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DRRM [illegible]gram implementation in the Schools Division of the [illegible]tac: An examination of current practices and [illegible]d challenges

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Leadership styles and innovative work behavior: Examining the relationships between bureaucratic leadership, transformational leadership, and employee outcomes

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ABSTRACT

Disaster Risk Reduction and Management (DRRM) plays a vital role in ensuring school safety and preparedness among learners and stakeholders. This study examined the implementation, practices, and challenges of DRRM programs in the Schools Division of the City of Batac, focusing on existing challenges and support mechanisms that strengthen disaster preparedness. A qualitative research design was utilized through responses gathered from DRRM Coordinators. Findings revealed that students demonstrate leadership and responsibility by actively participating in drills, emergency simulations, and awareness campaigns. However, challenges such as low student participation, unserious behavior during activities, limited resources, insufficient facilities, and lack of continuous training affect the effective implementation of DRRM programs. Despite these concerns, the presence of sufficient emergency equipment, continuous capacity-building initiatives, and partnerships with local DRRM offices significantly contribute to improving school preparedness. The study highlights the importance of strengthening stakeholder collaboration, enhancing student engagement, and

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ABSTRACT

The study examined the impact of bureaucratic and transformational leadership styles on employees' innovative work behavior within the institution. To strengthen the foundation of the research, relevant literature was reviewed. A descriptive and correlational research design was employed, involving all employees of the Divine Word College of Laoag, with data collected through a validated questionnaire and analyzed using ANOVA.

The findings showed that both bureaucratic and transformational leadership styles, as well as innovative work behavior, were rated highly by employees. However, despite these high ratings, regression analysis revealed no significant relationship between the two leadership styles and innovative work behavior, leading to the rejection of the study's hypothesis. This suggests that even when leadership is perceived positively, it does not necessarily translate into increased innovative behavior among employees.

The study acknowledges its limitations, particularly its focus on a single institution and a limited population. Future research is recommended to involve a larger and more diverse sample, as well as to explore additional factors—such as self-efficacy and psychological capital—that may influence innovative work behavior.

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Introduction

upend social systems, and disrupt continuity of learning. To address these ongoing risks, the Philippine Congress passed the Philippine Disaster Risk Reduction and Management Act of 2010 (RA No. 10121), which institutionalizes comprehensive disaster risk management policies across all government agencies, requiring them to incorporate risk reduction strategies, as well as preparedness and response provisions, at all organizational levels. This legislative context emphasizes the need for resilient strategies in the education sector to protect students, staff, and school communities.

Within the Department of Education (DepEd), DRRM is operationalized through a suite of policy directives that guide the systematic implementation of disaster resilience practices in schools. DepEd Order No. 50, s. In 2011, the Disaster Risk Reduction and Management Office (DRRMO) — later elevated into the Disaster Risk Reduction and Management Service (DRRMS) — was established as the central unit responsible for coordinating DRRM, Climate Change Adaptation (CCA), and Education in Emergencies (EiE) initiatives across all DepEd offices and schools. The Department of Education encourages staff, students, and stakeholders to maintain safety and educational continuity in the face of danger, a responsibility of the DRRMS. DepEd Order No. 21, s. 2015 outlines procedures for coordinated action and effective information flow across regional, division, and school levels before, during, and following disaster events, and is further clarified in 2015. Moreover, DepEd Order No. 37, s. 2015, known as The Comprehensive Disaster Risk Reduction and Management in Basic Education Framework, institutionalizes DRRM practices, systems, and structures that support curriculum integration, safe learning environments, and school disaster management.

The four thematic areas highlighted in national DRRM frameworks—prevention and mitigation, preparedness, response, and recovery and rehabilitation activities—are all included in these policy tools, which together demonstrate the DepEd's dedication to integrating disaster resilience as a fundamental component of the basic education system (Castillo, Deleon III & Delgado, 2024). To safeguard students and staff and maintain instruction during emergencies, the Comprehensive DRRM Framework explicitly directs schools to implement systematic risk assessment, planning, capacity-building, and emergency preparedness measures.

Even with these departmental and national policies in place, there remains an uneven translation of directives into practice at the division and school levels. While some schools exhibit high levels of preparedness and systematic practices, others face major challenges like limited resources, inadequate training for DRRM coordinators, and coordination issues with local stakeholders, according to empirical studies on school DRRM implementation in various Philippine localities. These studies highlight how local contexts, institutional capacity, and stakeholder engagement play a major role in the operationalization of DRRM programs, even in the presence of explicit policy mandates (Batallones, 2025).

Despite the growing body of literature on school-based Disaster Risk Reduction and Management (DRRM) in the Philippines, existing studies have predominantly focused on measuring implementation levels and preparedness, and on examining their relationship to school performance, using quantitative and descriptive-correlational designs (Tesora, 2022). However, such approaches often emphasize numerical assessments and generalized findings, thereby providing limited insight into how DRRM

policies are interpreted, negotiated, and enacted within specific school contexts. Furthermore, while some research has begun to acknowledge contextual and institutional variations, there remains insufficient localized, in-depth exploration of how DRRM coordinators experience implementation challenges and adapt their strategies in real-world school settings (Aborque & Medino, 2025). This indicates a clear gap in qualitative, context-sensitive research that captures the lived experiences, decision-making processes, and institutional dynamics influencing DRRM implementation at the ground level.

Hence, this study examines the procedures and challenges involved in implementing the school-based DRRM program in the City of Batac Schools Division in light of these factors. The research aims to contribute to policy discussions and institutional strategies to strengthen disaster resilience and educational continuity in basic education settings by analyzing current practices, institutional arrangements, and obstacles to effective implementation.

Review of related literature

School-Based Disaster Risk Reduction and Management (DRRM) programs in the Philippines are rooted in the recognition that schools serve as both educational institutions and community safety centers, particularly in a country highly vulnerable to natural hazards. National policies such as the Comprehensive Disaster Risk Reduction and Management in Basic Education Framework institutionalize DRRM within school governance by integrating preparedness, mitigation, response, and recovery into everyday school operations (Department of Education, 2015). Recent Philippine literature emphasizes that DRRM in schools is not merely a technical system of protocols but a socially constructed process shaped by leadership, school culture, teacher engagement, learner participation, and community relationships (Gaillard & Mercer, 2013; UNESCO, 2017). From a qualitative perspective, DRRM is viewed as a lived institutional practice in which meanings, beliefs, and experiences shape how disaster preparedness is understood and enacted in school communities.

Theoretical foundations of school-based Disaster Risk Reduction and Management (DRRM)

The theoretical foundations of School-Based Disaster Risk Reduction and Management (DRRM) are grounded in Resilience Theory, which explains how people, institutions, and communities respond to disaster impacts by anticipating, enduring, and adapting their methods and returning to their original state. Schools function as active educational organizations because resilience theory views them as dynamic social systems that develop their capacity through disaster preparedness activities, capacity-building programs, and group initiatives (Masten, 2014; Norris et al., 2008). Resilience develops in educational settings through disaster education and preparedness programs and community involvement, which enable students, teachers, and school administrators to participate in disaster risk reduction activities rather than merely waiting for assistance (UNESCO, 2012). The theoretical framework shows that disaster preparedness requires technical skills alongside social and psychological competencies, which encompass three essential elements of school-based disaster risk reduction management.

Social-Ecological Systems Theory explains disaster risk through the interaction between human systems and environmental systems. The theory demonstrates that both natural hazards and governance systems, socio-economic factors, cultural traditions, and resource availability shape vulnerability and risk (Bronfenbrenner, 1979; Folke, 2006). Schools operate as part of broader community and governance systems according to this framework, which identifies disaster risk reduction as a duty to be shared among families, local communities, municipal governments, and national organizations (UNDRR, 2015). The implementation of school-based DRRM requires coordination across multiple levels and engagement with the community, as disaster preparedness must connect with social networks and institutional relationships that extend beyond the school environment.

The incorporation of disaster risk reduction management into educational systems is theoretically supported by Constructivist Learning Theory, which holds that students build knowledge through experience, social interaction, and introspection (Piaget, 1970; Vygotsky, 1978). Experiential learning methods, which include drills and simulations, hazard mapping, evacuation planning, and community disaster activities, enable learners to build practical skills while developing risk knowledge in line with disaster education. Constructivism asserts that students gain lasting, valuable disaster preparedness knowledge through active participation in authentic situations, enabling them to apply it. The theoretical foundation supports school-based disaster risk reduction management, which uses student-centered and participatory methods.

The Whole-School Approach serves as a primary theoretical foundation for school-based DRRM because it establishes disaster risk reduction as a comprehensive organizational responsibility that requires leadership support, curriculum development, physical infrastructure construction, policy development, and community engagement (UNESCO, 2014). The approach demonstrates the application of systems theory through its assessment of schools as interconnected systems that require the establishment of a safety culture, leadership commitment, and active stakeholder participation for their DRRM programs to succeed in the long term (Gairín et al., 2013). The whole-school framework requires that DRRM operations become integral to both school management and standard school activities, as this approach demands continuous institutional development.

The theoretical frameworks of resilience theory, together with social-ecological systems theory, constructivist learning theory, and whole-school approach, establish a complete theoretical framework that supports School-Based DRRM. The disaster risk reduction process operates as a social, educational, and institutional process, according to these sources published by UNDRR and UNESCO in 2015 and 2014, respectively. The theories support qualitative research methods that investigate stakeholder perspectives, school operations, administrative responsibilities, and the obstacles encountered during DRRM implementation. The research provides strong theoretical support for how educational institutions build disaster readiness capabilities and adapt to diverse challenges while maintaining effective risk management practices in natural educational environments.

DRRM practices and implementation in school settings

Disaster Risk Reduction and Management (DRRM) in educational institutions involves various strategies to reduce vulnerability, improve readiness, and ensure that learning communities can respond

effectively during crises. In numerous schools across the Philippines, implementing DRRM involves organized activities such as creating hazard maps, collaborating with stakeholders, allocating budgets for DRRM initiatives, and encouraging student-led projects that seek to reduce risks and foster resilience within the school setting (Arcegono et al., 2025). These activities demonstrate an understanding of disaster risks and a dedication to integrating DRRM into everyday school operations.

Empirical studies show that the degree of DRRM implementation can vary notably among schools, with some exhibiting strong compliance across DRRM thematic areas, whereas others show deficiencies in specific elements. Research on public high schools during the COVID-19 pandemic revealed that disaster prevention, preparedness, response, and recovery measures were implemented at elevated levels, indicating that certain schools successfully adhered to established DRRM standards (Pandapatan, 2024). These results emphasize how schools incorporate essential DRRM functions into daily routines, especially when outside factors like a public health emergency increase the demand for readiness.

Studies on implementation in different areas also highlight notable strengths and ongoing challenges in school DRRM practices. A study in the Southern Conner District of Apayao indicated a significant level of DRRM integration and implementation, where the degree of training and teacher engagement showed a positive relationship with the extent of DRRM activities in classroom settings and school functions (Batallones, 2025). Similarly, research in the Southeast Butuan District revealed that even with active preparedness measures, challenges such as inadequate DRRM training, resource limitations, and difficulties conducting regular drills persisted, undermining the sustainability of risk reduction initiatives (Luminarias & Liquido, 2025).

Additionally, research on DRRM initiatives across various divisions shows how schools integrate risk reduction management into their curricula and everyday activities, but obstacles persist in fully implementing these programs. A study in the Alfonso Lista District showed that although schools effectively created safe learning spaces and incorporated DRRM into their curricula, preparedness efforts are still developing, suggesting that institutional capacity and staff understanding are vital for effective implementation (Dela Cruz & Ormilla, 2022). These results strengthen the idea that DRRM implementation in schools goes beyond merely following policies to include ongoing enhancement, education, and community involvement.

Overall, DRRM implementation in school settings demonstrates both **progress and variability,** shaped largely by institutional commitment, resource availability, and stakeholder involvement. The body of research shows that where DRRM practices are well supported—through teacher training, clear DRRM plans, and active participation by school communities—schools tend to exhibit higher levels of preparedness and resilience, whereas gaps in funding, training, and resources hinder the comprehensive implementation of DRRM. Continued research and targeted interventions are therefore critical to strengthening DRRM practices across diverse educational contexts.

Challenges and barriers to effective school-based DRRM

School-centered disaster risk reduction and management (DRRM) safeguards students, educators, and educational infrastructure against all natural and human-made calamities. The effective implementation

of school-centered disaster risk reduction management initiatives encounters ongoing operational obstacles stemming from systemic shortcomings and insufficient funding. The systematic review on disaster management functions in schools indicates that financial constraints, logistical issues, and inadequate regulatory frameworks collectively hinder institutions from implementing their emergency response training programs and enhancing safety systems. Current challenges undermine institutional resilience and hinder comprehensive safety improvement initiatives within educational institutions.

The implementation issues encountered in these studies are further supported by several empirical investigations conducted in the Philippine context. A study on DRRM readiness in elementary schools of Southeast Butuan District uncovered significant obstacles, including inadequate training and education on DRRM concepts, low awareness of DRRM principles among important stakeholders, budgetary and resource limitations for preparedness initiatives, and challenges in acquiring and upkeeping necessary equipment and supplies (Luminarias & Liquido, 2025). The challenges schools face with their safety plans result in two issues: they impede regular drill activities and complicate the execution of safety measures in line with their protocols.

Awareness barriers, combined with knowledge barriers, pose significant challenges that hinder schools from establishing efficient disaster risk reduction management systems. Research conducted at Carcar Central Elementary School revealed that respondents' inadequate understanding of DRR measures and their associated roles significantly contributed to low implementation rates, highlighting that gaps in knowledge among teachers, administrators, and student leaders can directly impede the program's success. The study on challenges in disaster education indicates that schools face significant obstacles in implementing disaster risk reduction (DRR) programs due to the need for better integration of DRR content into the curriculum, inadequate instructional materials, insufficient teacher training, and curriculum designs that impose excessive learning demands (Magnaye, 2025).

The implementation of disaster risk reduction management initiatives in Philippine schools indicates that implementation challenges stem from policy formulation, inadequate staffing, budget constraints, and a shortage of educational resources for disaster risk reduction. Current circumstances hinder effective disaster risk reduction management efforts and diminish educational institutions' capacity to establish resilient learning environments. The data shows that schools must eliminate four particular barriers, namely lack of resources, gaps in knowledge, inadequate training, and ineffective policy execution, to enhance their disaster risk reduction management initiatives (Acierto, P et al., 2023).

Outcomes and impacts of school DRRM programs

Studies indicate that students involved in school-based Disaster Risk Reduction and Management (DRRM) programs tend to achieve improved outcomes. The research showed that students who learned disaster risk reduction through integration into their school curriculum acquired more knowledge of preparedness, response, and planning than those who did not study these subjects. Increased knowledge of disaster risk reduction led to students exhibiting improved disaster-response behavior. The implementation of DRRM education equips students with safety knowledge, fosters a safety perspective, and encourages their participation in disaster response efforts.

The research indicated that high schools in the SOCCSKSARGEN Region with "very high" levels of DRRM implementation had students attaining "very satisfactory" assessment outcomes, although their theoretical understanding of disasters stayed at an average level (Morante & Cerado, 2025). The research results indicate that students involved in structured disaster risk reduction management programs can acquire emergency response skills, but their knowledge assessments reveal varying readiness levels that necessitate further practical education in disaster risk reduction management.

Studies show that DRRM initiatives at the school institutional level enhance the ability of schools to effectively address all four areas of disaster management operations, which encompass prevention, mitigation, preparedness, response, and recovery in public schools throughout the Philippines. The assessment of DRRM implementation in public schools of Cabadbaran City revealed that the schools upheld regular preparedness initiatives, while their administrative capabilities aligned with the requirements for effective program execution, as indicated by Daminar 2026. A study in Angono, Rizal, indicated that school stakeholders, including teachers, DRRM coordinators, and parent representatives, felt that the DRRM program successfully equipped school communities for mitigation and response initiatives, thereby enhancing contingency planning (Pojas, 2024).

The integration of DRRM systems, along with school safety initiatives and policy frameworks, results in improved student performance while strengthening institutional efficiency and fostering community collaboration. The Department of Education created its Disaster Risk Reduction and Management Information System to assist schools in reporting hazards, raising awareness, and improving decision-making. The system seeks to reduce instructional time lost to disasters in schools while enhancing resilience across the Philippine educational system. Recent advancements show that DRRM programs can operate across school boundaries to enhance national safety systems and their associated information networks (DepEd, 2022).

Current studies show that school disaster risk reduction management initiatives yield significant advantages in student preparedness, disaster response actions, institutional disaster readiness, and community resilience. The program criteria require further refinement, as student knowledge outcomes show varying trends, and schools must develop comprehensive disaster risk reduction management initiatives within their educational frameworks. The research indicates that successful disaster risk reduction management in schools requires comprehensive resource allocation and appropriate instructional techniques to foster safer educational settings that enhance resilience.

Statement of the problem

This study aims to explore the challenges and practices of DRRM coordinators in implementing the DRRM program. Specifically, this study ought to answer the following research questions:

1. What are the current practices implemented by schools in the Schools Division of the City of Batac in their DRRM Program?

2. What challenges do schools in the Schools Division of the City of Batac encounter in implementing their DRRM program?

Methodology

This chapter presents the research design and sources of data, including the study locale, population, and sampling; the data-gathering instrument; and data analysis, along with its ethical standards.

Research design

This study employed a qualitative research design, specifically a narrative inquiry approach, to explore the lived experiences of school DRRM coordinators. In addition, it enables an in-depth exploration of their subjective realities, allowing for the identification of common themes across both immediate crisis responses and long-term management strategies (Creswell, 2023).

Locale of the study

The study was conducted in the Schools Division of the City of Batac, a region that is highly vulnerable to any calamities. This context provides a significant opportunity to explore the challenges and strategies of the DRRM coordinators in the Schools Division of the City of Batac.

Population and sampling

A total of 15 DRRM coordinators of the Schools Division of the City of Batac were purposively selected for this study. This sample size is consistent with phenomenological research, which seeks to provide an in-depth understanding of lived experiences rather than generalize findings (Van Manen, 2016).

Data gathering instrument

Data were collected via an online interview questionnaire consisting of open-ended questions designed to elicit detailed responses about the struggles and strategies of elementary school heads during and after flood events. The questionnaire was developed in alignment with the study's objectives and validated through expert review to ensure clarity, relevance, and the ability to capture rich qualitative data (Kvale & Brinkmann, 2015). The questions covered key areas such as immediate crisis response, long-term resilience building, and strategic planning for future disasters.

Data gathering procedure

Data were collected via online questionnaires administered through Google Forms. While online data collection can limit the richness of responses compared to face-to-face interviews, several strategies were implemented to mitigate this limitation. Follow-up emails were sent to clarify ambiguous responses, and participants were encouraged to provide detailed explanations in their answers. Additionally, participants were given the option to schedule follow-up interviews via video conferencing if further elaboration was necessary.

The online questionnaire was designed to elicit detailed and reflective responses and was piloted with a small group of educational leaders to ensure clarity and relevance. Based on feedback, adjustments were made to improve the questionnaire's structure. The open-ended questions focused on areas such as crisis response, long-term preparedness, and recovery strategies, allowing participants to reflect on their

experiences fully. The flexibility of online questionnaires enabled participants to respond at their own pace, promoting deeper reflection and more thoughtful responses.

Data analysis tool

The responses were analyzed using Braun and Clarke's (2006) six-phase thematic analysis, a rigorous and systematic approach to qualitative data analysis. This process began with familiarization, where the researcher reviewed the dataset multiple times to gain an overall understanding of the data. In the second phase, initial codes were generated by identifying significant statements and key phrases related to the challenges and strategies of the school heads. These codes were then grouped into potential themes in the third phase, focusing on patterns that emerged across the dataset.

In the fourth phase, themes were reviewed and refined to ensure they captured the full complexity of the participants' lived experiences. The researcher revisited the data several times throughout the process to refine the coding and ensure all relevant data were accounted for. During the fifth phase, the themes were clearly defined and named, capturing the essence of the struggles and coping strategies of the participants. Finally, in the sixth phase, a detailed narrative was constructed that linked the identified themes to the broader research questions, providing a comprehensive understanding of the phenomenon.

Additionally, to ensure the credibility of the findings, member checking was conducted by sharing preliminary themes with participants to verify the accuracy of the interpretations. Inter-coder reliability was established through collaboration with a second researcher, ensuring that the themes were consistently interpreted and agreed upon.

Ethical considerations

Ethical considerations were carefully addressed. Informed consent was obtained digitally, and participants were fully briefed on their rights, including the right to withdraw from the study at any point. All responses were anonymized, and data were securely stored on encrypted servers to protect participants' privacy. Given the sensitive nature of the topic, the study also ensured that participants had access to appropriate resources if any distress arose during or after data collection.

Data presentation and analysis

This part presents findings from the online interview with 13 respondents of the Schools Division of the City of Batac. The data is organized according to key themes identified.

Problem 1: What are the current practices implemented by schools in the Schools Division of the City of Batac in their DRRM Program?

Table 1. Current practices implemented in their DRRM program

Theme	Frequency
Improved students' knowledge and awareness	15
Formal curriculum inclusion and experiential classroom activities	15

Professional development and skills strengthening in school-based DRRM implementation	14
Student leadership and responsibility in DRRM	1
Awareness and advocacy participation	15
Stakeholder collaboration and support	15

Note: Data were collected from DRRM Coordinators at the Schools Division of the City of Batac using a Google Form.

In what ways do you think DRRM initiatives have impacted students' safety and preparedness at your school?

Theme 1: Improved students' knowledge and awareness

This study revealed that 100% of respondents reported that the DRRM implementation in their school significantly improved students' knowledge and awareness of disaster preparedness and emergency response. Participants consistently reported that activities such as earthquake and fire drills contributed to a deeper understanding of safety protocols and emergency procedures. One participant shared that,

"The DRRM initiatives in our school have greatly improved student safety and preparedness. Because of regular drills and orientations, students now know what to do during emergencies such as earthquakes, fires, or typhoons. Instead of panicking, most students can follow proper procedures like staying calm, protecting themselves, and evacuating in an orderly manner (P1)."

Furthermore, the findings suggest that the consistent implementation of DRRM activities contributes to the development of a culture of safety and preparedness among students. Regular participation in disaster drills, safety orientations, and preparedness programs helps learners become familiar with appropriate response strategies in emergencies. As students repeatedly practice evacuation procedures and safety protocols, they develop confidence, discipline, and the ability to remain calm during potential disaster events. This indicates that DRRM initiatives not only enhance students' theoretical understanding of disaster preparedness but also strengthen their practical skills and behavioral readiness **(Victoriano et al., 2025).** Consequently, integrating DRRM activities into the school environment plays a crucial role in equipping students with the knowledge, awareness, and competencies needed to effectively respond to disasters and minimize risks within the school community (**Arcegono et al., 2023**).

How has DRRM been integrated into the teaching and learning process?

Theme 1: Formal curriculum inclusion and experiential classroom activities

100% reported that Disaster Risk Reduction and Management (DRRM) has been integrated into the teaching and learning process through formal curriculum inclusion and experiential classroom activities. Moreover, DRRM concepts are embedded in some subject areas such as Science and Araling Panlipunan, where topics on natural hazards, climate change, emergency response, and environmental sustainability are discussed in alignment with learning competencies. Participant stated that,

"DRRM has been integrated into the teaching and learning process through different subjects and classroom activities. In subjects like Science and Geography, teachers discuss natural hazards such as earthquakes, typhoons, floods, and volcanic eruptions, including their causes and effects. This helps students understand disasters from a scientific perspective. P1" and *"DRRM is integrated into lessons through discussions, simulations, and project-based activities related to disaster awareness and preparedness. Teachers include safety topics in subjects like Science and Araling Panlipunan (P3)."*

These findings indicate that integrating Disaster Risk Reduction and Management (DRRM) into the curriculum enables students to acquire both theoretical understanding and practical knowledge of disaster preparedness. By embedding DRRM concepts across different subject areas, teachers can contextualize lessons and connect them to real-life situations students may encounter in their communities. The use of discussions, simulations, and project-based activities also encourages active participation and critical thinking among learners. Through these instructional approaches, students are not only informed about the causes and effects of natural hazards but also guided in developing appropriate responses before, during, and after disasters. This integration highlights the important role of schools in fostering disaster-resilient learners who are capable of applying safety knowledge and preparedness strategies in various situations. Studies have shown that integrating disaster education into school curricula significantly improves students' awareness, preparedness, and response capabilities during emergencies (Shaw, Shiwaku, & Takeuchi, 2011; United Nations Office for Disaster Risk Reduction [UNDRR], 2017). Moreover, incorporating experiential learning activities, such as drills and simulations, strengthens learners' practical disaster-response skills and promotes a culture of safety within educational institutions (Ronoh, Gaillard, & Marlowe, 2015).

What types of training or capacity-building activities have you received related to DRRM? How effective were they?

Theme 1: Professional development and skills strengthening in School-Based DRRM implementation

The data gathered from 92.3 % participants indicated that a series of training and capacity-building activities have been undertaken to enhance competence in Disaster Risk Reduction and Management (DRRM). In addition, participants emphasized that these trainings and workshops combine theoretical knowledge with hands-on practice to reinforce learning. One participant shared that,

"I have participated in several training and capacity-building activities related to DRRM. These include earthquake and fire drills, basic first-aid training, and disaster-preparedness orientations. During drills, we practiced proper response techniques such as "Duck, Cover, and Hold" and safe evacuation procedures. In first aid training, we learned basic skills like treating minor wounds, assisting injured individuals, and responding calmly in emergencies (P1)."

These findings suggest that regular training activities play an essential role in strengthening the preparedness and response capacity of school personnel and learners. Practical training opportunities

enable participants to apply disaster management concepts in simulated emergencies, thereby increasing their confidence and competence in handling real-life disasters. Previous studies have emphasized that capacity-building programs, such as drills, first-aid training, and disaster preparedness seminars, significantly improve the readiness and response capabilities of school communities during emergencies (Shaw, Shiwaku, & Takeuchi, 2011; United Nations Office for Disaster Risk Reduction [UNDRR], 2017). Furthermore, experiential learning approaches are recognized as effective strategies for developing practical disaster management skills and promoting a culture of preparedness within educational institutions (Ronoh, Gaillard, & Marlowe, 2015).

How do students and other stakeholders participate in DRRM activities?

Theme 1: Student leadership and responsibility in DRRM

The findings revealed that 7.7% of the DRRM coordinators reported that students play significant leadership roles in implementing DRRM activities within the school. Participants shared that selected learners serve as DRRM officers and classroom leaders who assist teachers in guiding classmates during evacuation drills and monitoring attendance in designated assembly areas. This indicates that students are not merely participants but active contributors to disaster preparedness efforts. A participant said that,

"Some students are selected as DRRM officers or classroom leaders who help guide their classmates during evacuations and assist in monitoring attendance at assembly areas (P1)."

Through these leadership opportunities, students develop important skills such as responsibility, decision-making, teamwork, and situational awareness, which are essential during emergencies. Involving students in leadership roles also promotes a sense of ownership and accountability toward disaster preparedness initiatives within the school community. Research on youth engagement in disaster response highlights that student involvement in organizing preparedness activities reinforces their understanding of disaster risk reduction and enhances their commitment to community safety (Landicho, 2025). Furthermore, studies on school DRRM implementation emphasize the importance of integrating disaster education and student participation into school practices to build resilient learners and promote preparedness (Wang et al., 2023; DepEd DRRMS, 2021). These findings support the idea that student leadership not only benefits individual learners but also strengthens collective disaster preparedness and risk awareness across the school environment.

Theme 2: Awareness and advocacy participation

Data indicated that 100% showed that students actively engage in awareness and advocacy activities that promote disaster preparedness. Respondents highlighted participation in emergency drills, safety orientations, hazard mapping, poster-making contests, and preparedness campaigns. These activities enhance students' understanding of potential risks and appropriate safety measures before, during, and after disasters. A participant stated that,

"Students actively participate in DRRM activities by joining drills, attending orientations, and following safety protocols during emergency simulations (P1)."

Such active participation is crucial, as studies have shown that involving students in disaster education and advocacy programs significantly improves risk perception, safety behavior, and overall preparedness in school settings (Shiwaku, Sharma, & Shaw, 2007; Lassa, 2013). Moreover, engaging learners in peer-led initiatives, simulations, and community campaigns fosters a culture of preparedness and safety consciousness, ensuring that disaster risk reduction becomes a shared responsibility among the school community (Ronoh, Gaillard, & Marlowe, 2015). These findings highlight the importance of continuous student involvement not only in formal drills but also in awareness and advocacy activities to strengthen resilience and promote proactive disaster management in schools.

Theme 3: Stakeholder collaboration and support

Another important finding highlights the 100% result regarding the collaborative role of stakeholders in strengthening DRRM implementation. Parents, community partners, and external agencies were reported to support school initiatives through the dissemination of information, coordination during emergencies, participation in cleanup drives, and the donation of emergency supplies. In addition, a participant noted that,

"*Parents and community partners support through information dissemination, emergency response coordination, and sometimes donation of supplies (P3).*"

This collaboration demonstrates that disaster preparedness extends beyond the classroom and requires collective action among schools and communities. Furthermore, stakeholder involvement enhances resource availability, improves communication systems, and reinforces shared accountability in maintaining a safe and disaster-resilient learning environment. (Johnson et al., 2020)

Problem 2: What challenges do schools in the Schools Division of the City of Batac encounter in implementing their DRRM program?

Table 2. The challenges of DRRM coordinators in implementing their DRRM program

Theme	Frequency
Limited resources and emergency supplies	15
Lack of training and capacity building	4
Low participation of students	8
Unserious behaviors of students	8

Note: Data were collected from DRRM Coordinators at the Schools Division of the City of Batac using a Google Form.

What are the main challenges your school faces in implementing DRRM practices effectively?

Theme 1: Limited resources and emergency supplies

The findings show that 100% of the DRRM coordinators reported that limited financial resources and inadequate emergency supplies significantly affect the effective implementation of DRRM practices in

schools. Participants emphasized shortages of first-aid kits, emergency tools, communication materials, and disaster response supplies needed during drills and actual emergencies. A participant noted that,

"One of the main challenges our school faces in implementing DRRM practices effectively is limited resources (P2)."

This confirms that budget constraints restrict schools from acquiring essential preparedness materials and sustaining DRRM activities throughout the school year. Similar studies on Philippine schools revealed that insufficient funding remains one of the most pressing challenges, preventing schools from purchasing necessary disaster-preparedness equipment and maintaining readiness programs. Limited resources often compel schools to prioritize academic or operational needs over DRRM initiatives, thereby weakening preparedness efforts and response capability during disaster situations (Balanggoy, 2025)

Theme 2: Lack of training and capacity building

Another emerging theme highlights the 26.66% of lack of adequate training and capacity-building opportunities for teachers, DRRM coordinators, and school personnel. Participant said that,

"The main challenge was that I have no knowledge, no training in doing or in leading the team in case of emergencies and disaster since I am a non-teaching employee. But teachers are of help in carrying out such activities (P3)."

Thus, Participants noted that limited access to seminars, emergency response training, and disaster management workshops reduces confidence and competence in handling disaster-related situations. Effective DRRM implementation requires continuous professional development in areas such as first aid, incident command systems, evacuation management, and risk assessment. Moreover, research findings confirm that insufficient training and limited understanding of DRRM concepts hinder schools from fully implementing preparedness and response measures. Without sustained capability-building programs, school personnel may struggle to translate DRRM plans into effective action during emergencies (Luminarias & Liquido, 2025)

Can you share an example of a situation where DRRM implementation did not go as planned? What were the factors involved?

Theme 1: Low participation of students

The findings revealed that 53.33% of the DRRM coordinators reported that low student participation remains a significant challenge in implementing DRRM practices effectively. Participants reported that only a limited number of students actively engage in disaster drills, preparedness programs, and safety orientations, while others show minimal interest or fail to participate consistently. One participant noted that,

"The factors involved were lack of focus, unclear instructions, and limited supervision in certain areas (P3)."

This confirms that limited participation weakens the school's overall preparedness, since disaster response effectiveness relies heavily on collective involvement. Research shows that student engagement in emergency preparedness programs is often low, with many institutions reporting participation from only a small portion of the student population. Factors such as competing academic activities, lack of awareness, and limited motivation contribute to reduced involvement in DRRM initiatives. Insufficient participation prevents students from fully understanding evacuation procedures and emergency roles, thereby affecting the school's readiness during actual disaster situations (Cundy,2026)

Theme 2: Unserious behaviors of students

Another emerging concern identified in the data is that 53.33% of the DRRM Coordinators reported the unserious behavior of some students during disaster drills and simulations. A participant noted that,

"Sometimes, since it was only a drill, learners are not focused and serious enough in the implementation of the drill (P11)."

Studies on student behavior during evacuation drills revealed that some learners do not comply with emergency protocols, fail to observe safety positions, or neglect instructions due to a lack of seriousness and awareness. Such behavior reduces the effectiveness of simulations designed to prepare students for real emergencies and may increase risks during actual disaster events. Repeated and well-structured drills, along with strengthened disaster education, are recommended to improve behavioral compliance and promote responsible participation among students (Parlak et. al., 2023)

Table 3. Supports in improving the DRRM implementation

Theme	Frequency
Sufficient emergency equipment/facility	15
Continuous training	15

Note: Data were collected from DRRM Coordinators at the Schools Division of the City of Batac using a Google Form.

What resources or support do you feel are lacking that could help improve DRRM practices in your school?

Theme 1: Sufficient emergency equipment/facility

The findings indicate that 100% of the DRRM Coordinators reported that the availability of sufficient emergency equipment and safe facilities significantly contributes to the effective implementation of DRRM practices in schools, as stated by a participant that,

"*One of the main resources that may be lacking in improving DRRM practices in our school is sufficient emergency equipment. Additional first-aid kits, updated medical supplies, fire extinguishers, emergency alarms, and communication devices would strengthen our preparedness*

during emergencies. Having more visible and durable evacuation signage could also improve safety (P1).”

Adequate facilities enable schools to conduct realistic drills and ensure learner safety during disasters, and schools equipped with proper emergency equipment are better positioned to maintain learning continuity and minimize risks. Research has shown that physical preparedness—including emergency supplies, safety devices, and infrastructure—plays a major role in reducing disaster impacts and improving school safety (Mitchell et al., 2020; Birkmann et al., 2017). Other studies also emphasize that the availability of appropriate emergency tools (e.g., first aid kits, alarms, signage) enhances response capability and supports the practical application of disaster plans (Leonard & Plummer, 2019; Mulligan & Hill, 2016). Conversely, contexts with limited emergency resources often struggle to sustain preparedness efforts and may experience increased vulnerability during crises (Marschke & Atlas, 2018).

Theme 2: Continuous training

Another significant theme that emerged from the data is the importance of continuous training and capacity building among teachers, DRRM coordinators, and students, as stated by a participant.

“More training, updated emergency equipment, clear information, reliable communication, and support from authorities are needed to improve DRRM practices in our school (P10).”

100% of the participants reported that regular seminars, drills, and disaster preparedness training improve knowledge, skills, and confidence in responding to emergencies. Continuous professional development ensures that school personnel remain up to date on disaster response protocols and risk reduction strategies. Moreover, sustained training initiatives enhance preparedness levels and promote a culture of safety within the school community.

Research supports these findings, indicating that ongoing professional development and simulation-based exercises in schools improve the effectiveness of emergency response and strengthen resilience among both educators and learners (Shaw, Shiwaku, & Takeuchi, 2011; UNDRR, 2017; Ronoh, Gaillard, & Marlowe, 2015). Studies also highlight that repeated training and drills reduce panic, improve decision-making, and reinforce practical disaster management skills among school personnel and students (Haynes et al., 2018; Mitchell et al., 2020).

Results and discussion

The findings of this study provide important insights into the status of Disaster Risk Reduction and Management (DRRM) implementation in the Schools Division of the City of Batac, highlighting both strengths and areas requiring improvement. Overall, DRRM initiatives have significantly enhanced student safety and preparedness, as regular drills, safety orientations, and preparedness programs enable students to respond appropriately during emergencies such as earthquakes, fires, and typhoons. This supports prior research emphasizing that consistent school-based DRRM implementation strengthens learners’ readiness and promotes safer learning environments (Batallones, 2025).

The integration of DRRM into classroom instruction further reinforces disaster preparedness by linking theoretical knowledge with practical application. Embedding disaster-related concepts in subjects such as Science and Araling Panlipunan allows students to understand hazards from both scientific and social perspectives, thereby strengthening risk awareness at an early stage. This aligns with findings that curriculum integration significantly improves DRRM implementation and contributes to the development of disaster-resilient school communities (Batallones, 2025).

Training and capacity-building activities also emerged as critical factors in strengthening DRRM implementation. Professional development initiatives—including first-aid training, emergency drills, and preparedness workshops—enhance the competence and confidence of teachers and personnel. Literature supports that the effectiveness of DRRM programs is closely linked to the quality and frequency of training, as well-trained educators demonstrate stronger preparedness and implementation practices (Luminarias & Liquido, 2025).

Moreover, student participation and stakeholder collaboration play vital roles in successful DRRM implementation. Student involvement as DRRM officers fosters leadership, responsibility, and active engagement, while partnerships with parents, local government units, and DRRM offices enhance coordination, resource sharing, and emergency response mechanisms. Studies confirm that collaboration with external stakeholders significantly improves preparedness and response effectiveness in schools (Balanggoy, 2025).

Despite these strengths, several challenges persist. Limited financial resources and insufficient emergency supplies constrain schools' ability to sustain preparedness programs and acquire necessary equipment, reflecting broader issues reported in Philippine DRRM studies (Luminarias & Liquido, 2025). Behavioral challenges among students—such as low participation and lack of seriousness during drills—also reduce the effectiveness of emergency simulations. Literature suggests that continuous training, engaging simulation strategies, and strengthened awareness campaigns are necessary to improve student responsiveness (Bautista et al., 2023). Additionally, the need for adequate emergency facilities and ongoing professional development remains essential to sustain program effectiveness, highlighting the importance of institutional support and coordinated stakeholder action (Otero, 2025).

From a theoretical perspective, the findings support the concept that school resilience develops through the consistent implementation of DRRM activities, demonstrating how adaptive capacities evolve. This aligns with research emphasizing proactive preparedness, institutional resilience, and collaborative planning as key elements of effective disaster risk reduction (Balanggoy, 2025; Dalangin, 2025). Furthermore, integrating DRRM into instruction reflects constructivist learning principles, where students gain a deeper understanding through experiential and context-based learning (Abregana, 2025). In terms of policy implications, the identified resource limitations highlight the need for dedicated funding and material support to ensure effective DRRM implementation. Without sufficient policy backing, schools may struggle to sustain preparedness initiatives, as supported by studies citing budgetary and equipment constraints (Balanggoy, 2024). Additionally, policies should prioritize student engagement, continuous training programs, and robust monitoring and evaluation systems to ensure effective implementation and accountability (Dalangin, 2025).

However, the study has several limitations. The small sample size—limited to 15 DRRM coordinators from a single school division—restricts the generalizability of findings to broader contexts (Comighud, 2019). Furthermore, reliance on self-reported data and a single respondent group may introduce bias and limit perspective diversity, as other stakeholders such as students, parents, and community partners were not included. Existing literature highlights the importance of incorporating multiple viewpoints to better understand implementation challenges and policy gaps (Hijada, 2025).

Conclusion

The findings of this study revealed that the implementation of Disaster Risk Reduction and Management (DRRM) initiatives in the Schools Division of the City of Batac has generally strengthened school safety, preparedness, and disaster awareness among students, teachers, and stakeholders. The data presentation and analysis indicate that DRRM programs have positively enhanced students' knowledge, awareness, and readiness through regular drills, classroom integration, and active participation in preparedness activities. Consistent with previous studies, effective school-based DRRM implementation improves learners' preparedness and promotes a culture of safety within educational institutions (Morante & Cerado, 2025)

In addition, integrating DRRM into the teaching and learning process through curricular inclusion and experiential activities demonstrates that disaster preparedness is becoming an essential component of holistic education. Capacity-building programs and professional development initiatives further strengthened school personnel's competence in managing emergencies. Student leadership, awareness campaigns, and stakeholder collaboration also emerged as significant factors supporting successful DRRM implementation, underscoring that disaster preparedness is a shared responsibility among schools, families, and community partners.

Despite these strengths, several challenges continue to affect effective DRRM implementation. Limited resources, insufficient emergency supplies, and inadequate training opportunities hinder schools' ability to sustain preparedness efforts. Behavioral concerns, such as low participation and unserious attitudes among some students during drills, also reduce the effectiveness of simulation activities designed to prepare learners for real disaster situations. Similar research findings emphasize that resource limitations and training gaps remain common barriers in Philippine schools' DRRM implementation, affecting overall readiness and response capability (Luminarias & Liquido, 2025).

Furthermore, the study highlighted critical areas for improvement, particularly the need for sufficient emergency equipment and facilities, continuous training programs, and strengthened partnerships with local DRRM offices and external agencies. These support mechanisms are essential in ensuring sustainability, improving coordination, and enhancing institutional resilience during emergencies.

While DRRM implementation in the Schools Division of the City of Batac demonstrated meaningful progress in promoting disaster preparedness and safety, continuous improvement efforts are necessary to address existing challenges. Strengthening resources, sustaining capacity-building initiatives,

encouraging responsible student participation, and fostering collaborative partnerships will further enhance the effectiveness of school-based DRRM programs and contribute to the development of safer and disaster-resilient learning environments.

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