

EXPLORING DISASTER RISK REDUCTION MANAGEMENT PRACTICES: A MIXED METHODS STUDY

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ABSTRACT

This study, utilizing an embedded mixed-methods research design, examined the implementation of Disaster Risk Reduction Management (DRRM) programs in elementary public schools in the Montevista District, Davao de Oro, focusing on preparedness, response, recovery, and mitigation. Quantitative findings revealed a "Great Extent" of DRRM implementation, with strengths in curriculum integration and simulation exercises, but significant gaps in resource allocation, risk transfer mechanisms, and humanitarian support. Qualitative insights uncovered challenges such as resource limitations, community engagement barriers, and evolving leadership demands, while highlighting strategies like external partnerships, local resource optimization, and proactive community engagement to address these issues. The study emphasized the importance of proactive planning, collaboration, and continuous improvement, recommending enhanced financial and resource support, expanded training programs, and integration of psychosocial support to strengthen resilience. These findings underscore the critical role of schools as centers of safety and preparedness, providing actionable insights for policymakers, educators, and stakeholders to enhance disaster management practices.

Keyword: - DRRM, preparedness, mitigation, resilience, community engagement, resource allocation, leadership, disaster management

1. INTRODUCTION

Disaster Risk Reduction Management (DRRM) is the systematic approach to identifying, assessing, and reducing disaster risks. Natural and artificial disasters have been a persistent threat to societies worldwide for centuries, significantly impacting various sectors, including education. The susceptibility of the educational sector to such calamities has led to a concerted effort globally to implement robust DRRM strategies. These strategies aim to mitigate the adverse effects of disasters on educational infrastructure, ensure the safety of students and staff, and maintain the continuity of education during and after disasters (Cruz, 2023).

Studies reveal that this concern is not isolated to a single part of the world but is a global issue. Correspondingly, Amri et al. (2017) investigate the implementation of disaster risk reduction education for children in Indonesia. A novel approach for evaluating the performance of education programs linked to these disciplines was devised based on prior studies. The viewpoints of children, school workers, and non-governmental organizations on the challenges of scaling up disaster risk reduction education in schools were collected in this study. The research identified key areas of concern and offered several policy recommendations for future improvements. These underlying difficulties may exist in many developing and developed countries, and the proposed solutions may likely be relevant beyond Indonesia. The findings

suggest that a new approach and measures are required to enhance the implementation and effectiveness of disaster risk reduction education in Indonesia.

In the Philippines, Campilla (2016) assessed disaster risk-reduction management practices among public elementary school administrators in Pangasinan, finding an overall weighted mean of 4.20, rated as "Practiced." The study recommended that DepEd organize a well-managed development program on disaster management. In coastal schools in Pampanga, Cresencio, and Yabut (2023) identified a key issue: low scores in "coastal school safety procedures," highlighting a lack of emphasis on safety measures specific to coastal hazards like flooding and storm surges. This gap was attributed to insufficient resources for comprehensive safety procedures in these schools.

From the local perspective, the researchers' experiences and observations, especially in areas prone to natural disasters like Davao de Oro, underscore the critical need for effective school DRRM. The recent occurrences of floods and landslides highlight the importance of preparedness and the role of educational institutions as community hubs during disasters. This study focuses on the Montevista District, aiming to understand the preparedness of elementary school administrators in managing disaster risks. By examining their challenges, practices, and insights, this research aims to enhance disaster preparedness and resilience within educational institutions at the local level, addressing a significant gap in the existing literature and providing actionable insights for targeted interventions.

In response to the urgent need to understand the preparedness of elementary school administrators in managing disaster risks, this study delves into the current level of disaster risk reduction management (DRRM) implementation within the Montevista District. Recognizing the vital role of elementary schools as community hubs during disasters, this research aims to uncover the challenges administrators face in executing DRRM protocols. The significance of this study lies in its focus on the frontline managers of disaster response – elementary school administrators. By examining their experiences, challenges, coping mechanisms, and insights, we can gain valuable perspectives on the intricacies of DRRM implementation at the grassroots level. This study fills a critical gap in the existing literature by shedding light on the specific challenges elementary school administrators encounter. Through a comprehensive assessment of their practices, this research seeks to provide actionable insights to inform targeted interventions and capacity-building initiatives. Ultimately, the findings of this study will contribute to the enhancement of disaster preparedness and resilience within the educational institutions of the Montevista District.

2. MATERIAL AND METHODS

2.1 Research Design

This study employs an embedded explanatory mixed-methods design to examine the implementation of Disaster Risk Reduction Management (DRRM) practices among elementary school administrators in the Montevista District, Davao de Oro. In this design, one form of data—either qualitative or quantitative—is nested within the other, allowing for complementary insights into the research problem (Creswell, 2014; Creswell & Plano Clark, 2011). Quantitative data, gathered through structured surveys, serves as the primary source and assesses DRRM implementation across four key components: disaster prevention and mitigation, preparedness, response, and recovery. To enhance interpretation, qualitative data is embedded through interviews with purposively selected DRRM coordinators, offering deeper insights into administrators' experiences and perspectives.

The integration of quantitative and qualitative approaches is essential in capturing both the measurable extent and contextual depth of DRRM implementation (Tashakkori & Teddlie, 2010; Creswell, 2014). While the quantitative findings reveal trends and gaps across schools, the qualitative narratives help explain the underlying causes, constraints, and coping strategies of administrators. This mixed-methods approach is significant as it provides a holistic view of DRRM practices and informs the design of targeted, evidence-based interventions to enhance disaster resilience in elementary school settings.

2.2 Research Procedures

The data gathering for this study involved a two-phased approach to comprehensively assess and understand the implementation of Disaster Risk Reduction Management (DRRM) practices within the selected public elementary schools of the Montevista District, Davao de Oro.

Phase 1: Ethical Research. As part of ensuring ethical research practices, the researcher first sought approval from the Research Ethics Committee (REC) of Assumption College of Nabunturan to make sure that the study followed ethical

guidelines and prioritized the rights and well-being of all participants. Once the REC granted approval, formal request letters were sent to the schools in Montevista District, inviting them to take part in the study. A separate letter was also submitted to the Division Office of the Department of Education (DepEd) to secure official permission to conduct research in the selected schools. These steps were taken to ensure that the study was carried out with integrity and transparency, upholding confidentiality, voluntary participation, and informed consent, while respecting the policies and protocols of the institutions involved.

Phase 2: Quantitative Data Collection. The initial phase commenced with securing informed consent from the target respondents for the quantitative segment of the study. The researcher clearly communicated the study's objectives, the voluntary nature of participation, and the measures in place to ensure confidentiality and anonymity. Upon agreeing to participate, respondents were provided with a link to the electronic survey, hosted on a secure platform to maintain the confidentiality of their responses. The survey, designed on a five-point Likert scale, allowed participants to self-report on various aspects of DRRM implementation within their schools. Once completed, responses were automatically recorded and stored for subsequent analysis. This process ensured an efficient and secure method of collecting quantifiable data related to DRRM practices.

Phase 2: Qualitative Data Collection. Following the quantitative data collection, the second phase involved conducting semi-structured interviews with a purposively selected subset of respondents who indicated their willingness to provide deeper insights into their experiences with DRRM practices. Prior to the interviews, participants were again briefed about the study's goals and reassured about the confidentiality of their contributions. Informed consent was obtained, highlighting the voluntary basis of their involvement and their right to withdraw at any time.

Interviews were scheduled at the convenience of the participants and could be conducted either face-to-face, adhering to safety protocols, or via online communication platforms, depending on the prevailing conditions and participant preference. The semi-structured nature of the interviews allowed for a flexible yet focused exploration of the themes related to DRRM implementation, challenges faced, strategies employed, and suggestions for improvement.

Data from these interviews were recorded with permission, then transcribed verbatim. The researcher ensured that all identifying information was removed or anonymized in the transcription process to maintain participant confidentiality.

Both quantitative and qualitative data gathering steps were designed to complement each other, with the quantitative phase providing a broad overview of DRRM practices across the district and the qualitative phase offering depth and context to these findings. Together, these phases facilitated a comprehensive understanding of the current state of DRRM practices, paving the way for analyzing data that could inform targeted recommendations for enhancing DRRM implementation in the Montevista District's elementary schools.

3. RESULTS AND DISCUSSION

After the data were analyzed and interpreted, the following findings were gathered.

3.1 Quantitative Findings

The extent to which elementary schools within the Montevista District, Davao de Oro, implement disaster risk reduction management programs.

Prevention and Mitigation. Schools implemented strategies to a great extent. High-scoring practices include curriculum integration of Disaster Risk Reduction and Climate Change Adaptation strategies and hazard-specific assessments, rated as very great extent. However, significant gaps exist in resource creation and risk transfer mechanisms, categorized as low extent. These findings align with existing literature, highlighting similar challenges in DRRM implementation. For instance, Bello et al. (2021) emphasize better integrating risk assessment tools and financial mechanisms in schools to enhance disaster preparedness. Similarly, Nurdin et al. (2017) identified gaps in teacher training and financial resource allocation as significant barriers to effective DRRM in Indonesian schools. The emphasis on curriculum integration in this study echoes the findings of Amri et al. (2017), who reported high confidence among educators regarding the role of disaster education in fostering resilience. However, the relatively low scores in resource creation and risk transfer reflect insights from Shah et al. (2019), who observed insufficient material resources and limited training as pervasive issues in disaster-prone educational settings. These comparisons

underline the critical need for systemic reforms and capacity-building initiatives to enhance DRRM implementation comprehensively in the Montevista District.

Preparedness. Preparedness measures were implemented to a great extent. The highest-rated practices involve simulation exercises and engagement with DRMM structures, indicating a strong focus on practical readiness. Areas requiring improvement include training sessions and the availability of emergency supplies. These findings resonate with those of Mamhot (2019), who reported similar gaps in training and resource availability in Philippine schools' disaster preparedness initiatives. The emphasis on simulation exercises aligns with Astutil et al. (2021), who highlighted that hands-on disaster response practices significantly enhance readiness among school communities.

However, the lower scores for resource availability and training reflect the insights of Comighud (2018), who found resource insufficiency and a lack of personnel training to be pervasive barriers in DRRM programs across schools. The results further corroborate the findings of Fazeli et al. (2024), which stress the importance of behavioral training and material readiness in mitigating disaster impacts. Overall, these comparisons emphasize the need for targeted investments in training and resource allocation to strengthen the preparedness capabilities of schools in the Montevista District.

Response. Disaster response was also implemented to a great extent. Effective monitoring, reporting systems, and activation of standard procedures during emergencies were prioritized. However, providing relief assistance to affected students and families scored poorly, reflecting critical gaps in humanitarian support. These findings align with the observations of Yáñez-Sandivari et al. (2021), who emphasized the importance of coordination among agencies for effective disaster response but noted gaps in resource allocation for relief efforts. The high scores for systematic procedures and monitoring resonate with Kedia et al. (2022), who highlighted the role of structured protocols and information management in enhancing situational awareness during crises.

However, the low performance in providing relief assistance mirrors the findings of Shah et al. (2020), who reported similar deficiencies in school emergency support services, citing limited resources and a lack of trained personnel. These comparisons suggest that while the Montevista District schools are strong in technical and procedural aspects of disaster response, investments in humanitarian aid and community-focused interventions are urgently needed to strengthen the overall response capacity.

Recovery and Rehabilitation. Recovery efforts were rated great extent. Schools emphasized post-damage assessments and adherence to safety standards for school projects. Lower scores in post-disaster debriefings and psychosocial support highlight areas for further improvement. These findings are consistent with studies highlighting recovery and rehabilitation practices in educational settings. For instance, Harahap (2020) emphasized the importance of integrating resiliency standards into reconstruction projects, a practice evident in this study's high ratings for safety and rehabilitation measures.

Similarly, Bahadur and Doczi (2022) noted the significance of post-damage assessments as a foundation for effective recovery planning. However, the relatively lower emphasis on post-disaster debriefings and psychosocial support aligns with the findings of Neeraj (2022), who identified gaps in addressing the psychological impacts of disasters on school communities. These parallels underscore the need for a balanced approach incorporating structural recovery and community-centric strategies to achieve sustainable school rehabilitation and resilience.

3.2 Qualitative Component

Experiences of Elementary School DRRM School Coordinators in Implementing Disaster Risk Reduction Management Programs. The qualitative findings reveal five key themes that encapsulate the challenges elementary school DRRM coordinators face in implementing disaster risk reduction programs. Lack of resources and supplies emerged as a major obstacle, with coordinators expressing difficulties in securing essential materials for preparedness and response. A great deal of responsibility was another recurring theme, as many coordinators were burdened with DRRM tasks on top of their regular teaching and administrative duties. The theme "It is a big help" highlighted the coordinators' recognition of the importance of DRRM programs despite the implementation struggles. However, the theme "difficult if not well trained" underscored how inadequate training left many unprepared to effectively manage disaster-related responsibilities. These findings are consistent with previous studies, such as those by Nurdin et al. (2017) and Kanyasan et al. (2018), which identified insufficient training, fragmented systems, and limited financial

support as major barriers to school DRRM execution. Similarly, Mwangi (2019) emphasized the critical need for better equipment and structured preparedness plans. These results highlight the pressing need for stronger institutional support, enhanced training programs, and resource allocation to empower DRRM coordinators in ensuring school disaster resilience.

Ways in Integrating Programs into The School's Existing Curriculum and Emergency Plans. The findings reveal seven key ways in which DRRM programs are integrated into the school curriculum and emergency plans. Many coordinators incorporate disaster preparedness into MAPEH (Music, Arts, PE, and Health), particularly through health lessons and physical education drills. Others noted that DRRM is very helpful in curriculum integration, naturally aligning with various subjects rather than being treated as a separate topic. Some integrate it between topics, embedding disaster awareness in relevant discussions, while others link it specifically to Araling Panlipunan, where historical and geographical disaster contexts are explored. ESP (Edukasyon sa Pagpapakatao) and GRMC (Guidance and Risk Management Counseling) provide opportunities to emphasize values, decision-making, and risk awareness, while homeroom discussions serve as platforms for reinforcing safety protocols in an interactive setting.

Additionally, Science subjects allow students to understand the environmental causes of disasters and response strategies. These approaches align with studies like Amri et al. (2017) and Astuti et al. (2021), which highlight the importance of embedding disaster education across subjects to enhance student preparedness. By integrating DRRM into multiple disciplines, schools ensure that disaster awareness and risk reduction become an essential part of students' education, fostering a culture of preparedness and resilience.

Challenges Encountered by The Participants in Implementing Disaster Risk Reduction Management. The findings highlight three major challenges faced by participants in implementing Disaster Risk Reduction Management (DRRM) programs. Availability of time emerged as a key concern, as many coordinators struggle to balance DRRM responsibilities with their regular teaching and administrative duties. The lack of resources was another significant barrier, with participants citing insufficient funding, training, and materials needed to execute disaster preparedness initiatives effectively. Interestingly, some respondents noted that their DRRM roles "made me extroverted," indicating that the responsibility pushed them beyond their comfort zones, requiring them to engage more actively with students, staff, and the community. These challenges align with findings from Nurdin et al. (2017) and Kanyasan et al. (2018), who identified time constraints, resource shortages, and inadequate training as common obstacles in DRRM implementation. Similarly, Mwangi (2019) emphasized the need for improved equipment and structured preparedness plans to support school-based disaster risk management. These insights underscore the necessity of institutional support, proper resource allocation, and capacity-building initiatives to strengthen school DRRM efforts.

Obstacles Faced in Terms of Resources and Support in Implementing These Programs. The findings reveal three major obstacles related to resources and support in implementing Disaster Risk Reduction Management (DRRM) programs. Many participants emphasized that resources are not always available, making it difficult to sustain preparedness initiatives and emergency response measures. The issue of budget for resources was also a common concern, with limited financial support hindering the acquisition of essential materials, training opportunities, and infrastructure improvements. Additionally, the theme of limited resources highlighted the ongoing struggle of schools to secure adequate supplies, equipment, and personnel needed for effective DRRM implementation. These challenges align with studies by Nurdin et al. (2017) and Kanyasan et al. (2018), which identified financial constraints, insufficient training, and inadequate resource allocation as persistent barriers in DRRM efforts. Similarly, Mwangi (2019) stressed the importance of investing in equipment and preparedness programs to enhance disaster resilience in schools. Addressing these resource gaps through improved funding, stakeholder support, and strategic planning is crucial to strengthening DRRM implementation and ensuring safer school environments.

Challenges That Hinder Oneself in Relation to The School Community's Perception or Participation in Implementing Disaster Risk Reduction. The findings highlight three key challenges that hinder DRRM implementation due to the school community's perception and participation. Many participants noted that some teachers are uninterested, making it difficult to create a unified effort in disaster preparedness and risk reduction initiatives. Another common issue was that parents find it very hassle, viewing DRRM activities as an additional burden rather than a necessity, which affects their willingness to engage in preparedness efforts. Additionally, the theme "unwilling to participate" emerged, reflecting a general reluctance from some members of the school community to take part in training, drills, or other disaster-related programs. These challenges align with studies like Nurdin et al. (2017) and Kanyasan et al. (2018), which identified low stakeholder engagement as a barrier to effective

DRRM implementation in schools. Similarly, Shah et al. (2019) emphasized the importance of fostering awareness and participation through education and community-driven initiatives. Overcoming these obstacles requires stronger advocacy, continuous engagement, and strategies that highlight the direct benefits of DRRM programs in ensuring the safety of both students and staff.

Ways Participants Cope with The Challenges Encountered in Implementing Disaster Risk Reduction Management Programs. The findings reveal seven key strategies that participants use to cope with the challenges of implementing Disaster Risk Reduction Management (DRRM) programs. Many emphasized the importance of planning ahead of time, allowing them to anticipate resource constraints and organize activities efficiently. When faced with shortages, participants adapted by using any available resources, demonstrating resilience and creativity in making the most of what was accessible. Collaborating with the barangay also proved beneficial, as local government units often provided additional support, manpower, or materials for disaster preparedness initiatives. Some coordinators found value in utilizing ideas from other schools, learning best practices and replicating effective strategies to strengthen their own programs. Constant communication with the school head was another coping mechanism, ensuring administrative backing and guidance in overcoming logistical challenges. To address funding gaps, some participants engaged in fundraising activities, securing additional resources through school events or community support.

Lastly, attending training helped enhance their knowledge and skills, equipping them with better strategies to manage DRRM responsibilities. These coping strategies align with findings from Shah et al. (2019) and Mwangi (2019), who highlighted the role of community partnerships, proactive planning, and professional development in improving disaster risk reduction efforts. School coordinators continue to strengthen DRRM implementation despite persistent obstacles by employing these approaches.

Methods or Resources Found Effective in Overcoming the Resource Limitations in Implementing Disaster Risk Reduction Management Program. The findings highlight five key methods that participants found effective in overcoming resource limitations in implementing Disaster Risk Reduction Management (DRRM) programs. Outsourcing emerged as a crucial strategy, allowing schools to seek external funding or material support from various organizations. Many also emphasized the importance of using available resources, demonstrating adaptability by maximizing what is already accessible to sustain DRRM initiatives. Another effective approach was to coordinate with the barangay, as local government units often provided assistance, logistical support, or supplementary materials for disaster preparedness efforts. Additionally, participants found success in asking help from NGOs, which offered training, equipment, and disaster-related programs to strengthen school resilience. Lastly, applying partnerships with government agencies ensured access to funding, technical expertise, and formal disaster preparedness programs. These strategies align with studies by Nurdin et al. (2017) and Mwangi (2019), which emphasize the importance of stakeholder collaboration, resourcefulness, and multi-sectoral partnerships in sustaining DRRM efforts. By leveraging these approaches, schools can enhance disaster preparedness despite financial and logistical constraints.

Ways to Engage and Educate the School Community Despite These Challenges Upon Implementing Disaster Risk Reduction Management. The findings reveal five key ways that participants engage and educate the school community despite challenges in implementing Disaster Risk Reduction Management (DRRM) programs. Awareness campaigns serve as a primary strategy, using posters, seminars, and information drives to instill disaster preparedness within the school. Many also attend barangay meetings, fostering collaboration with local leaders and ensuring that DRRM efforts are aligned with community initiatives. Another effective approach is integration into classes, where disaster preparedness topics are embedded into various subjects to make DRRM education a regular part of students' learning experience. Additionally, school programs and meetings provide opportunities to discuss disaster preparedness with teachers, parents, and stakeholders, reinforcing the importance of participation. Lastly, drills and exercises are widely used to simulate real-life disaster scenarios, helping students and staff develop practical skills and confidence in emergency response. These engagement strategies align with studies by Amri et al. (2017) and Kanyasan et al. (2018), which emphasize the importance of integrating disaster education into school activities and fostering collaboration with the broader community. By implementing these methods, schools ensure that disaster preparedness becomes a shared responsibility, strengthening resilience despite ongoing challenges.

The Most Valuable Lessons Learned About Implementing Disaster Risk Reduction Management Programs. The findings highlight seven key lessons that participants have learned through their experiences in implementing Disaster Risk Reduction Management (DRRM) programs. Many emphasized that passion is needed, as commitment

and dedication are essential in overcoming the numerous challenges associated with disaster preparedness. Another critical lesson is the importance of being proactive, ensuring that preparedness measures are in place before disasters strike. Participants also recognized the value of being resourceful, making the most of available materials and support to sustain DRRM efforts. Flexibility emerged as another key insight, as coordinators often had to adapt their strategies based on unexpected circumstances and limitations. Additionally, they learned the importance of asking for help from stakeholders if required, acknowledging that successful DRRM implementation requires collaboration with local government units, NGOs, and other external partners. Always being prepared was another essential lesson, as disasters can happen at any time, making it crucial to have emergency plans and response strategies ready. Lastly, planning ahead was identified as a fundamental practice, allowing coordinators to anticipate challenges and develop structured approaches for effective DRRM execution. These lessons align with studies like Shah et al. (2019) and Mwangi (2019), emphasizing the importance of proactive planning, stakeholder engagement, and adaptability in disaster preparedness efforts. By internalizing these insights, school DRRM coordinators can continue strengthening resilience and ensuring a safer learning environment.

Implications for Practice

On the Experiences of Elementary School DRRM School Coordinators in Implementing Disaster Risk Reduction Management Programs. To address the significant challenges faced by DRRM school coordinators, institutions must implement comprehensive training programs to equip them with the necessary skills for disaster preparedness. Given the lack of resources and supplies, schools should establish partnerships with local government units (LGUs), non-governmental organizations (NGOs), and private stakeholders to secure funding and essential materials. Additionally, recognizing that DRRM responsibilities add to teachers' workload, schools must institutionalize a shared leadership approach, delegating responsibilities among multiple staff members rather than burdening a single coordinator. Schools should also formalize support structures that provide continuous professional development opportunities, mentorship, and policy frameworks to ensure coordinators are not unprepared to manage disaster-related responsibilities.

On Ways in Integrating Programs into The School's Existing Curriculum and Emergency Plans. Integrating DRRM programs into various subject areas ensures continuous disaster preparedness education rather than limiting it to standalone activities. Schools should develop standardized instructional guidelines for integrating DRRM concepts into MAPEH, Araling Panlipunan, ESP, GRMC, Science, and Homeroom discussions. Teachers must be trained in curriculum alignment strategies, ensuring that disaster preparedness topics are embedded in lesson plans without disrupting existing learning objectives. Additionally, DRRM emergency drills and simulations should be incorporated into school-wide programs to reinforce the application of theoretical knowledge in real-life scenarios. Strengthening collaboration with barangays and emergency response units will also enhance hands-on learning, allowing students to experience practical disaster preparedness measures.

On Challenges Encountered by the Participants in Implementing Disaster Risk Reduction Management. To address time constraints in DRRM implementation, schools must establish a structured DRRM calendar, allowing coordinators to schedule activities in advance while balancing their teaching and administrative responsibilities. Given the limited resources available, schools should maximize community partnerships by engaging local businesses, civic groups, and parent associations to sponsor or donate essential DRRM materials. Since some participants noted that their DRRM roles made them more extroverted, school leaders should leverage this growth by providing leadership and communication training to coordinators, enabling them to mobilize stakeholders effectively. Institutionalizing time management strategies, increasing administrative support, and allocating additional personnel will also help ease the burden on coordinators, ensuring that DRRM responsibilities are effectively managed without negatively impacting their primary teaching roles.

On Obstacles Faced in Terms of Resources and Support in Implementing These Programs. Since resources are not always available, schools must diversify their funding sources, including government grants, NGO assistance, and community fundraising efforts, to ensure sustainability. Advocacy efforts should be strengthened to address budget limitations and lobby for increased financial allocations for DRRM at the national and local levels. Schools should also implement cost-effective solutions, such as recycling materials for disaster preparedness kits or developing low-cost, high-impact training initiatives for students and staff. Collaborating with barangays and disaster response agencies can help bridge resource gaps, providing technical support, personnel, and disaster management tools to enhance school preparedness.

On Challenges That Hinder Oneself about The School Community's Perception or Participation in Implementing Disaster Risk Reduction. DRRM education should be embedded in teacher professional development programs to address teacher disinterest, emphasizing its relevance to student safety and well-being. Schools should also design engaging and interactive DRRM activities that capture both teacher and student interest. To counter parental resistance, PTA meetings, workshops, and awareness campaigns should emphasize the direct benefits of DRRM for their children's safety. Tailoring communication strategies to address parental concerns and offering incentives for participation, such as certificates or recognition programs, can enhance involvement. Building a culture of preparedness through continuous school-community engagement is critical to shifting attitudes and increasing active participation.

On Ways Participants Cope with The Challenges Encountered in Implementing Disaster Risk Reduction Management Programs. Given that planning ahead of time emerged as a key strategy, schools must institutionalize structured planning frameworks, including DRRM checklists, risk assessments, and contingency plans. Since collaborating with barangays proved beneficial, schools should formalize agreements with local government units for ongoing disaster preparedness support. Encouraging idea-sharing between schools will also help coordinators adopt best practices from institutions that have successfully implemented DRRM programs. Meanwhile, fundraising activities should be standardized as part of school operations, ensuring sustainable financial support for DRRM initiatives. Encouraging coordinators to attend relevant training programs will also enhance their ability to adapt to evolving disaster risks and management strategies.

On Methods or Resources Found Effective in Overcoming the Resource Limitations in Implementing Disaster Risk Reduction Management Programs. Since outsourcing and partnerships were identified as effective strategies, schools should establish formal Memorandums of Agreement (MOAs) with government agencies, NGOs, and private organizations to secure long-term resource support. Utilizing available resources creatively, such as repurposing school supplies for emergency preparedness, should be encouraged. Schools should strengthen coordination with barangays, ensuring access to community-based disaster response teams and emergency assistance. Moreover, seeking support from NGOs and local businesses should become part of schools' resource mobilization strategies to sustain DRRM efforts over time.

On Ways to Engage and Educate the School Community Despite These Challenges Upon Implementing Disaster Risk Reduction Management. To enhance community participation, awareness campaigns must be continuous and community-driven, leveraging local media, social media, and school-based initiatives to spread information effectively. Attending barangay meetings should be a structured responsibility of DRRM coordinators, ensuring that schools and local officials align their disaster response plans. Integration into classroom lessons should be standardized with age-appropriate DRRM modules across all grade levels. School programs and meetings should feature DRRM discussions, emphasizing its relevance to student safety. Finally, disaster drills and exercises should be expanded to include multi-scenario simulations, preparing students and staff for a range of potential hazards.

On The Most Valuable Lessons Learned About Implementing Disaster Risk Reduction Management Programs. The key lessons learned from DRRM coordinators emphasize the importance of passion, proactiveness, resourcefulness, flexibility, stakeholder collaboration, preparedness, and planning ahead. Schools should recognize outstanding DRRM coordinators through awards and incentives to foster passion and commitment. Encouraging a proactive mindset among school personnel will ensure that preparedness measures are updated and consistently implemented. Schools should train educators to be resourceful, teaching them how to maximize available resources effectively. Promoting flexibility in disaster planning by regularly updating risk assessments ensures that strategies remain responsive to emerging threats. Strengthening stakeholder collaboration through institutionalized partnerships guarantees continuous support for DRRM programs. Finally, reinforcing a preparedness culture within schools will ensure that planning ahead remains a top priority, safeguarding students, teachers, and the wider community from disaster risks.

Implications for Future Research

Future research should explore the long-term effectiveness of disaster risk reduction management (DRRM) programs in elementary schools, focusing on how sustained training, resource allocation, and policy integration influence disaster preparedness over time. Studies can assess the impact of continuous professional development on DRRM coordinators' ability to implement risk-reduction strategies effectively while balancing their teaching responsibilities.

Additionally, research could examine the psychological and occupational stress experienced by coordinators due to their dual roles, providing insights into how administrative support and workload distribution affect their performance. Comparative studies between well-funded schools and resource-limited institutions would also be valuable in identifying the factors contributing to successful DRRM implementation and resilience-building in educational settings. Despite being limited to responses from ten DRRM coordinators in elementary public schools in the Montevista District, Davao de Oro, future studies could expand the geographic scope to include other districts or provinces, allowing for comparative analysis of regional variations in DRRM implementation. Another area for more relevant research would be a study of DRRM practices at other levels of education (i.e., secondary schools or alternative learning systems).

Further investigations should explore the effectiveness of various community engagement strategies in enhancing DRRM participation among teachers, parents, and students. Research can examine how different awareness campaign models influence stakeholder perception and willingness to participate in preparedness efforts. Moreover, studies on integrating DRRM topics into the curriculum should focus on assessing students' learning outcomes, retention of disaster preparedness concepts, and practical application in real-life scenarios. To gain deeper insights into the strengths and weaknesses of DRRM initiatives, future research can broaden the data by incorporating perspectives from teachers, students, parents, and local government participants. Additionally, future studies can explore broader themes such as climate change, natural disasters, DRRM challenges, and DRRM effectiveness. Mixed-method approaches could be particularly beneficial in addressing biases in self-reported data, allowing for a more comprehensive understanding of the factors influencing DRRM success and sustainability. By addressing these gaps, future studies can provide data-driven recommendations to strengthen school disaster preparedness and ensure the long-term sustainability of DRRM initiatives.

4. CONCLUSIONS

Furthermore, the comprehensive scope of the study covers the implementation of Disaster Risk Reduction Management (DRRM) in seventeen (17) elementary public schools in the Montevista District of Davao de Oro illustrating how schools were successful in DRRM and how far they struggle regarding DRRM approach in preparedness, response, recovery, and mitigation component. The quantitative findings indicated that schools are more responsive in common areas for structural and curriculum-related DRRM but there are large discrepancies in aspects of resource allocation, risk transfer mechanisms, and humanitarian support. In conjunction with this, qualitative findings emphasized the broad challenges that DRRM coordinators face, including resource and accessibility barriers within the communities they served, and the expectations crisis leadership comes with.

The research showed how schools can use external resources and local requirements to address challenges and meet needs of students and families, even in the face of financial and logistical constraints, with effective strategies such as external partnerships, local resource optimization and community engagement initiatives. In addition to this, proactive planning, collaboration and continuous improvement feature strongly as drivers of resilience and preparedness in the school community.

The study adds value to the wider discourse on the proper implementation of DRRM in places prone to disasters and provides practical recommendations to policymakers, educators, and stakeholders alike in the face of these findings. Such aspects include improved financial and resource support, wider trainings, cooperation along with emphasis on psychosocial as well as other humanitarian needs. These interventions help in strengthening capabilities of schools in managing disasters and creating safer and more resilient schools for children and adults.

They also underscore the importance of further investigating DRRM in specific educational settings and regions, using cutting-edge methodologies and novel practices as part of a broader knowledge building agenda. In conclusion, the analysis reinforces education's importance in a resilient society and maintaining schools as centres of preparedness and security in communities.

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