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RECOVERY STRATEGIES UNDERTAKEN BY CAMALIGAN NATIONAL HIGH SCHOOL TO COPE WITH THE IMPACTS OF TYPHOON KRISTINE

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ABSTRACT: *In 2024, Typhoon Kristine caused extensive damage to Camaligan National High School (CNHS), severely impacting its infrastructure, inundating school facilities, and halting regular academic operations. While such disruptions are common in disaster-prone areas, CNHS's recovery trajectory proved notably distinct. Rather than relying solely on conventional, externally driven recovery models, CNHS implemented an innovative, school-led approach prioritizing grassroots leadership, rapid mobilization, and culturally responsive strategies. This research investigates the school's context-specific recovery framework through a qualitative lens, using semi-structured interviews with administrators, teachers, and community partners. The findings reveal a uniquely decentralized and proactive model that diverged from typical bureaucratic responses. Key features included the immediate activation of internal leadership teams, the integration of flexible learning delivery systems tailored to local conditions, and the early deployment of psychosocial support services, often in partnership with NGOs and community stakeholders. What sets CNHS apart is its ability to transform adversity into an opportunity for institutional learning and resilience-building, even within a resource-constrained environment. This case underscores the critical role of school autonomy and robust cross-sector collaboration in fostering sustainable educational recovery. The CNHS experience provides a replicable, policy-relevant model for the growing discourse on school-based disaster resilience, offering actionable insights for similarly vulnerable educational institutions.*

Keywords: *Disaster Recovery, School Resilience, Psychosocial Support, Educational Continuity, Infrastructure Rehabilitation*

INTRODUCTION

In 2024, Typhoon Kristine brought widespread devastation to the Bicol Region, severely impacting Camaligan National High School (CNHS) in Camaligan, Camarines Sur. The school sustained extensive infrastructure damage, including the collapse of 30% of classroom roofs, flooding in over 60% of its facilities, and total disruption of electrical and ICT systems, which significantly hampered the delivery of academic services. More critically, over 75% of the school's student population reported experiencing stress, anxiety, or trauma symptoms in the aftermath, reflecting the profound psychosocial impact of the disaster on students, teachers, and staff. These

compounded challenges highlight the urgent need for disaster-resilient educational institutions like CNHS, not only to maintain learning continuity but also to protect the emotional well-being of school communities.

This research examines the immediate recovery strategies employed by CNHS during the first four weeks after Typhoon Kristine, focusing on three main areas: (1) infrastructure rehabilitation, (2) the adoption of alternative learning modalities, and (3) the implementation of psychosocial support interventions. The goal is to evaluate the effectiveness of CNHS's localized response and its alignment with established disaster recovery frameworks.

A thematic literature review was conducted



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to situate the CNHS experience within broader educational frameworks for disaster risk reduction and management (DRRM). Drawing from regional, national, and international sources, the review identified common themes concerning school-based disaster preparedness, infrastructure resilience, psychosocial recovery, and alternative learning delivery.

Studies in the Bicol Region underscore its high exposure to typhoons and the recurring disruptions they cause in education. Guevarra et al. (2007) and Garcia (2018) emphasize the vulnerability of Albay and Sorsogon schools and the urgent need to integrate DRRM into School Improvement Plans (SIPs). Similarly, the Philippine Information Agency (PIA, 2021) noted that over 45% of public schools in Bicol lack permanent evacuation plans or access to emergency learning facilities, contributing to more extended recovery periods. Macresencio and Yabut (2022) suggest that using barangay halls as temporary classrooms and mobilizing local volunteers can mitigate service disruptions—a strategy echoed and expanded by CNHS.

At the national level, the educational impacts of Typhoon Yolanda (Haiyan) in 2013 have been widely studied. Manalo (2020) detailed how the prolonged closure of schools in Eastern Visayas, compounded by bureaucratic delays, hindered recovery for months. Delos Reyes and Ong (2015) examined the Department of Education's (DepEd) deployment of modular learning systems and temporary classrooms, supported by NGOs. Taboada (2020) and Taguines and Yu (2022) identified key barriers in low-resource schools, including limited school-level autonomy, insufficient psychosocial support, and dependence on external aid—gaps that CNHS addressed through internal initiatives and community engagement.

Internationally, comparative cases offer additional context. After the 2015 Gorkha Earthquake in Nepal, schools relied heavily on international aid to rebuild (Save the Children, 2016), while in Sri Lanka, UNESCO (2006) reported that psychosocial programs were often standardized and externally managed following the 2004 tsunami. In the U.S., Peek

and Richardson (2010) noted that Hurricane Katrina led to long-term student displacement and widespread reliance on centralized support systems. Although these models provided critical services, they often lacked the agility and local ownership demonstrated by CNHS.

What sets CNHS apart is its immediate, low-cost, and school-led recovery model. Unlike the externally driven efforts documented in previous studies, CNHS mobilized its own community networks, used barangay halls as temporary learning venues within 72 hours of the typhoon, and embedded psychosocial support into everyday class routines. The school's flexible implementation of multi-grade instruction and rotating schedules allowed classes to resume for over 80% of students within two weeks—well ahead of typical recovery timelines in similar rural schools. This localized model demonstrates a high level of improvisational capacity and resourcefulness in contrast to the slower, top-down recovery approaches noted in national and international contexts.

Three interrelated frameworks guide the analysis of CNHS's recovery efforts. The Organizational Resilience Theory (Duchek, 2020) emphasizes an institution's capacity to anticipate, respond to, and adapt to disruptions, which was applied to evaluate CNHS's internal leadership and mobilization strategies. The Disaster Management Cycle Framework (Alexander, 2002) focuses on the response and recovery phases; this guided the analysis of how infrastructure repair, stakeholder collaboration, and service restoration were executed under crisis conditions. The Educational Continuity Model (Reimers & Schleicher, 2020) highlighted the school's efforts to sustain learning and emotional support, primarily through flexible modalities and community-based approaches.

These frameworks are further contextualized within broader policy landscapes, including the Philippine Disaster Risk Reduction and Management Act of 2010 (RA 10121) and the Sendai Framework for Disaster Risk Reduction 2015–2030. CNHS's grassroots recovery strategy aligns with key principles of these policies, particularly the promotion of local capacity, participatory governance, and risk-informed

planning.

Conceptual Framework

The research findings are anchored in three interrelated frameworks: Organizational Resilience Theory, the Disaster Management Cycle (with emphasis on the response and recovery phases), and the Educational Continuity Model. These frameworks collectively provide a robust analytical lens for examining how CNHS responded to the multifaceted impacts of Typhoon Kristine and strategically restored its operations while supporting the psychosocial and academic needs of its stakeholders.



Figure 1. Conceptual Framework

As illustrated in Figure 1, these theories are situated within national and international disaster resilience frameworks, such as the Philippine Disaster Risk Reduction and Management Act of 2010 (RA 10121) and the Sendai Framework for Disaster Risk Reduction 2015–2030. CNHS's recovery strategies—marked by decentralized leadership, community engagement, and flexible learning modalities—embody key principles from these policies, including risk-informed planning, local capacity building, and inclusive recovery.

By situating CNHS's response within these established policy frameworks, the study highlights how school-based initiatives can operationalize global and national resilience goals at the local level. This convergence of theory and policy underscores the value of empowering educational institutions as active agents in disaster recovery and resilience-building.

MATERIALS AND METHODS

Research Design

The research adopts a qualitative narrative case study approach to enable an in-depth exploration of the recovery strategies implemented at Camaligan National High School (CNHS) after Typhoon Kristine. The narrative case study design provides a holistic understanding of CNHS's response to the immediate challenges posed by the disaster, particularly in terms of infrastructure restoration, educational continuity, and psychosocial support. In addition, a descriptive research approach was integrated to document the extent of damage and assess the effectiveness of the recovery strategies.

Sampling Procedure

The study employed a purposive sampling technique to identify individuals with direct involvement and experiential knowledge of the school's recovery efforts following the typhoon. A total of 15 participants were selected, comprising three school administrators, five teachers, four students, and three external stakeholders (two local government unit (LGU) representatives and one from a non-governmental organization (NGO)). Participants were chosen based on their roles during the recovery phase, their proximity to the school during the disaster, and their willingness to contribute meaningful insights. This approach ensured a diverse representation of institutional and community perspectives, contributing to a comprehensive understanding of the recovery process.

However, it is important to acknowledge the limitations identified during the review process. The relatively small sample size and the exclusion of parents were valid concerns raised by reviewers. While the study successfully captured insights from key institutional actors and students, the absence of parental voices may have limited the scope of the findings, particularly in understanding household-level challenges, support systems, and parental involvement in the school's recovery and continuity of education.

Future iterations of this study will address these limitations by expanding the sample to include parents and other community members. Doing so will enhance data triangulation, provide a fuller picture of community-based recovery, and strengthen the study's contribution to disaster risk reduction and management in educational settings.

Data Gathering Procedure

To gain a comprehensive understanding of the recovery strategies implemented by CNHS following Typhoon Kristine, the study employed a combination of in-depth interviews, focus group discussions (FGDs), and on-site observations over 3 weeks. These methods captured both collective experiences and individual reflections, offering valuable insights into the school's response.

Focus group discussions were conducted with students and teachers to explore shared experiences, challenges, and perceptions of the recovery efforts. Each session, lasting between 45 minutes and an hour, facilitated open conversations that highlighted common concerns and coping mechanisms within the school community. In parallel, individual interviews were held with school leaders and local government officials to gain a deeper understanding of decision-making processes, institutional responses, and policy considerations in the aftermath of the typhoon. On-site observations were also conducted to document the extent of physical damage, ongoing infrastructure repairs, and the implementation of support programs, providing firsthand evidence of the recovery process.

Throughout the research process, ethical protocols were strictly followed. Informed consent was obtained from all participants, who were assured of voluntary participation, confidentiality, and the right to withdraw at any time. These measures ensured participant protection and upheld the integrity of the study.

Data Analysis

To analyze the qualitative data collected from interviews, focus group discussions (FGDs),

and on-site observations, the study employed thematic analysis to identify, analyze, and interpret key patterns. This method allowed for a structured approach to understanding the recovery strategies implemented by Camaligan National High School (CNHS) following Typhoon Kristine.

The process began with transcribing and coding all interviews and FGDs, ensuring that meaningful insights were systematically documented. Responses were then systematically analyzed to identify recurring themes and significant insights. From these codes, the data were categorized into major themes: "Infrastructure Restoration," "Educational Continuity," and "Psychosocial Support." These themes provided a clear framework for understanding how CNHS addressed the immediate challenges brought about by the disaster.

To ensure validity and consistency, researchers cross-referenced data across multiple sources. Information from interviews was compared with FGDs and on-site observations to ensure alignment and accuracy. This triangulation method helped verify key insights, reducing bias and strengthening the credibility of the study's conclusions. By employing thematic analysis, this research captured a nuanced understanding of CNHS's recovery strategies, highlighting both successes and areas for improvement. The systematic identification of themes provided a strong foundation for assessing the school's response and for informing future disaster preparedness initiatives.

Ensuring Trustworthiness and Credibility

Multiple validation strategies were implemented to ensure the rigor and trustworthiness of the study. Triangulation minimized biases by integrating diverse data sources and participant perspectives. Member checking enabled selected participants to verify the accuracy of interpretations, ensuring consistency with their experiences. Peer debriefing provided external feedback on coding and thematic development, enhancing objectivity. Furthermore, the researcher maintained a reflexivity journal to document personal insights, decisions, and potential biases,

thereby promoting transparency. Collectively, these strategies reinforced the reliability and validity of the study's findings on CNHS's post-disaster recovery strategies.

RESULTS AND DISCUSSIONS

This section presents an in-depth analysis of the recovery strategies implemented by Camaligan National High School (CNHS) in the aftermath of Typhoon Kristine, highlighting the school's adaptive capacity and resilience-building efforts. The discussion is organized thematically and supported by empirical data, including stakeholder insights, narrative accounts, and effectiveness evaluations. Key areas explored include infrastructure rehabilitation, educational continuity, psychosocial support, collaborative governance, and the challenges encountered during implementation. Each thematic area is interpreted through established theoretical lenses such as the Disaster Management Cycle, Organizational Resilience Theory, and the Educational Continuity Model, providing a comprehensive understanding of the school's disaster recovery performance and its implications for education-sector resilience planning.

Infrastructure Rehabilitation and Resource Mobilization

The data in Table 1 highlights the prioritization of infrastructure rehabilitation at

Table 1. Infrastructure Rehabilitation and Resource Mobilization

Recovery Action	Stakeholder Involvement	Narrative Summary
Classroom Repair with Salvaged Materials	Teachers	Immediate efforts using tarpaulins and salvaged materials.
Temporary Shelters	LGUs	Provision of galvanized sheets and temporary shelters within three days.
Partial Infrastructure Restoration	NGOs	Support for minor rehabilitation due to funding limitations.

CNHS following Typhoon Kristine, with various stakeholders contributing to the recovery efforts. Teachers led the initial response by repairing classrooms using salvaged materials and available resources, demonstrating resilience and adaptability despite limited supplies. The Local Government Unit (LGU) provided support through damage assessments and logistical assistance, though delays in the provision of materials hindered immediate reconstruction. Non-Governmental Organizations (NGOs) also provided minor infrastructural support, but resource constraints prevented large-scale rehabilitation.

This recovery response aligns with the Response and Recovery Phases of the Disaster Management Cycle, where rapid action is essential for restoring functionality. However, the challenges encountered, including delays in external aid and the absence of pre-positioned materials, underscore the need for stronger contingency planning and disaster preparedness within educational institutions. The reliance on community-level efforts proved essential, but the partial restoration of infrastructure emphasizes the importance of long-term resilience strategies to ensure schools can recover more effectively in future disasters.

Educational Continuity Measures

Table 2 presents the innovative strategies CNHS implemented to maintain academic continuity despite the disrupted learning environment. Modular learning was swiftly introduced for students without access to digital tools, effectively addressing the digital divide. Rotational class scheduling optimized the limited

Table 2. Educational Continuity Measures

Continuity Strategy	Target Group	Narrative Summary
Modular Learning	Students with no digital access	Ensured continuity despite digital divide.
Rotational Class Scheduling	All students	Maximized classroom space use.
Peer Tutorial System	Senior Students	Promoted learning support through peer education.

usable classroom space and minimized class disruption.

Additionally, peertutorial systems organized by senior students enabled collaborative learning and provided both academic and emotional support to their peers. These measures are consistent with the principles of the Educational Continuity Model, which emphasizes adaptive pedagogy and flexible learning environments in post-disaster scenarios. The school’s ability to rapidly deploy varied strategies demonstrated institutional agility and dedication to ensuring that learning continued despite infrastructural and logistical setbacks. However, the long-term sustainability of these interventions remains uncertain without stable infrastructure and the integration of digital learning platforms.

Psychosocial Support Interventions

Table 3 outlines the psychosocial interventions implemented by CNHS, which became an essential pillar in the school’s recovery strategy. Group therapy sessions conducted by the guidance office in partnership with NGOs

Table 3. Psychosocial Support Interventions

Support Program	Stakeholder Involvement	Narrative Summary
Group Therapy Sessions	Guidance Office & NGO	Mental health support for students.
Mental Health Screening	NGO	Assessment to identify those needing intervention.
Debriefing Activities	Teachers & Guidance Office	Contributed to students feel secure to resume learning.

provided safe spaces for students to express their emotions and rebuild social bonds. Mental health screening identified at-risk individuals who required focused intervention, while debriefing activities led by teachers and counselors eased students’ emotional transition back into academic life.

These psychosocial initiatives align with the core principles of Organizational Resilience Theory. This strategic integration underscores

the multidimensional nature of disaster recovery, particularly in enhancing adaptive capacity and emotional well-being in institutions affected by disasters. The strategic focus on mental health contributed significantly to restoring normalcy and student participation. Such interventions go beyond physical recovery and highlight the importance of emotional resilience as an integral component of educational disaster risk reduction and recovery planning.

Evaluation of Effectiveness Using Benchmark Criteria

Table 4 presents a systematic evaluation of CNHS’s recovery strategies using recognized benchmarks, including the Educational Continuity

Table 4. Evaluation of Effectiveness Using Benchmark Criteria

Recovery Strategy	Effectiveness Rating	Benchmark Reference
Immediate Learning Resumption	High	Educational Continuity Model
Infrastructure Restoration (Partial)	Moderate	Disaster Management Cycle
Psychosocial Support	High	Organizational Resilience Theory
Stakeholder Engagement	High	Collaborative Governance Framework
Long-Term Learning Recovery	Moderate	Learning Resilience Frameworks

Model, Disaster Management Cycle, and Organizational Resilience Theory. Immediate learning resumption, psychosocial support, and stakeholder engagement received the highest effectiveness ratings, indicating a strong institutional response and community collaboration. However, infrastructure restoration and long-term learning recovery were rated as moderately effective, indicating gaps in preparedness and sustainability.

While CNHS demonstrated commendable initiative and adaptability, future disaster

preparedness should incorporate digital integration, proactive infrastructure investments, and continuous learning support mechanisms to further enhance institutional resilience. The benchmark-driven assessment also highlights which strategies can serve as replicable models for other schools in hazard-prone areas.

Comparative Stakeholder Perspectives

Table 5 illustrates the varying perspectives of teachers, students, and LGU/NGO officials regarding the recovery experience at CNHS.

National High School (CNHS) after Typhoon Kristine underscores the critical role of adaptive leadership, community collaboration, and holistic planning in building educational resilience. Rather than recounting isolated recovery actions, the school's integrated approach, balancing immediate learning continuity, emotional well-being, and stakeholder engagement, demonstrates how resilience is cultivated through processes, relationships, and shared commitment.

While the rapid mobilization of teachers, local government units, and NGOs enabled CNHS to resume operations quickly, the recovery

Table 5. Comparative Stakeholder Perspectives

Theme	Teachers	Students	LGU/NGO Officials
Infrastructure Damage	Operational concern	Disruption of routines	Logistics priority
Learning Continuity	Instructional adjustments	Coping with new learning modes	Supportive role in material aid
Psychosocial Recovery	Managing trauma in class	Need for emotional support	Facilitation of mental health programs
Community Collaboration	Parent-teacher partnerships	Appreciation for community efforts	Mobilization of resources

Teachers emphasized operational challenges, including instructional adjustments and managing trauma in classrooms. Students, on the other hand, expressed concerns over disrupted routines and their need for emotional support, while also showing appreciation for community efforts. LGU and NGO officials focused primarily on logistical priorities and on facilitating the delivery of material and psychosocial aid.

This comparative analysis reveals the multidimensional nature of disaster recovery in the education sector and emphasizes the importance of inclusive, participatory approaches. Each stakeholder's unique contribution to school resilience offers valuable insights toward a more holistic understanding of what constitutes effective recovery. Integrating these perspectives into future disaster risk reduction planning will enhance responsiveness and ensure that recovery efforts meet the diverse needs of affected populations.

CONCLUSION

The recovery experience of Camaligan

journey revealed underlying vulnerabilities, particularly in infrastructure readiness and institutional preparedness. The school's reliance on improvised solutions highlighted both the strength of grassroots initiatives and the need for sustained, system-level support.

The findings emphasize that, for disaster-affected schools, resilience is not achieved solely through reactive infrastructure repairs. It requires embedding disaster risk reduction into everyday practices, planning proactively for continuity of education, and institutionalizing mental health support systems. In doing so, schools can not only recover more effectively but also emerge stronger and more prepared for future disruptions.

RECOMMENDATIONS

Camaligan National High School should adopt a structured approach to enhance disaster resilience and improve future crisis response.

1. Strengthen Infrastructure Resilience.
- The school must begin by strengthening

its infrastructure resilience, a critical step in minimizing disruptions to education. Within the next 6 to 12 months, CNHS should conduct a pre-disaster risk assessment to identify structural vulnerabilities and allocate contingency budgets for necessary retrofitting. Reinforcing roofing, implementing flood-proofing measures, and upgrading classroom structures will provide long-term protection against severe weather. This initiative will require collaboration between the school administration, the Department of Education (DepEd), the Local Government Unit (LGU), and engineering experts to ensure all safety standards are met.

2. Ensure Educational Continuity. Beyond physical structures, ensuring educational continuity during disasters is equally important. Within the next 12 to 18 months, CNHS should invest in a scalable digital learning infrastructure to allow students to continue their education remotely when necessary. Training teachers in digital competencies and integrating blended learning strategies will provide more flexibility in delivering lessons. Establishing a repository of offline learning materials, including printed modules and pre-recorded lessons, can further support students during school closures. This initiative will require the involvement of CNHS administrators, DepEd, the Parent-Teacher Association (PTA), and private sector partners who can provide funding and technical expertise.

3. Prioritize Psychosocial Recovery Programs. Recognizing the emotional toll disasters have on students and teachers, CNHS must prioritize psychosocial recovery programs. Within the next 3 to 6 months, the school should establish a school-based mental health support system. This system should include regular counseling sessions following a disaster event, peer support groups, and resilience training for educators, all of which will help the school community cope with post-disaster trauma. Partnerships with LGUs, NGOs, and healthcare providers will be essential in ensuring sustained access

to mental health resources beyond the initial recovery phase.

4. Enhance Stakeholder Collaboration. To improve disaster response coordination, CNHS should enhance stakeholder collaboration within the next year. Formalizing partnerships through memoranda of understanding (MOUs) with LGUs, NGOs, and private organizations will facilitate a more structured approach to disaster recovery. Establishing a Community-Based Disaster Response Committee will ensure that all key players—educators, parents, local businesses, and government agencies—are involved in preparedness planning and response efforts. This initiative will require active participation from school leaders, disaster risk reduction officers, and community representatives to maximize resources and expertise.

5. Implement a Monitoring and Evaluation (M&E) System. Finally, to assess the effectiveness of recovery strategies, CNHS must implement a Monitoring and Evaluation (M&E) system within the next 12 months. By developing post-disaster assessment tools, conducting regular recovery audits, and organizing stakeholder reflection sessions, the school can continuously refine its disaster preparedness and response plans. The school administration, DepEd, and external Disaster Risk Reduction and Management (DRRM) experts will lead this ongoing evaluation to ensure accountability and continuous improvement.

By integrating these measures, CNHS can build a safer, more resilient learning environment, ensuring that students and educators are better prepared for future disasters.

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