between awareness and disaster rehabilitation and recovery implementation, implying that awareness alone has a limited impact on effective disaster risk reduction. Successful rehabilitation requires more than awareness, including adequate resources, technical expertise, and long-term planning. The Global Assessment Report on DRR (2019) highlights the need for a multi-sectoral approach, combining capacity-building, policy support, and infrastructure development to enhance recovery efforts.

Conclusion and Recommendations

Conclusion

While teachers demonstrated a moderate level of awareness and implementation of DRRM across the four disaster themes, disaster rehabilitation and recovery, disaster response, disaster preparedness, and disaster prevention and mitigation, there is still a gap in translating awareness into effective practice. While there is a notable correlation between awareness and implementation, the weakness of this relationship in these areas highlights that there is no guarantee of effective

implementation with increased awareness alone. Factors such as insufficient resources, lack of technical expertise, and limited training affect the practical application of DRRM strategies in school settings. On the other hand, a more integrated and collaborative strategy is pivotal for strengthening disaster management procedures in educational institutions.

Recommendations

Addressing the identified gaps necessitates many key actions: (1) The Department of Education school administrators may create and implement significant DRRM training programs for teachers, highlighting technical skills and practical application in all four disaster themes through simulations, scenario-based exercises, and drills. (2) Sufficient funds and resources may be allocated to improve the availability of DRRM materials and support the development of disaster response and recovery infrastructure. (3) Schools may consider implementing assessment and systematic monitoring to measure the success of the DRRM vision and drive ongoing improvement. (4) Establishing strong coordination with local government units, such as NGOs, and the local community is crucial for a long-term DRRM structure. (5) Integrating DRRM education into the curriculum will surely strengthen a culture of resilience and preparedness among students and staff.

List of Abbreviations

DRR – Disaster Risk Reduction

DRRM – Disaster Risk Reduction and Management

CSSF – Comprehensive School Safety Framework

DepEd – Department of Education

RA – Republic Act

NDRRMP – National Disaster Risk Reduction and Management Plan

UNESCO – United Nations Educational, Scientific and Cultural Organization

UNDRR – United Nations Office for Disaster Risk Reduction

NGO – Non-Governmental Organization

Transparency: The authors attest that the text is a truthful, accurate, and open description of the study, that no important aspects of the study have been left out, and that any deviations from the intended study have been explained. All ethical guidelines were adhered to when authoring this study.

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