A LOCALIZED STUDY ON DISASTER PREPAREDNESS OF SECONDARY STUDENTS IN RIZAL, ZAMBOANGA DEL NORTE USING THE FAMILY PREPAREDNESS PLAN TOOL

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Abstract

This study assessed the level of disaster preparedness among students of Colegio de San Francisco Javier in Rizal, Zamboanga del Norte. Anchored in Bronfenbrenner's Ecological Systems Theory and the Protective Action Decision Model, the study examined four key domains of preparedness: assessment and planning, physical and environmental protection, response capacity (skills), and response capacity (supplies). Using a descriptive quantitative research design, data were gathered from 186 randomly selected students out of a total population of 348 through the standardized Family Preparedness Plan Tool developed by the Department of Education. Results showed high preparedness in terms of emergency supplies (87.8%) and response skills (84.4%) but lower levels in planning (72.7%) and physical protection (68.6%). The study concluded that while students are individually prepared, household-level engagement and structural safety require further reinforcement. Recommendations include integrating disaster planning into classroom activities, institutionalizing emergency drills, and strengthening community-based disaster risk reduction and management (DRRM) initiatives. This research aligns with the Philippine Disaster Risk Reduction and Management Act (RA 10121), the DepEd DRRM Framework, and Sustainable Development Goal 13, focusing on climate resilience.

Keywords: *Disaster Preparedness, School-based DRRM, Family Preparedness Plan Tool, Emergency Readiness, DepEd DRRM Framework, Protective Action Decision Model, Ecological Systems Theory*

Introduction

In an archipelagic country like the Philippines—regularly confronted by typhoons, floods, earthquakes, and volcanic eruptions—disaster preparedness is not a luxury but a necessity. Both international and national frameworks have emphasized the urgency of strengthening disaster resilience. At the global level, Sustainable Development Goal (SDG) 13: Climate Action calls for nations to "strengthen resilience and adaptive capacity to climate-related hazards and natural disasters" (United Nations, 2015). Complementing this is the Sendai Framework for Disaster Risk Reduction 2015–2030, which outlines priorities for preventing new risks and reducing existing ones by enhancing preparedness through education and awareness (UNDRR, 2015).

In response, the Philippine government institutionalized the Philippine Disaster Risk Reduction and Management Act of 2010 (RA 10121), mandating proactive and comprehensive approaches to risk management. For children and youth—among the most vulnerable sectors—additional protection is offered through laws such as the Special Protection of Children Against Abuse, Exploitation and Discrimination Act (RA 7610) and Republic Act No. 10821, which outlines the Emergency Relief and Protection of Children Before, During, and After Disasters. At the educational level, the Department of Education's Comprehensive School DRRM Framework (DepEd Order No. 50, s. 2015) and CHED Memorandum Order No. 20, s. 2013 ensures that disaster education and environmental literacy are institutionalized in both basic and higher education.

Aligned with the Harmonized National Research and Development Agenda (HNRDA) 2022–2028 under the Disaster Risk Reduction and Climate Change thematic area, this study seeks to localize DRRM research by examining the level of disaster preparedness among students in Colegio de San Francisco Javier, a private educational institution in Rizal, Zamboanga del Norte. Despite policy advancements, recent studies suggest that student readiness, especially at the household level, remains inconsistent due to socio-economic constraints and limited family engagement (Matunhay, 2022; Bollettino et al., 2020). Understanding the preparedness levels of students in rural communities thus fills an important knowledge gap and informs localized, school-led interventions.

This study employed a descriptive quantitative research design using the standardized Family Preparedness Plan Tool from the DepEd School DRRM Manual. A sample of 186 students was selected from a population of 348 using Slovin's formula and simple random sampling, ensuring representativeness at a 95% confidence level. The data were analyzed using descriptive statistics, specifically frequency counts and percentages, across four core domains: (1) assessment and planning, (2) physical and environmental protection, (3) response skills, and (4) emergency supplies.

Findings revealed that students were most prepared in terms of emergency supplies (87.8%) and skills (84.4%), particularly in executing drills, understanding early warnings, and accessing hygiene kits and food. However, notable gaps emerged in household planning (72.7%) and physical safety measures (68.6%), such as structural home

preparedness and evacuation planning with families. These disparities highlight the disconnect between school-based awareness and household implementation.

In light of these findings, the study recommends (1) integrating family disaster planning into classroom and homeroom activities, (2) enhancing awareness of physical protection measures, (3) institutionalizing skills-based training like fire suppression and first aid, (4) facilitating emergency go-bag distribution to disadvantaged students, and (5) strengthening school-community partnerships to institutionalize DRRM practices beyond the classroom. These recommendations not only support national policies, such as RA 10121 and the Basic Education Disaster Risk Reduction and Management (DRRM) Framework but also advance broader global goals on climate resilience and community empowerment.

In sum, this research contributes to the ongoing discourse on disaster education and risk reduction by providing empirical data from a localized school context. It reaffirms the crucial role of educational institutions in fostering a culture of preparedness and resilience—not only within the school but in every household it touches.

Materials and Methods

Research Design

This study adopted a descriptive quantitative research design deemed appropriate for systematically assessing the disaster preparedness levels of students through measurable indicators. The design enabled the researchers to quantify student responses across four dimensions of preparedness—assessment and planning, physical and environmental protection, response capacity (skills), and response capacity (supplies)—using a validated instrument. The use of a non-experimental, cross-sectional design was intentional to capture preparedness status at a single point in time, which is consistent with studies in school-based disaster risk reduction and management (DRRM) research (e.g., Seddighi, 2020; Patel et al., 2023).

Participants and Sampling Technique

The participants of the study were Grade 7 to Grade 12 students of Colegio de San Francisco Javier in Rizal, Zamboanga del Norte, for the academic year 2023–2024. Based on school enrollment records, the total student population was 348.

To ensure representativeness while maintaining statistical rigor, the researchers used Slovin's formula to determine the minimum required sample size at a 95% confidence level and a 5% margin of error, resulting in a required sample size of 186 students.

A simple random sampling technique (lottery method) was applied to ensure that each student had an equal and independent chance of being selected, eliminating sampling bias and improving generalizability within the school context. To enhance

representativeness, proportional stratification by grade level was employed prior to randomization.

Research Instrument

The primary data-gathering instrument was the Family Preparedness Plan Tool, adopted from the Department of Education's School Disaster Risk Reduction and Management Manual – Booklet 2. This tool was specifically developed to assess household disaster readiness and is aligned with the Comprehensive Disaster Risk Reduction and Management (DRRM) Framework in basic education. The instrument comprises four domains:

1. Assessment and Planning – Evacuation, communication plans, document readiness, and reunification strategies.
2. Physical and Environmental Protection – Home safety measures, hazard mitigation, and fire/flood risk reduction.
3. Response Capacity: Skills – First aid, fire suppression, emergency drills, and early warning comprehension.
4. Response Capacity: Supplies – Availability of food, water, hygiene kits, medications, emergency documents, and tools.

Each item required a dichotomous response (i.e., "Yes" or "No"). This format enhanced data clarity and facilitated the use of frequency-based statistical analysis. To ensure transparency and consistency, instructions and definitions were provided prior to administering the instrument.

Validity and Reliability

The instrument's content validity was ensured through its official adoption by the Department of Education, following expert review and alignment with relevant policies. As this tool was standardized for national use, its items reflect best practices in Disaster Risk Reduction and Management (DRRM) education and align with Republic Act (RA) 10121, DepEd Order No. 50, s. 2015, and CHED CMO No. 20, s. 2013. Although the study did not compute internal consistency coefficients (e.g., Cronbach's alpha), the reliability was inferred based on its institutional acceptance and prior successful use in school-based DRRM initiatives. To further strengthen its application, a dry-run orientation was conducted with 10 non-participant students to validate the clarity and cultural relevance of terms.

Data Gathering Procedure

The researchers adhered to strict ethical procedures throughout the data collection process. After securing approval from the school principal and research coordinator, parental consent and student assent forms were distributed and collected. Participants were informed about the purpose of the study, the voluntary nature of their participation, and the confidentiality of their data.

Survey administration occurred during class hours in a supervised setting to ensure attentiveness and data quality. Class advisers assisted in monitoring compliance without influencing responses. Completed questionnaires were immediately reviewed for completeness and securely stored for encoding.

Data Analysis

The responses were encoded using Microsoft Excel and subjected to descriptive statistical analysis. For each item, the frequency and percentage of "Yes" (prepared) and "No" (not prepared) responses were computed. The preparedness level per domain was determined by computing the mean percentage of affirmative responses across all items under each category. A summary table was generated to allow cross-domain comparison of preparedness levels.

The decision to use descriptive statistics was aligned with the study's aim of establishing preparedness status rather than inferring causality. This approach is common in DRRM baseline assessments (World Bank, 2017; Harvard Humanitarian Initiative, 2020), particularly when guiding institutional program enhancements.

Ethical Considerations

This study strictly followed standard ethical guidelines in conducting research involving student participants. Prior to data collection, formal approval was secured from the school administration to ensure institutional compliance. Informed consent from parents or guardians, as well as assent from the students, was obtained after the study's purpose, procedures, and voluntary nature were clearly explained. Participants were assured of their right to withdraw at any time without penalty. These steps were taken to uphold the ethical principles of autonomy, respect, and informed participation.

The research instrument used was an official tool adopted from the Department of Education and was deemed appropriate and safe for student respondents. It posed no physical, emotional, or psychological harm. All data collected were handled with strict confidentiality and used solely for academic purposes. Personal information was anonymized, and access to data was limited to the researcher. The entire study was conducted in alignment with national and institutional ethical standards, ensuring the protection of participants' rights, privacy, and overall well-being.

Results and Discussion

Summary of Preparedness Levels per Area

Preparedness Area	Average Yes (%)	Average No (%)
Assessment and Planning	72.7%	27.3%
Physical and Environmental Protection	68.6%	31.4%

Response Capacity: Skills	84.4%	15.6%
Response Capacity: Supplies	87.8%	12.2%

The summarized data indicate that students exhibit the highest levels of preparedness in the domains of response capacity, both in terms of skills (84.4%) and supplies (87.8%). These figures reflect a strong emphasis on equipping learners with practical knowledge and accessible resources for immediate disaster response. High ratings in these domains suggest that schools have been successful in institutionalizing basic Disaster Risk Reduction and Management (DRRM) competencies, particularly through drills, training sessions, and preparedness kits that translate into tangible household practices.

However, the data also reveal evident gaps in the more strategic and structural dimensions of preparedness. Assessment and planning recorded a lower average of 72.7%, while physical and environmental protection posted the lowest at 68.6%. These domains, which involve proactive household planning, structural safety measures, and long-term risk mitigation strategies, are the least developed. This indicates that while students may know how to respond during emergencies, their homes and families may not be fully equipped or regularly engaged in disaster planning and safety assessments. The relatively low figure for physical and environmental protection is particularly concerning, as it reflects a vulnerability in infrastructure safety—such as poorly secured furniture or lack of adherence to building codes—which could severely impact survival during high-risk events.

The disparity between operational readiness (skills and supplies) and strategic readiness (planning and physical protection) underscores a common challenge in disaster education: the gap between knowledge and practice. This suggests that current DRRM initiatives, while effective in school-based contexts, may not be sufficiently integrated into the broader community and household levels. There is a critical need to complement school-centered efforts with community engagement programs, parent-inclusive planning activities, and stronger collaboration with local government units and non-government organizations.

Furthermore, this trend aligns with national observations noted by the World Bank (2017) and DepEd (2019), which highlight that while awareness and disaster risk reduction and management (DRRM) instruction are improving in educational settings, integration at the family and infrastructure levels remains weak. These findings support calls for a more holistic approach to disaster preparedness—one that goes beyond individual capacity and includes structural reinforcements, community-based planning, and policy-driven initiatives. Ultimately, these results provide strong empirical support for scaling up school-based DRRM frameworks into broader household and community resilience efforts.

Conclusion

This study assessed the level of disaster preparedness among students of Colegio de San Francisco Javier in Rizal, Zamboanga del Norte, by examining four key dimensions: assessment and planning, physical and environmental protection, response capacity

(skills), and response capacity (supplies). The results revealed that while students demonstrated high levels of preparedness in terms of emergency skills (84.4%) and supplies (87.8%), notable gaps persist in planning (72.7%) and physical protection (68.6%). These findings suggest that although schools are effective in instilling individual preparedness knowledge and competencies, household-based planning and infrastructure-related safety measures require further reinforcement.

Data gathered using the Family Preparedness Plan Tool from the DepEd DRRM Manual confirmed that while most students are familiar with evacuation protocols, emergency contacts, and survival kits, fewer are engaged in regular disaster planning with their families or live in structurally secure homes. These disparities reflectreflect broader socio-economic conditions and highlight the critical need for localized and school-led Disaster Risk Reduction and Management (Disaster Risk Reduction and Management (DRRM)) initiatives that extend into homes and communities.

In conclusion, disaster preparedness among students is highest in domains that require individual action but lowest in areas that demand collective planning or material investment. Thus, the school plays a pivotal role not only as a learning environment but also as a conduit for household and community-level disaster resilience. The study recommends intensified Disaster Risk Reduction and Management (DRRM) integration into academic programs, strengthened home-school coordination, and targeted interventions to address infrastructure and resource gaps, all in alignment with national policy and the United Nations (UN) Sustainable Development Goals.

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Disclosure: Use of AI Tools

Artificial Intelligence tools, including ChatGPT by OpenAI, were utilized during the preparation of this work. These tools were used for purposes such as idea generation, editing assistance, language refinement, and formatting suggestions. All final decisions regarding content and structure were made by the author, ensuring that the work reflects original thought and intent.

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