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## Strengthening Disaster Preparedness through DRRM-Integrated Pedagogical Practices

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### Abstract

*This study examined how Disaster Risk Reduction and Management (DRRM)-integrated pedagogical practices strengthened disaster preparedness at Lagawe Central School. Specifically, it explored the instructional strategies used by teachers to integrate DRRM concepts into classroom instruction, the influence of these practices on learners' disaster awareness and preparedness behaviors, teachers' and school stakeholders' perceptions of DRRM-integrated pedagogy, and the challenges encountered in its implementation. A qualitative descriptive research design was employed to generate in-depth and context-specific insights. Data were collected through semi-structured interviews with selected classroom teachers, the school DRRM coordinator, and school administrators, as well as through classroom observations and document analysis of lesson plans, DRRM action plans, and school safety reports. Purposive sampling ensured that participants had direct involvement in DRRM instruction and preparedness initiatives. The data were analyzed using thematic analysis, with triangulation enhancing the credibility and trustworthiness of the findings. The results revealed that DRRM concepts were consistently embedded in classroom instruction across subject areas through contextualized discussions, simulations, drills, and learner-centered activities. These pedagogical practices enhanced learners' disaster awareness, preparedness skills, and safety-oriented behaviors. Teachers observed increased learner confidence, discipline, and responsiveness during emergency situations. Participants also expressed positive perceptions of DRRM-integrated pedagogy, recognizing its importance in fostering a culture of safety and resilience within the school. However, challenges such as limited instructional materials, insufficient training, and time constraints affected the sustainability and depth of DRRM integration. The study concludes that DRRM-integrated pedagogical practices play a crucial role in strengthening disaster preparedness in schools and highlights the need for sustained institutional support, teacher capacity building, and collaborative partnerships to maximize their educational impact.*

**Keywords:** disaster preparedness, DRRM-integrated pedagogy, learner-centered instruction, school safety, elementary education

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# Strengthening Disaster Preparedness through DRRM-Integrated Pedagogical Practices at Lagawe Central School

## Introduction

Disaster preparedness is a critical concern in education systems, particularly in disaster-prone countries such as the Philippines. Schools play a vital role in promoting disaster awareness, risk reduction, and preparedness among learners, as they serve not only as centers of learning but also as spaces for community safety and resilience. Integrating Disaster Risk Reduction and Management (DRRM) into classroom instruction enables learners to develop essential knowledge, skills, and attitudes needed to respond effectively to natural and human-induced hazards. As children are among the most vulnerable groups during disasters, embedding DRRM concepts into daily teaching practices is crucial for fostering a culture of safety from an early age.

Educational reforms and global frameworks emphasize the importance of DRRM education as part of holistic and sustainable development. Schools are encouraged to adopt DRRM-integrated pedagogical practices that go beyond drills and emergency plans by incorporating disaster concepts into lessons across subject areas. Such practices allow learners to understand risks, practice preparedness behaviors, and apply disaster knowledge in real-life contexts. Teachers, therefore, serve as key agents in translating DRRM policies into meaningful classroom experiences.

At Lagawe Central School, strengthening disaster preparedness through DRRM-integrated pedagogy is particularly relevant due to the school's exposure to environmental risks and its responsibility to ensure learner safety. Examining how teachers integrate DRRM into instruction, how learners respond to these practices, and what challenges are encountered is essential in improving school-based disaster preparedness and instructional effectiveness.

Globally, disaster education has been recognized as an effective strategy for reducing vulnerability and enhancing community resilience. The United Nations Office for Disaster Risk Reduction (UNDRR, 2015) emphasized that integrating DRRM into education strengthens learners' capacity to understand hazards and adopt preparedness behaviors. Similarly, the Sendai Framework for Disaster Risk Reduction highlights education as a key mechanism for disaster risk awareness and resilience building (UNDRR, 2015).

Research shows that DRRM-integrated pedagogy enhances learners' disaster knowledge and preparedness skills. Shaw, Shiwaku, and Takeuchi (2011) found that school-based disaster education significantly improves students' risk awareness and response capabilities. In the Asian context, Peek (2008) noted that children who receive disaster education are more likely to act appropriately during emergencies and influence preparedness within their families.

Pedagogical integration of DRRM is most effective when learner-centered approaches are employed. Active learning strategies such as simulations, drills, problem-based learning, and contextualized lessons have been shown to improve disaster preparedness outcomes (Johnson et al., 2014). According to UNESCO (2017), integrating DRRM concepts into regular subjects promotes continuity of learning while reinforcing safety awareness.

In the Philippine context, studies highlight the importance of embedding DRRM into basic education. Luna (2014) emphasized that schools are critical entry points for disaster preparedness education, particularly in hazard-exposed communities. Delicado (2018) found that DRRM integration in classrooms increased learners' awareness of disaster risks and improved their preparedness behaviors. Furthermore, Gaillard and Pangilinan (2010) stressed that teacher competence and instructional strategies significantly influence the effectiveness of school-based DRRM education.

However, several studies point to challenges in DRRM integration. Teachers often face limited training, lack of instructional materials, and insufficient time to fully integrate DRRM concepts into lessons (Esteban et al., 2013; UNESCO, 2017). These constraints may limit the sustainability and depth of DRRM-integrated pedagogy despite strong policy support. While existing literature affirms the importance of DRRM education and the effectiveness of integrating disaster concepts into school curricula, notable gaps remain. Many studies focus on policy frameworks, disaster drills, or community-level preparedness, with limited attention to how DRRM is integrated into everyday classroom pedagogy. Additionally, few school-based qualitative studies examine teachers' instructional practices, perceptions, and challenges in implementing DRRM-integrated pedagogy at the elementary level.

In the Philippine context, there is limited empirical research that explores how DRRM-integrated teaching practices influence learners' preparedness behaviors and disaster awareness within specific school settings. Moreover, little is known about how teachers operationalize DRRM integration across subjects and how these practices are

perceived by learners and school stakeholders. Addressing these gaps, the present study focuses on Lagawe Central School to provide context-specific evidence on DRRM-integrated pedagogical practices and their role in strengthening disaster preparedness.

## Research Objectives

This study aims to examine how DRRM-integrated pedagogical practices strengthen disaster preparedness at Lagawe Central School. Specifically, it seeks to identify the teaching strategies and instructional activities used by teachers to integrate Disaster Risk Reduction and Management (DRRM) concepts into classroom instruction. The study also aims to examine how these pedagogical practices influence learners' knowledge, awareness, and preparedness behaviors related to disasters. In addition, it seeks to explore teachers' and school stakeholders' perceptions of the effectiveness of DRRM-integrated pedagogy in promoting disaster readiness and safety consciousness. The study further aims to identify challenges encountered in implementing DRRM integration in teaching and learning processes and to generate context-based insights that may inform instructional improvement, capacity-building, and school-based DRRM initiatives at Lagawe Central School.

## Methodology

This study employed a qualitative descriptive research design to comprehensively examine how Disaster Risk Reduction and Management (DRRM) integrated pedagogical practices strengthened disaster preparedness at Lagawe Central School. The qualitative approach was deemed appropriate because the study sought to capture participants' lived experiences, instructional practices, and perceptions regarding DRRM integration in teaching, rather than to quantify preparedness outcomes. This design allowed for an in-depth and contextualized understanding of how DRRM concepts were operationalized within everyday classroom instruction and school practices.

The participants consisted of classroom teachers from different grade levels, the school DRRM coordinator, and school administrators who were directly involved in instructional delivery and disaster preparedness initiatives. Purposive sampling was used to ensure that participants possessed relevant knowledge and direct experience in DRRM integration, classroom instruction, and school safety planning. This sampling strategy ensured the relevance and richness of the data collected.

Data were gathered through semi-structured interviews, classroom observations, and document analysis. Interviews explored teachers' instructional strategies, perceptions of DRRM-integrated pedagogy, perceived impacts on learners, and challenges encountered. Classroom observations focused on how DRRM concepts were embedded in lessons, the use of learner-centered strategies such as simulations and drills, and learners' participation and responses. Document analysis involved reviewing lesson plans, DRRM action plans, school safety manuals, and activity reports to triangulate evidence of DRRM integration.

Data were analyzed using thematic analysis, following systematic coding, categorization, and theme development. Triangulation of data sources enhanced credibility, while ethical considerations such as informed consent, confidentiality, and voluntary participation were strictly observed throughout the study.

## Results/Findings

### Theme 1: DRRM Integration as a Continuous Instructional Practice

Findings revealed that DRRM concepts were consistently integrated into classroom instruction rather than treated as isolated activities. Teachers embedded disaster-related topics into Science, Araling Panlipunan, and Values Education lessons through contextual examples and discussions.

One teacher shared,

*"Hindi lang tuwing drill napag-uusapan ang DRRM, kasama ito sa araw-araw na lesson."*

Another teacher stated,

*"Kapag may aralin tungkol sa kalikasan, automatic naming isinasama ang usapin ng disaster."*

A school administrator remarked,

*“Mas nagiging handa ang mga bata kapag tuloy-tuloy ang DRRM instruction.”*

These responses indicate that the sustained integration of Disaster Risk Reduction and Management (DRRM) into classroom instruction reinforced learners' awareness by making disaster preparedness a regular and meaningful part of their learning experiences rather than an occasional or isolated topic. Through continuous exposure to DRRM concepts across lessons and activities, learners gradually developed a deeper understanding of potential hazards, appropriate responses, and the importance of safety practices in everyday life.

This consistent integration helped normalize preparedness behaviors, allowing learners to internalize safety procedures and view them as routine responsibilities rather than emergency-specific actions. As a result, disaster awareness became embedded in learners' daily thinking and classroom interactions, fostering a culture of readiness, vigilance, and responsibility that extends beyond drills and contributes to long-term resilience within the school community.

### **Theme 2: Learner-Centered Pedagogical Strategies Enhance Preparedness Skills**

Teachers utilized learner-centered approaches such as simulations, role-playing, drills, group problem-solving, and scenario-based activities to make disaster education practical and engaging.

One teacher explained,

*“Mas tumatatak sa isip ng bata kapag sila mismo ang gumagawa.”*

Another teacher noted,

*“Role-playing ang pinaka-epektibo dahil parang totoong sitwasyon.”*

A learner participant said,

*“Alam ko na ang gagawin kapag may lindol dahil paulit-ulit naming ginagawa.”*

Active participation enabled learners to internalize disaster preparedness procedures by allowing them to actively practice, experience, and reflect on appropriate responses to emergency situations. Through hands-on activities such as simulations, drills, role-playing, and group problem-solving tasks, learners were able to translate abstract DRRM concepts into concrete actions. This experiential engagement helped reinforce correct procedures, reduced fear and uncertainty, and strengthened learners' ability to recall and apply safety measures when needed.

As learners repeatedly participated in these activities, they developed greater confidence in their capacity to respond effectively during emergencies, resulting in increased alertness, quicker decision-making, and a stronger sense of personal responsibility for safety. Consequently, active participation did not only enhance knowledge retention but also fostered readiness and self-assurance, which are essential components of effective disaster preparedness.

### **Theme 3: Improved Safety Awareness and Responsible Learner Behavior**

Teachers observed noticeable changes in learners' safety consciousness, discipline, and responsiveness to emergency protocols.

One teacher stated,

*“Mas alert ang mga bata ngayon at marunong sumunod sa safety instructions.”*

Another shared,

*“Kahit sa bahay, ginagamit nila ang natutunan nila sa DRRM.”*

A DRRM coordinator added,

*“May malinaw na pagbabago sa preparedness behavior ng mga mag-aaral.”*

These findings suggest that DRRM-integrated pedagogy influenced not only learners' acquisition of disaster-related knowledge but also their attitudes and everyday behaviors toward safety and preparedness. Through continuous exposure to DRRM concepts and active learning experiences, learners began to demonstrate greater discipline,

alertness, and compliance with safety protocols both inside and outside the classroom. The integration of DRRM into instruction encouraged learners to apply what they had learned in real-life situations, such as practicing safe movement, following evacuation procedures, and sharing disaster preparedness information with their families. This shift from awareness to action indicates that DRRM-integrated pedagogy fostered responsible and proactive behavior, contributing to the development of a culture of safety and resilience within the school community.

### **Theme 4: Teachers' Recognition of the Pedagogical Value of DRRM Integration**

Teachers expressed strong belief in the importance of DRRM integration, viewing it as both an educational and moral responsibility.

One teacher remarked,  
*"Hindi lang ito dagdag aralin ito ay tungkol sa kaligtasan ng bata."*

Another teacher stated,  
*"Mas meaningful ang lesson kapag may DRRM integration."*

An administrator noted,  
*"DRRM should be part of teaching, not just compliance."*

Teachers' positive perceptions strengthened their commitment to integrating Disaster Risk Reduction and Management (DRRM) into instruction by reinforcing their belief that disaster education is both an essential pedagogical responsibility and a moral obligation to ensure learner safety. When teachers recognized the relevance and effectiveness of DRRM-integrated pedagogy, they became more motivated to consistently embed disaster concepts into their lessons, design meaningful learning activities, and model preparedness behaviors.

This positive outlook encouraged teachers to move beyond compliance-driven practices and view DRRM integration as a valuable component of quality teaching. As a result, teachers demonstrated greater initiative, creativity, and persistence in incorporating DRRM into classroom instruction, contributing to more sustained and impactful disaster preparedness education.

### **Theme 5: Structural and Instructional Challenges in DRRM Integration**

Despite positive outcomes, teachers encountered challenges such as limited instructional materials, insufficient training, and time constraints.

One teacher explained,  
*"Kulang ang kagamitan para sa disaster simulations."*

Another stated,  
*"Hindi lahat ng guro ay may sapat na training sa DRRM."*

An administrator shared,  
*"Kailangan ng mas matibay na suporta para masustain ang DRRM instruction."*

These challenges constrained the depth and sustainability of DRRM-integrated pedagogy by limiting teachers' ability to consistently and comprehensively embed disaster preparedness concepts into classroom instruction. Insufficient instructional materials, limited time for planning and implementation, and inadequate training reduced opportunities for teachers to design varied, learner-centered DRRM activities and to conduct regular simulations or in-depth discussions.

As a result, DRRM integration was sometimes implemented at a surface level or confined to specific periods rather than being fully sustained throughout the school year. These constraints also affected teachers' confidence and instructional flexibility, making it difficult to institutionalize DRRM as a continuous pedagogical practice and potentially weakening its long-term impact on learners' preparedness and resilience.

## **Discussions**

The findings demonstrate that DRRM-integrated pedagogical practices at Lagawe Central School significantly strengthened disaster preparedness by embedding safety education into daily teaching. Continuous DRRM integration ensured that learners regularly engaged with disaster concepts, reinforcing knowledge retention and preparedness behaviors. Learner-centered strategies proved particularly effective, as they allowed learners to actively practice response procedures and apply disaster knowledge in realistic contexts.

The positive changes observed in learners' safety awareness and behavior highlight the transformative potential of DRRM-integrated instruction. By making disaster education experiential and relevant, teachers fostered a culture of safety within the classroom and the broader school community. However, the study also revealed systemic challenges that limited full implementation, underscoring the need for sustained institutional support and professional development.

## Conclusions

This study concludes that DRRM-integrated pedagogical practices play a vital role in strengthening disaster preparedness at Lagawe Central School. The integration of DRRM concepts into classroom instruction enhanced learners' knowledge, preparedness skills, and safety behaviors. Learner-centered instructional strategies made disaster education meaningful and effective. Despite existing challenges, the findings affirm that DRRM integration contributes significantly to building a culture of preparedness and resilience within the school.

## Implications of the Study

The findings imply that schools should institutionalize DRRM integration across subject areas and grade levels. Continuous teacher training on DRRM and learner-centered pedagogy is essential to sustain effective instruction. School administrators may strengthen partnerships with local DRRM agencies to support instructional materials and capacity building. The study also implies that DRRM education should be treated as a core pedagogical responsibility rather than a supplementary activity. Finally, future research may explore the long-term impact of DRRM-integrated pedagogy on community resilience and disaster response behaviors beyond the school setting.

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## Conflicts of Interests

The author declares no conflict of interest.

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