School Facility Management and Maintenance Practices in Rural Elementary Schools in the Schools District of Jose Dalman, Zamboanga Del Norte, Philippines

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ABSTRACT

This qualitative case study explored the management and maintenance of school facilities in rural elementary schools within the Schools District of Jose Dalman, Zamboanga del Norte, Philippines. The study aimed to examine the planning, implementation, monitoring, and maintenance practices employed by school personnel, as well as the challenges, experiences, and resource-related concerns encountered in managing school facilities. Anchored on School Infrastructure Quality Theory, Systems Theory, and Resource Dependence Theory, the study emphasized the importance of safe and functional learning environments, stakeholder collaboration, and external resource support in sustaining school infrastructure. Thirteen participants composed of teachers, master teachers, substitute teachers, and school principals were purposively selected. Data were gathered through in-depth interviews and analyzed using thematic analysis. Findings revealed that school facility management in rural schools is characterized by collaborative and adaptive practices involving school personnel, parents, local government units, and community stakeholders. Preventive and corrective maintenance activities such as regular cleaning, inspections, minor repairs, and emergency responses were commonly implemented despite limited resources. However, participants encountered persistent challenges including insufficient maintenance funds, shortage of materials and skilled labor, aging infrastructure, geographic isolation, and weather-related damages. These constraints affected the safety, usability, and conduciveness of learning environments, sometimes disrupting classes and instructional delivery. Despite these challenges, schools demonstrated resilience through stakeholder partnerships, community participation, Brigada Eskwela activities, prioritization strategies, and localized repair initiatives. The study concludes that effective school facility management in rural schools requires sustainable funding, strengthened stakeholder collaboration, proactive maintenance systems, and responsive infrastructure policies to ensure safe, functional, and supportive learning environments for learners and teachers.

Keywords: school facility management, preventive maintenance, rural elementary schools, educational infrastructure, stakeholder collaboration

INTRODUCTION

The quality of school facilities remains a fundamental component in ensuring effective teaching and learning in basic education. Schools are not merely institutions for curriculum implementation; they are learning environments that shape learners' academic engagement, physical safety, psychosocial well-being, and educational experiences. Adequate classrooms, functional sanitation systems, safe school grounds, sufficient furniture, reliable water systems, and well-maintained learning spaces contribute significantly to student participation, teacher effectiveness, and overall school performance.[1] Conversely, deteriorating infrastructure, overcrowded classrooms, poor ventilation, and inadequate maintenance practices negatively affect concentration, learner motivation, attendance, and instructional delivery.[2]

Globally, educational infrastructure management has become a major concern due to aging facilities, increasing student populations, climate-related hazards, and budgetary constraints.[3] Public schools, particularly in rural

communities, often struggle with limited maintenance funding, delayed repair interventions, shortage of technical personnel, and insufficient infrastructure support systems.[3] In developing countries, these challenges are further intensified by geographic isolation and unequal resource distribution, resulting in deteriorating learning environments and reduced educational quality.[5]

In the Philippine context, school infrastructure remains one of the persistent concerns in basic education. Despite continuous efforts by the Department of Education to improve educational facilities through infrastructure programs and maintenance initiatives, disparities in school facility conditions continue to exist, particularly in rural and geographically isolated schools.[6] Philippine public schools continue to experience classroom shortages, inadequate water and sanitation facilities, congested learning spaces, and aging infrastructure.[6] Moreover, many schools face recurring maintenance problems caused by environmental exposure, calamities, insufficient repair budgets, and limited technical assistance.[7]

The Department of Education has implemented several policies and guidelines aimed at strengthening school infrastructure management and maintenance. DepEd Memorandum No. 68, s. 2002 on the Revised Implementing Guidelines for the School-Based Repair and Maintenance Scheme emphasized the importance of preventive maintenance in prolonging the lifespan of school buildings and ensuring the safety of learners and teachers.[8] The policy underscored that school heads should assume primary responsibility in leading maintenance efforts and coordinating repair activities within schools. Similarly, the DepEd School Building Program and Physical Facilities guidelines continue to promote maintenance planning, facility monitoring, and infrastructure sustainability in public schools. These policies recognize that effective school maintenance requires coordinated leadership, stakeholder participation and efficient resource utilization.

School facility management refers to the systematic planning, organization, implementation, coordination, monitoring, and sustainability of school infrastructure to ensure functionality, safety, and usability. Effective facility management involves not only maintenance activities but also leadership practices, resource mobilization, stakeholder coordination, and long-term planning mechanisms. In many Philippine rural schools, school heads and teachers perform multiple roles related to facility management because of limited maintenance personnel and insufficient technical support.[9] Teachers and school administrators frequently become directly involved in conducting facility inspections, coordinating repairs, mobilizing community support, and addressing infrastructure deficiencies.

Maintenance practices, meanwhile, include preventive and corrective activities intended to preserve, restore, and sustain school facilities. Preventive maintenance consists of regular inspections, cleaning, minor repairs, and scheduled safety checks designed to minimize deterioration and prevent major damage. Corrective maintenance involves repair and rehabilitation activities conducted after facilities become damaged or unsafe. Studies have shown that effective maintenance systems reduce long-term infrastructure costs, improve safety conditions, and support the continuity of educational activities.[3] However, maintenance systems in many rural schools remain reactive rather than preventive due to limited budgets, delayed interventions, and dependence on external support systems.[5]

Recent Philippine studies highlighted the continuing challenges associated with school infrastructure and maintenance practices. Significant disparities in infrastructure quality remain evident across regions, particularly in remote and underserved communities.[6] Many schools continue to experience inadequate water, sanitation, hygiene, and electrical facilities.[6] Maintenance interventions have likewise been shown to significantly improve the usability and cleanliness of sanitation facilities in Philippine public schools, demonstrating the importance of systematic operation and maintenance systems in sustaining school infrastructure .[10]

Studies conducted outside the Philippines likewise reinforced the significance of infrastructure maintenance in educational institutions. Aging public-school infrastructure and inadequate maintenance systems negatively affect educational quality and safety.[3] Budget constraints, deferred maintenance, and increasing infrastructure deterioration remain common challenges among public schools.[3] Regular inspections, maintenance prioritization, and resource allocation mechanisms are also essential for sustaining school buildings and ensuring infrastructure safety.[11]

School infrastructure conditions have also been associated with teacher morale, learner participation, and educational outcomes. Research indicates that well-maintained learning environments contribute positively to student engagement, academic performance, and teacher productivity.[2] In contrast, poorly maintained facilities increase health risks, absenteeism and instructional disruptions.[1] In rural schools where educational resources are already constrained, inadequate maintenance practices may further intensify inequalities in educational access and learning opportunities.

In rural Philippine schools, school facility management extends beyond administrative responsibilities and becomes a collaborative process involving school heads, teachers, parents, local government units, and community stakeholders. Community participation and stakeholder support are often necessary because many schools lack sufficient maintenance funds and technical personnel.[9] Brigada Eskwela initiatives, parent volunteerism, and local government partnerships frequently become vital mechanisms for sustaining school infrastructure. These realities demonstrate that school facility management in rural contexts is not solely an operational concern but also a leadership, governance and resource mobilization issue.

Within the Schools District of Jose Dalman, rural elementary schools operate under varying infrastructural conditions. While some schools benefit from active local government support and community participation, others continue to experience deteriorating classrooms, inadequate sanitation systems, limited water supply, and insufficient maintenance resources. Geographic isolation further complicates infrastructure management because schools located far from municipal centers often encounter delayed repair services and limited access to maintenance assistance. Consequently, school heads and teachers are compelled to develop localized strategies and coping mechanisms to maintain safe and functional learning environments despite limited resources.

Existing literature on educational infrastructure primarily focuses on infrastructure adequacy, facility assessment, and quantitative measurements of school resources. Although these studies provide valuable information regarding infrastructure shortages and maintenance needs, they often fail to capture the actual experiences, challenges, and practices of school personnel directly responsible for facility management. Limited qualitative studies have explored how school heads and teachers navigate the complexities of school facility management in rural contexts where financial limitations, stakeholder dependence, and infrastructural constraints significantly shape maintenance practices.

This study addressed this research gap by employing a qualitative case study approach to examine the management of school facilities and maintenance practices in rural elementary schools within the Schools District of Jose Dalman. Rather than merely assessing the extent of maintenance practices quantitatively, the study sought to explore the lived experiences, strategies, challenges, and coping mechanisms of school heads and teachers involved in managing school infrastructure. Through an in-depth exploration of participants' narratives and experiences, the study aimed to generate contextualized insights regarding how school facility management occurs within resource-constrained rural educational environments.

The study was anchored on three interrelated theoretical perspectives: School Infrastructure Quality Theory, Systems Theory, and Resource Dependence Theory. School Infrastructure Quality Theory posits that the condition and quality of school facilities directly influence learner engagement, teaching effectiveness, and educational outcomes.[2] The theory emphasizes that safe, functional, and well-maintained school environments contribute positively to academic achievement and institutional performance. Systems Theory conceptualizes organizations as interconnected systems composed of interdependent components whose interactions influence organizational outcomes.[12] In school facility management, coordination among school heads, teachers, parents, local government units, and community stakeholders becomes essential for sustaining infrastructure systems. Meanwhile, Resource Dependence Theory explains that organizations rely on external resources and support systems for survival and effectiveness [13]. Rural schools often depend on maintenance funding, local government assistance, and community partnerships to address infrastructure needs and maintenance concerns.

The integration of these theories provides a comprehensive framework for understanding school facility management as both an organizational and contextual process. School Infrastructure Quality Theory emphasizes

the educational significance of maintaining conducive learning environments, Systems Theory highlights stakeholder coordination and collaborative management processes, and Resource Dependence Theory explains how external support and resource availability shape maintenance practices and infrastructure sustainability. Together, these perspectives frame the experiences of school heads and teachers as they manage school facilities amidst infrastructural limitations and resource constraints.

The significance of this study lies in its potential contribution to educational management, infrastructure policy development, and rural school improvement. By documenting the lived experiences and practices of school heads and teachers, the study may provide valuable insights for strengthening school facility management systems and maintenance policies in rural elementary schools. The findings may assist school leaders in improving planning, coordination, monitoring, and stakeholder mobilization strategies related to infrastructure management. Likewise, the study may support the Department of Education and local government units in designing context-sensitive maintenance interventions and resource allocation mechanisms that address the infrastructural realities of geographically isolated schools.

Furthermore, the study contributes to the broader discourse on educational infrastructure management by emphasizing the importance of collaborative leadership, community participation, and sustainable maintenance systems in rural educational environments. Understanding the realities experienced by rural educators may support the development of responsive infrastructure policies that recognize the operational challenges of underserved schools. Ultimately, improving school facility management contributes not only to infrastructure sustainability but also to the creation of safe, inclusive, and supportive learning environments that enhance educational quality and learner well-being.

METHODS

Research Design

This study employed a qualitative case study design to explore school facility management and maintenance practices in rural elementary schools within the Schools District of Jose Dalman. The design enabled an in-depth examination of the experiences, practices, challenges, and strategies of school heads and teachers in managing and sustaining school facilities within their real-life contexts. Through detailed and contextualized accounts, the study focused on participants' perspectives and experiences regarding infrastructure management, including how they address maintenance responsibilities, mobilize resources, collaborate with stakeholders, and sustain school facilities despite limited support and infrastructural challenges.

Research Environment

The study was conducted in selected rural elementary schools in the Schools District of Jose Dalman, Zamboanga del Norte, Philippines. The district comprises schools situated in geographically dispersed barangays characterized by limited access to infrastructure support services, maintenance resources, transportation, and technical assistance. Many schools within the district operate under varying infrastructural conditions, including differences in classroom availability, sanitation facilities, water systems, electrical utilities, and school grounds.

The rural context of the district provided an appropriate setting for examining school facility management and maintenance practices because schools often face challenges associated with resource scarcity and geographic isolation. Maintenance efforts frequently rely on the initiative of school heads, teachers, parents, and local government units. These contextual conditions offered rich opportunities for understanding how rural educators manage and sustain school infrastructure within constrained environments.

Participants of the Study

The participants of the study consisted of school heads and teachers from selected rural elementary schools within the district. These participants were purposively selected because of their direct involvement in school facility management and maintenance activities. School heads were included because they are primarily

responsible for planning, supervising, and coordinating facility-related concerns within schools. Teachers were included because they actively participate in monitoring classroom conditions, initiating repairs, and supporting maintenance activities.

The inclusion criteria required participants to: (1) be currently employed in a rural elementary school within the district; (2) have direct involvement in school facility management or maintenance activities; and (3) be willing to participate voluntarily in the study. Participants with substantial experience in school operations and maintenance responsibilities were prioritized to ensure the richness and relevance of the gathered data.

The study utilized a small number of participants consistent with qualitative case study research, where emphasis is placed on depth of understanding rather than breadth of coverage. Data collection continued until data saturation was achieved, meaning no new significant information or themes emerged from subsequent interviews.

The participants of this study were composed of thirteen (13) school personnel from rural elementary and secondary schools in the Schools District of Jose Dalman and nearby areas in Zamboanga del Norte, Philippines. They included teachers, master teachers, and school heads with varying positions, years of service and institutional assignments. Most participants hold the position of Teacher III, with a few serving as Teacher I, Master Teacher I, and School Principal I. Their years of service range from as short one year to as long as thirty-five years, reflecting a diverse mix of novice, mid-career, and highly experienced personnel.

Participant 1 was a Teacher III with 12 years of service. Participant 2 was also a Teacher III with 12 years of experience. Participant 3 was a Teacher III with 5 years of service. Participant 4 was a Teacher III with 11 years of service. Participant 5 was a Teacher III with 7 years of experience. Participant 6 was a Teacher III with 9 years of service. Participant 7 was a Teacher III with 5 years of service. Participant 8 was Teacher 1 with one year of service, representing the least experienced participant in the study. Participant 9 was a Master Teacher I with 23 years of service. Participant 10 was a School Principal I with 35 years of experience, representing the most senior participant in terms of length of service. Participant 11 was a Teacher III with 25 years of service. Participant 12 was a School Principal I with 18 years of experience. Participant 13 was a Teacher I with 2 years of service. Collectively, these participants represented a balanced combination of instructional personnel and school leaders whose varied experiences enriched the understanding of school facility management and maintenance practices in rural school settings.

Sampling Technique

Purposive sampling was employed in selecting participants for the study. Purposive sampling is a non-probability sampling technique commonly used in qualitative research to identify participants who possess specific knowledge, experiences, and characteristics relevant to the research problem. This sampling method enabled the researcher to intentionally select school heads and teachers who had firsthand experiences in managing and maintaining school facilities.

The use of purposive sampling ensured that participants could provide detailed narratives and meaningful insights regarding planning processes, maintenance practices, stakeholder coordination, resource mobilization, and challenges encountered in sustaining school infrastructure. The technique was considered appropriate because the study aimed to obtain rich and contextualized data rather than statistical representation.

Research Instrument

The primary instrument used in the study was a researcher-developed semi-structured interview guide. The interview guide contained open-ended questions designed to explore participants' experiences, practices, and perceptions regarding school facility management and maintenance. Semi-structured interviews allowed flexibility in probing participants' responses while ensuring alignment with the objectives of the study.

The interview questions focused on key areas such as planning and organization of maintenance activities, implementation and coordination practices, monitoring and evaluation systems, preventive and corrective maintenance experiences, resource utilization, stakeholder support, and challenges encountered in maintaining school facilities. Follow-up questions were used to clarify responses and encourage participants to elaborate on significant experiences and practices.

To ensure content validity, the interview guide was reviewed by experts in educational management and qualitative research. Revisions were incorporated based on their suggestions to improve clarity, relevance, and alignment with the research objectives. Prior to the actual data collection, the interview guide was pilot tested with individuals possessing similar characteristics to the target participants to assess comprehensibility and appropriateness of the questions.

Data Gathering Procedure

Prior to data collection, permission to conduct the study was secured from the Schools Division Office and concerned school heads within the Schools District of Jose Dalman. After obtaining approval, the researcher coordinated with school administrators regarding the schedule and conduct of interviews.

Potential participants were informed about the purpose of the study, research procedures, confidentiality measures, and voluntary nature of participation. Informed consent was obtained before the interviews were conducted. Participants were likewise informed of their right to withdraw from the study at any point without any negative consequences.

Data were gathered primarily through in-depth semi-structured interviews conducted face-to-face at locations convenient and comfortable for the participants. With participants' permission, interviews were audio-recorded to ensure accurate documentation of responses. Field notes were also taken during interviews to capture nonverbal cues, contextual observations, and emerging insights relevant to the study.

Each interview lasted approximately 45 to 60 minutes. The researcher transcribed the recorded interviews verbatim immediately after data collection to preserve accuracy and completeness of information. Transcriptions were reviewed repeatedly to ensure familiarity with the data and facilitate analysis.

Data Analysis

The collected data were analyzed using thematic analysis. Thematic analysis is a qualitative analytic method used to identify, organize, and interpret recurring patterns and themes within textual data. The researcher followed a systematic process of data familiarization, coding, categorization, theme generation, and interpretation.

Initially, interview transcripts were read multiple times to gain a comprehensive understanding of participants' narratives. Significant statements and meaningful units related to school facility management and maintenance practices were identified and coded. Similar codes were grouped into categories, from which broader themes and subthemes emerged.

The identified themes were interpreted in relation to the theoretical framework and existing literature on school facility management and maintenance practices. To enhance credibility, member checking was conducted by allowing selected participants to review summaries of their responses and verify the accuracy of interpretations. Peer debriefing and consultation with qualitative research experts were also undertaken to ensure rigor and trustworthiness of the findings.

Ethical Considerations

The study adhered to established ethical principles throughout the research process. Participation in the study was entirely voluntary, and informed consent was obtained from all participants prior to data collection.

Participants were informed about the objectives of the study, the procedures involved, and their right to refuse or withdraw participation at any stage.

Confidentiality and anonymity were strictly maintained. Participants' identities and school affiliations were not disclosed in the study, and pseudonyms were used in presenting interview excerpts and findings. Audio recordings, transcripts, and research documents were securely stored and were accessible only to the researcher.

The study ensured that no physical, emotional, or psychological harm was inflicted upon participants. Respect for participants' dignity, privacy, and perspectives was upheld throughout the conduct of the research. All information gathered was used solely for academic and research purposes.

RESULTS

The study generated four themes, namely: (1) collaborative and policy-guided planning practices; (2) coordinated and participatory maintenance implementation; and (3) preventive and corrective maintenance practices for safety and functionality; (4) resource constraints, environmental pressures and systemic challenges in school facility management

Collaborative and Policy-Guided Planning Practices

The findings revealed that school facility management and maintenance activities in rural elementary schools in the Schools District of Jose Dalman are planned and organized through collaborative, policy-guided, and needs-based processes. School personnel emphasized that maintenance planning is anchored on established DepEd policies, School Improvement Plans (SIP), Annual Implementation Plans (AIP), and other institutional guidelines that provide structure and direction to maintenance activities. Participants explained that these policies help schools identify priorities, allocate available resources, and ensure accountability in maintaining school facilities. As shared by P1, "According to DepEd policies," while P9 stated that maintenance activities are "AIP and IPR based." These narratives suggest that facility management is integrated into the broader operational and developmental goals of the school rather than treated as an isolated task. The reliance on formal planning documents reflects the schools' efforts to institutionalize maintenance practices despite financial and logistical limitations.

The findings further showed that planning and organization are highly collaborative processes involving school heads, teachers, non-teaching personnel, parents, PTA officers, barangay officials, and other stakeholders. Participants viewed maintenance activities as shared responsibilities that require cooperation among members of the school and community. P2 shared that "Admin office and the teachers and including non-teaching personnel" participate in planning activities, while P10 explained that "The school head, teachers, PTA officers, parents, and barangay officials are involved." These responses indicate that rural schools depend heavily on collective participation and community support in sustaining school facilities. The collaborative nature of planning reflects the communal culture present in rural communities where educational concerns are addressed through shared effort and cooperation.

The study also revealed that maintenance priorities are identified according to severity, urgency, and safety considerations. School personnel reported conducting inspections and assessments to determine which facilities require immediate attention. P3 explained that priorities are identified "According to severity," while P15 stated that maintenance concerns are addressed based on "urgency, safety, and available resources." These narratives imply that schools adopt practical and adaptive decision-making processes in managing limited resources. Facilities that pose safety hazards to learners and teachers are prioritized to ensure continuity of classes and protection of school stakeholders. This further demonstrates that school personnel are highly conscious of the relationship between safe physical environments and effective teaching-learning processes.

Moreover, maintenance activities are organized through scheduled meetings, coordinated planning sessions, and stakeholder consultations. Participants described how maintenance schedules are communicated among teachers and stakeholders to ensure smooth implementation of activities. Schools also align maintenance schedules with

available budgets, school activities, and community participation. Such practices indicate that organization and communication are essential components of effective facility management in rural schools.

Theme 2 Coordinated and Participatory Maintenance Implementation

The findings revealed that maintenance practices in rural elementary schools in the Schools District of Jose Dalman are implemented through coordinated, participatory, and monitoring-oriented processes involving school personnel and community stakeholders. Maintenance activities are not solely dependent on school administrators but are collectively carried out through teamwork, delegation of responsibilities, and continuous communication among teachers, staff, parents, local government units, and community members. Despite limited resources, schools demonstrate organizational adaptability and community cooperation to maintain safe, clean, and functional learning environments.

Subtheme 2.1 Structured and Collaborative Implementation of Maintenance Activities

This subtheme highlights how maintenance activities are systematically implemented through scheduled cleaning, inspections, repairs, and coordinated teamwork among school personnel and stakeholders. Schools adopt organized approaches in carrying out maintenance activities to ensure that facilities remain functional and conducive to learning.

Participants described that maintenance tasks are often conducted through routine schedules, assigned responsibilities, and collaborative labor. P2 explained that maintenance activities are "carried out through a structured process" involving routine cleaning, minor repairs, and regular inspections supervised by the Facility Management Officer. Similarly, P5 stated that maintenance activities are implemented through "scheduled cleaning and repair work by maintenance staff" with supervision from school administration. Meanwhile, P4 emphasized the importance of teamwork, sharing that maintenance is carried out "through teamwork among school personnel, parents and community members."

Other participants highlighted adaptive and practical approaches in implementing repairs. P9 explained, "We assign tasks to people who can help, like asking skilled neighbors or parents to do the repairs," while P10 shared that tasks are distributed according to individuals' abilities to ensure efficient completion of work. These narratives suggest that maintenance implementation in rural schools is highly collaborative and resource-dependent. Schools maximize available human resources and local expertise to address infrastructural needs despite financial limitations. The findings further indicate that maintenance activities are embedded within a culture of "bayanihan", where collective participation becomes essential in sustaining school facilities.

Subtheme 2.2 Coordination through Communication, Delegation and Shared Responsibilities

This subtheme reflects how school personnel coordinate maintenance tasks through meetings, role delegation, regular communication, and collaborative decision-making. Coordination mechanisms ensure that responsibilities are clearly assigned and maintenance activities are systematically monitored.

Participants emphasized the importance of communication and organized delegation in coordinating maintenance work. P2 explained that coordination occurs through "regular meetings, official memos, work orders and group communications," while P7 stated that responsibilities are divided using "a school maintenance calendar and an official monitoring matrix." Similarly, P8 shared that coordination happens through "meetings, announcements, or direct communication" to ensure proper implementation of maintenance activities.

Several participants described coordination as a collaborative leadership process. P10 noted, "The principal assigns work to each teacher and staff based on what they can do," while P11 explained that tasks are distributed according to the skills of teachers and staff members. These narratives indicate that effective coordination in rural schools relies heavily on interpersonal communication, collaborative leadership, and trust among school personnel. The findings further imply that schools compensate for limited formal maintenance systems through strong organizational cooperation and shared accountability.

Subtheme 2.3 Stakeholder Participation and Community Support in Maintenance Activities

This subtheme highlights the active involvement of parents, local government units, barangay officials, and community members in supporting maintenance activities through labor, financial assistance, donations, technical expertise and participation in school programs.

Participants consistently emphasized the significant role of stakeholders in sustaining school facilities. P1 shared that stakeholders participate in "brigada activities, classroom organization and programs," while P5 stated that parents and community members support schools through "donations or resources" and participation in repair activities such as Brigada Eskwela. Likewise, P8 explained that community members provide "volunteer labor for painting and minor desk repairs," while local government units provide "funding and technical support."

Other participants highlighted the broader educational value of stakeholder involvement. P3 explained that stakeholders "provide support in terms of budget and give meaningful ideas to help achieve better education." Meanwhile, P11 shared that parents help by donating "money, materials, or food for the workers," while community members contribute their "time, skills or labor." These narratives suggest that school maintenance in rural areas is strongly dependent on community partnerships due to limited institutional funding. Stakeholder involvement reflects the shared understanding that maintaining school facilities is a collective responsibility that directly influences learners' welfare and educational quality.

Subtheme 2.4 Monitoring Through Inspection, Supervision and Progress Tracking

This subtheme reflects how ongoing maintenance activities are monitored through regular inspections, supervision, progress checking, documentation, and feedback mechanisms to ensure quality and accountability.

Participants explained that school heads, assigned teachers, and facility personnel regularly inspect maintenance activities to monitor progress and adherence to plans. P2 stated that monitoring is conducted through "regular onsite inspections," supported by "work orders, checklists and daily activity logs." Similarly, P5 explained that monitoring involves "regular inspections by the school administration, progress reports from maintenance personnel, and coordination meetings."

Participants also emphasized practical monitoring approaches. P10 shared, "I and the school staff check the work regularly while it is being done," while P12 explained that they regularly visit work sites to ensure that repairs are completed correctly and according to plan. These narratives indicate that monitoring practices are intended not only to ensure task completion but also to maintain safety, quality, and accountability in maintenance implementation. The findings further suggest that schools value continuous supervision because maintenance failures directly affect learner safety and the usability of school facilities.

Subtheme 2.5 Evaluation Based on Safety, Functionality and User Satisfaction

This subtheme demonstrates that maintenance effectiveness is evaluated according to the safety, cleanliness, durability, and functionality of repaired facilities, as well as feedback from teachers, students and stakeholders.

Participants consistently associated effective maintenance with improved facility conditions and safer learning environments. P1 stated that maintenance is effective "if students no longer feel unsafe and able to learn effectively," while P4 explained that evaluation is based on "cleanliness, safety, and improved condition of school facilities." Similarly, P10 shared that effectiveness is determined by checking "if the facility is fixed and working well again."

Other participants highlighted the importance of feedback and sustainability in evaluating maintenance outcomes. P2 explained that effectiveness is measured through "fewer complaints, better facility condition and smooth, undisrupted school activities," while P13 noted that schools ask "teachers and students if they are happy with the result." These narratives imply that schools evaluate maintenance not merely through physical repairs but through their long-term impact on school operations, learner safety, and stakeholder satisfaction. The

findings further demonstrate that maintenance activities are viewed as successful when they create stable, functional, and supportive learning environments for both learners and teachers.

Theme 3 Preventive and Corrective Maintenance Practices for Safety and Functionality

The findings revealed that rural elementary schools in the Schools District of Jose Dalman employ both preventive and corrective maintenance practices to preserve the safety, cleanliness, usability, and functionality of school facilities. Preventive maintenance activities are regularly conducted to avoid deterioration and minimize future damage, while corrective maintenance practices focus on repairing damaged facilities and addressing urgent structural and operational concerns. The findings further indicate that maintenance practices are shaped by the realities of rural school settings, including limited resources, aging infrastructure, environmental exposure and dependence on community participation.

Subtheme 3.1 Preventive Maintenance Through Routine Cleaning, Inspection and Early Detection

This subtheme highlights the routine preventive practices conducted by schools to minimize facility deterioration and prevent major damage. These practices include regular cleaning, inspections, repainting, servicing of electrical and water systems, waste management, and minor repairs.

Participants consistently emphasized the importance of maintaining cleanliness and conducting regular inspections. P2 explained that preventive maintenance includes “regular cleaning and sanitation of classrooms, offices and common areas” together with “periodic inspections and servicing of electrical systems, water supply and drainage.” Similarly, P5 shared that schools conduct “routine inspections, scheduled servicing of equipment and minor repairs to avoid major damage.” P10 also explained that schools “check walls, roofs and floors often to fix small problems early.”

Other participants associated preventive maintenance with learner safety and environmental sanitation. P4 noted that schools conduct “regular cleaning, minor repairs, repainting” to maintain a safe learning environment, while P8 emphasized the importance of “checking electrical fixtures and routine inspection of school facilities to prevent damage.” These narratives suggest that preventive maintenance is viewed as a proactive strategy that helps prolong the usability of facilities while reducing safety risks and future repair costs. The findings further imply that school personnel recognize the direct relationship between proper maintenance and the creation of conducive learning environments.

Subtheme 3.2 Corrective Maintenance through Immediate Repairs and Problem Resolution

This subtheme reflects the corrective measures implemented once facility problems are identified. Corrective maintenance commonly involves repairing damaged classrooms, fixing electrical and plumbing systems, replacing broken furniture, and addressing structural defects immediately after they are reported.

Participants emphasized the urgency of responding to facility problems to prevent disruptions in school operations. P2 explained that corrective maintenance involves the “immediate repair or replacement of broken furniture, damaged fixtures or faulty equipment.” Similarly, P7 shared that corrective maintenance includes “replacing broken window glass, fixing clogged restroom plumbing and repairing damaged student armchairs as soon as they are reported.” P12 also explained that when “something breaks or gets damaged, we fix it right away.”

Several participants highlighted that timely corrective maintenance is essential in ensuring learner safety and usability of facilities. P9 shared that repairs are conducted “immediately to ensure a safe and functional learning environment,” while P11 explained that broken facilities are repaired “right away when they get damaged.” These narratives suggest that corrective maintenance practices are largely reactive but necessary responses to the realities of aging infrastructure and heavy facility usage. The findings further indicate that immediate repair practices help schools minimize interruptions to teaching and learning processes.

Subtheme 3.3 School Facilities Requiring Frequent Maintenance Attention

This subtheme highlights the facilities and infrastructure components that commonly require maintenance due to frequent use, environmental exposure, and structural deterioration.

Participants identified classrooms, roofs, comfort rooms, water systems, electrical systems, chairs, desks, and windows as the facilities most vulnerable to damage. P1 identified "chairs" and clogged comfort room facilities as requiring constant attention", while P4 mentioned "classrooms, roofs, comfort rooms, chairs, electrical systems, and water facilities." P7 shared that their classroom was "a dilapidated one" where "water leaks through when it rains," emphasizing the deteriorating condition of some school buildings.

Other participants associated maintenance concerns with environmental conditions and aging infrastructure. P9 explained that old school buildings and roofs "get damaged easily by weather or daily use," while P11 noted that strong winds, heavy rains, and extreme weather conditions frequently damage school facilities in far-flung areas. These narratives suggest that rural schools experience recurring maintenance problems due to both natural environmental factors and insufficient infrastructural resilience. The findings further imply that the constant exposure of facilities to harsh environmental conditions increases maintenance demands beyond the schools' available resources.

Subtheme 3.4 Emergency Repairs and Adaptive Response Mechanisms

This subtheme reflects how schools respond to emergency repairs and unexpected facility problems through rapid reporting, coordination, temporary repairs, and community support.

Participants emphasized the importance of immediate action during emergencies. P3 explained that schools respond by "immediately reporting the issue," securing affected areas, conducting quick assessments, and implementing temporary repairs if necessary. Similarly, P8 shared that when emergencies occur, schools "act very quickly" by coordinating with teachers, skilled community members, and stakeholders to obtain immediate assistance.

Several participants highlighted the resourcefulness of school personnel during emergencies. P5 revealed that "teachers sometimes or should I say always spend their own money to address immediate emergency repairs," while P10 explained that they personally contact skilled individuals such as local carpenters and family members to assist with repairs. These narratives indicate that emergency responses in rural schools rely heavily on improvisation, community networks, and personal sacrifice due to inadequate institutional support and delayed external assistance. The findings further suggest that school personnel demonstrate resilience and adaptability in addressing urgent facility concerns to ensure learner safety and continuity of classes.

Subtheme 3.5 Safety-Oriented Maintenance Measures and Hazard Prevention

This subtheme demonstrates that schools implement safety-focused maintenance practices to ensure that facilities remain safe, functional and conducive to learning. Participants emphasized regular inspections, hazard prevention, and compliance with safety standards as essential maintenance measures. P2 explained that schools conduct "regular inspections of all facilities to identify hazards or defects" and ensure "strict compliance with national safety standards." Similarly, P4 stated that schools implement "timely repairs and maintenance, compliance with safety standards, proper sanitation and cleanliness practices, and safety measures such as clear signage and hazard prevention protocols."

Other participants highlighted practical safety measures implemented in schools. P8 shared that schools regularly check for "sharp edges, loose wires, or slippery floors and fix them right away," while P10 explained that schools inspect facilities before and after storms to ensure structural safety. These narratives suggest that maintenance practices are strongly influenced by the schools' responsibility to protect learners, teachers, and other stakeholders from accidents and hazards. The findings further imply that safety-oriented maintenance practices are viewed as essential components of effective educational management in rural settings.

Subtheme 3.6 Routine Maintenance Activities as Sustaining Mechanisms

This subtheme highlights the recurring maintenance activities regularly conducted to sustain school cleanliness, sanitation and functionality. Participants described daily, weekly, monthly, and annual maintenance activities performed within the school. P3 explained that routine activities include "daily cleaning of classrooms and comfort rooms, weekly or monthly inspections of facilities, minor repairs of furniture and equipment, waste management and sanitation practices." Likewise, P7 shared that their school conducts daily cleaning, weekly inspections of water and electrical systems and yearly Brigada Eskwela activities involving the community.

Other participants emphasized that routine maintenance promotes cleanliness and learner welfare. P5 noted that regular checking of classroom facilities, comfort rooms, and school grounds helps maintain a "clean, safe and conducive" environment. Meanwhile, P9 described Brigada Eskwela as a yearly community effort where stakeholders conduct "major cleaning, painting, and repairs together." These narratives suggest that routine maintenance activities are deeply embedded in the operational culture of rural schools and serve as sustaining mechanisms for preserving educational environments despite limited resources.

Subtheme 3.7 Recurring Facility Problems and Resource Constraints

This subtheme reflects the recurring facility problems commonly encountered in rural schools, including leaking roofs, broken furniture, damaged classrooms, electrical issues, poor water supply, and inadequate sanitation facilities. Participants consistently described structural deterioration and resource inadequacies as persistent challenges. P2 identified "leaking roofs, damaged chairs, broken windows, clogged drainage, and worn-out classrooms" as common problems, while P4 mentioned "electrical issues" and damaged school furniture. Similarly, P10 identified "insufficient water supply, faulty electrical connections, broken chairs and tables, and poor sanitation facilities."

Environmental exposure further worsens these facility problems. P9 explained that strong winds, heavy rains, humidity, and unstable ground conditions contribute to damaged roofs, cracked floors, and deteriorating wooden structures. These narratives indicate that rural schools continuously struggle with recurring infrastructural problems aggravated by environmental vulnerability, aging facilities, and insufficient maintenance resources. The findings further suggest that maintenance challenges in rural schools are systemic and recurring rather than isolated incidents, requiring long-

Theme 4 Resource Constraints, Environmental Pressures and Systemic Challenges in School Facility Management

The findings revealed that school personnel in rural elementary schools in the Schools District of Jose Dalman experience a complex interplay of financial limitations, resource scarcity, aging infrastructure, environmental vulnerability, and operational disruptions in managing and maintaining school facilities. These challenges are further shaped by geographical isolation and inconsistent external support, compelling schools to rely heavily on adaptive strategies and community participation to sustain functional learning environments.

Subtheme 4.1 Financial Constraints and Insufficient Maintenance Funding

This subtheme highlights the persistent issue of inadequate financial resources allocated for school facility maintenance, which directly limits repair activities, procurement of materials and hiring of skilled labor. Participants consistently identified budget limitations as a major concern. P1 emphasized "limited budget and funding," while P2 pointed out high material costs and insufficient financial capacity. Similarly, P4 and P5 noted that maintenance is often delayed due to "limited budget for repairs and improvements," while P6 stressed the "severe limitation of funds" for both materials and professional labor. Some participants also revealed the need for personal financial contributions. P1 noted that "personal money is used to repair DepEd facilities," indicating how funding gaps are sometimes filled by teachers or school personnel.

The narratives suggest that financial inadequacy is the most critical structural barrier in school facility management. Maintenance is not fully institutionalized in terms of stable funding, leading to reactive rather than preventive approaches. The reliance on personal funds further reflects systemic resource gaps that place additional burden on school personnel and compromise sustainability of maintenance efforts.

Subtheme 4.2 Scarcity of Materials, Tools and Skilled Manpower

This subtheme reflects the lack of essential maintenance resources such as construction materials, tools, and trained personnel needed for effective repair and upkeep. Participants highlighted shortages in both materials and human resources. P2 and P10 noted lack of tools and equipment, while P3 and P6 emphasized insufficient materials and maintenance supplies. P4 further identified shortages in skilled maintenance personnel, and P8 and P9 described difficulty in accessing proper tools due to geographic distance and high costs. P9 specifically emphasized rural disadvantage, stating that materials are expensive and difficult to transport, while skilled workers are difficult to recruit due to location constraints. The findings indicate that maintenance challenges are not only financial but also logistical and human-resource based. Rural schools face compounded disadvantages due to limited access to skilled labor and difficulty procuring materials. This results in delayed repairs, temporary fixes, and reduced quality of maintenance outputs.

Subtheme 4.3 Aging Infrastructure and High Wear-and-Tear from Daily Use

This subtheme emphasizes the deterioration of school facilities due to age, continuous use, and inadequate structural resilience. Participants such as P1, P4, P6, and P7 described aging buildings and frequent wear-and-tear as recurring issues. P7 highlighted dilapidated classrooms and constant damage due to heavy usage, while P6 explained that facilities deteriorate faster than they can be repaired due to large student populations.

The narratives suggest that infrastructure fatigue is a major challenge in rural schools. High student population density combined with aging facilities accelerates deterioration. This creates a continuous maintenance cycle where schools are unable to fully restore facilities before new damages occur.

Subtheme 4.4 Geographic Isolation and Logistical Difficulties

This subtheme captures the challenges associated with remote location, including difficulty in transporting materials, accessing skilled labor, and obtaining timely external assistance. Participants such as P10 and P11 emphasized that being far from town makes materials expensive and difficult to acquire. P9 and P8 also noted limited access to skilled workers and external support due to geographic barriers.

Geographical isolation intensifies maintenance difficulties by increasing costs and limiting access to external resources. Rural schools are placed in a structurally disadvantaged position where logistical constraints slow down response time and increase dependency on local improvisation and community assistance.

Subtheme 4.5 Weather and Environmental Damage as a Persistent Threat

This subtheme reflects the strong influence of weather conditions and environmental factors on the deterioration of school facilities. Participants consistently identified heavy rains, strong winds, flooding, humidity, and extreme heat as major causes of damage. P9 and P10 noted that storms and winds frequently damage roofs and buildings, while others emphasized leaks, corrosion, and structural weakening due to weather exposure.

The findings indicate that environmental conditions are a recurring and unavoidable stressor in rural school infrastructure. Climate-related damage increases maintenance frequency and urgency, placing additional strain on already limited resources. Schools must therefore operate in a continuous cycle of repair and recovery.

Subtheme 4.6 Disruptions to Teaching and Learning Processes

This subtheme highlights how facility-related challenges directly affect school operations, classroom instruction,

and learner welfare. Participants reported that delayed repairs lead to unsafe, uncomfortable, or unusable learning spaces. P2 explained that poor facilities disrupt daily activities and create hazards, while P4 and P7 noted delays in repairs affecting attendance, teaching effectiveness, and classroom comfort. P9 added that damaged classrooms sometimes become unusable, directly affecting learning continuity.

The narratives show that facility management challenges extend beyond infrastructure concerns and directly impact educational delivery. Poor facility conditions reduce instructional quality, affect student concentration, and may even influence attendance. Thus, maintenance issues translate into broader educational inequities.

Subtheme 4.7 Coping Strategies and Community-Based Resilience

This subtheme reflects how school personnel and stakeholders respond to challenges through collaboration, improvisation, and community support. Participants described various coping strategies, including prioritizing urgent repairs, engaging stakeholders, conducting Brigada Eskwela, and using local materials. P8 and P10 emphasized doing repairs using available resources and community labor, while P6 and P11 highlighted coordination with LGUs, parents, and volunteers.

The findings suggest strong evidence of community resilience and adaptive governance in rural school maintenance. Despite structural limitations, schools sustain functionality through collective action, bayanihan practices, and flexible problem-solving strategies. However, this also reflects systemic dependence on informal support mechanisms rather than stable institutional funding.

Overall, the experiences of school personnel reveal that school facility management in rural elementary schools is shaped by intertwined challenges of financial insufficiency, resource scarcity, environmental vulnerability, and infrastructural decay. These challenges significantly affect school operations and learning environments, but are continuously mitigated through strong community participation, improvisation, and collaborative problem-solving. The findings highlight the resilience of rural schools while also underscoring the urgent need for sustained institutional and governmental support to ensure safe, functional, and equitable learning environments. Term institutional and community-based solutions.

DISCUSSION

The quality of school facilities remains a fundamental factor in ensuring effective teaching and learning in basic education. Schools are not merely venues for curriculum delivery; they are physical and social environments that influence learners' academic engagement, health, safety, emotional well-being, and educational experiences [1]. Adequate classrooms, safe buildings, functional sanitation facilities, reliable water systems, and conducive learning spaces positively contribute to student participation, teacher productivity, and institutional effectiveness [2]. Conversely, deteriorating infrastructure, overcrowded classrooms, poor ventilation, damaged facilities, and inadequate maintenance systems negatively affect learner concentration, attendance, instructional delivery, and school morale [3]. These realities become more pronounced in rural schools where educational resources and infrastructure support systems are often limited.

Globally, educational infrastructure management has become increasingly complex due to aging facilities, climate-related hazards, growing student populations, and limited maintenance funding [4]. Public schools in developing countries commonly experience deferred maintenance, shortages of technical personnel, and inadequate infrastructure rehabilitation systems [5]. Rural schools are particularly vulnerable because geographic isolation, transportation difficulties, and unequal resource allocation limit their ability to sustain facility maintenance and infrastructure improvement [6]. Studies have emphasized that ineffective maintenance systems contribute not only to physical deterioration but also to widening educational inequalities between urban and rural communities [7].

In the Philippine context, school infrastructure remains one of the persistent concerns in public education. Although the Department of Education has implemented programs and policies to improve school facilities, many rural schools continue to experience aging classrooms, inadequate sanitation systems, poor drainage,

leaking roofs, insufficient electrical systems, and deteriorating learning environments [8]. The findings of this study strongly reflect these realities. Participants described school facilities that required constant repairs because of continuous exposure to harsh environmental conditions, heavy daily use, and insufficient maintenance resources. Similar findings were observed in studies showing that Philippine rural schools remain highly vulnerable to infrastructural deterioration due to limited maintenance funding and delayed repair interventions [9].

The findings revealed that planning and organization of school facility management in rural elementary schools followed a semi-structured but adaptive process. Schools maintained maintenance schedules, inspection routines, and school improvement plans; however, actual implementation was frequently influenced by emergencies, resource availability, and environmental damage. These findings support studies which found that educational institutions in resource-constrained settings often rely on reactive planning systems rather than long-term preventive maintenance frameworks [10]. Instead of implementing systematic infrastructure management programs, schools prioritized urgent and safety-related repairs because of financial limitations and competing operational demands.

The findings further revealed that school heads played central leadership roles in coordinating maintenance activities, mobilizing stakeholders, prioritizing repairs, and monitoring infrastructure conditions. However, maintenance management was not limited to school administrators alone. Teachers, utility workers, parents, barangay officials, and community volunteers collectively participated in maintaining school facilities. This collaborative system supports the assumptions of Systems Theory, which explains that organizations function as interconnected systems composed of interdependent components working together toward organizational stability and effectiveness [11]. In the context of school facility management, the school operated as an open system where administrators, teachers, parents, local government units, and community stakeholders collectively interacted to sustain school infrastructure despite limited institutional resources.

The collaborative nature of facility management observed in the study aligns with findings emphasizing the growing importance of participatory governance in educational institutions [12]. Community participation through Brigada Eskwela, volunteer labor, donations, and stakeholder partnerships became essential mechanisms for sustaining school operations. Similar studies found that schools with strong stakeholder engagement demonstrated greater resilience in addressing infrastructural deficiencies and maintaining safe learning environments [13]. In many rural educational settings, community participation is not supplementary but necessary for operational continuity [14].

Implementation and coordination of maintenance activities were largely informal but highly functional. Participants described coordination practices involving verbal communication, meetings, direct inspections, and immediate reporting mechanisms. Maintenance tasks were distributed among available personnel depending on urgency and available resources. Similar observations were reported in studies showing that school maintenance systems in developing countries rely heavily on interpersonal coordination and localized decision-making rather than technology-driven infrastructure management systems [15]. The absence of digital monitoring systems and formal maintenance databases limited long-term planning and predictive maintenance capacity.

Monitoring and evaluation practices likewise reflected practical but informal systems. Participants relied primarily on visual inspections, direct observation, and routine checking of classrooms, electrical systems, roofs, comfort rooms, and water facilities. Schools evaluated maintenance effectiveness based on cleanliness, safety, and usability rather than formal infrastructure performance indicators. Studies have shown that rural schools often lack structured monitoring systems because of insufficient administrative support and technical expertise [16]. Consequently, maintenance evaluation becomes subjective and reactive, limiting the ability of schools to develop data-driven infrastructure planning systems.

The findings regarding preventive and corrective maintenance practices further demonstrate the operational realities of rural schools. Preventive maintenance activities included regular cleaning, sanitation, repainting, waste management, inspection of electrical and water systems, and minor repairs. Corrective maintenance focused on repairing damaged roofs, broken furniture, clogged plumbing systems, faulty electrical connections,

and deteriorating classroom structures. Although preventive maintenance activities were regularly conducted, corrective maintenance dominated school operations because schools frequently responded to existing damage rather than preventing deterioration. These findings are consistent with studies showing that schools in low-resource settings commonly operate under breakdown maintenance systems due to insufficient preventive maintenance funding [17].

The dominance of corrective maintenance over preventive maintenance reflects broader structural constraints affecting rural educational systems. Studies have consistently shown that preventive maintenance reduces long-term repair costs, prolongs facility lifespan, and improves infrastructure sustainability [18]. However, preventive maintenance requires stable funding, technical expertise, adequate manpower, and access to maintenance materials. In rural schools where maintenance resources are limited, corrective interventions become the immediate priority because school leaders are compelled to address visible damage and urgent safety concerns.

Environmental and climate-related conditions significantly intensified maintenance demands among participating schools. Participants described how heavy rainfall, strong winds, humidity, flooding, and extreme heat accelerated infrastructure deterioration. Roof leaks, cracked walls, damaged windows, soil erosion, rusting metal fixtures, and weakened building foundations were common problems attributed to environmental exposure. Similar findings were documented in climate vulnerability studies showing that rural school infrastructure in developing countries is highly susceptible to weather-related damage [19]. Environmental stressors significantly increase maintenance frequency and infrastructure rehabilitation costs, particularly in geographically isolated schools with limited engineering support systems [20].

The study further revealed that financial constraints represented the most dominant challenge in school facility management. Participants repeatedly emphasized insufficient maintenance budgets, delayed release of funds, lack of repair materials, and shortage of skilled labor. Many participants disclosed that teachers sometimes used personal funds to support emergency repairs because school maintenance allocations were inadequate. These findings strongly align with studies identifying chronic underfunding as a major barrier to sustainable school infrastructure management [21]. Limited funding reduces schools' ability to conduct preventive maintenance, procure quality materials, and hire professional maintenance personnel, resulting in recurring infrastructure deterioration.

The shortage of maintenance materials, tools, and technical expertise further complicated facility management efforts. Schools located in geographically isolated areas encountered difficulties transporting construction materials and accessing skilled laborers. Similar findings were observed in studies emphasizing that geographic isolation significantly increases infrastructure maintenance costs and delays repair interventions in rural educational institutions [22]. Transportation barriers and limited access to suppliers force schools to rely on improvised repairs and locally available materials, which may compromise long-term infrastructure durability.

Aging school infrastructure also emerged as a major concern. Many participants described classrooms, roofs, electrical systems, and sanitation facilities that had deteriorated because of prolonged use and environmental exposure. Research has shown that older educational facilities require more frequent maintenance interventions and are more vulnerable to climate-related damage [23]. Without adequate rehabilitation programs, schools become trapped in continuous cycles of deterioration and repair, consuming limited maintenance resources without achieving long-term infrastructure improvement.

The identified challenges directly affected school operations and learning environments. Delayed repairs disrupted classes, reduced classroom usability, and created unsafe or uncomfortable learning conditions. Participants described situations where leaking roofs, poor ventilation, broken furniture, and damaged facilities affected learner concentration and instructional delivery. Similar studies consistently demonstrate that school infrastructure quality significantly influences academic engagement, attendance, learner motivation, and teacher effectiveness [24]. Poorly maintained facilities negatively affect not only physical safety but also psychosocial well-being and educational performance.

The findings likewise highlight the importance of Resource Dependence Theory in understanding rural school facility management. Resource Dependence Theory explains that organizations rely on external actors and environmental support systems to access critical resources necessary for survival and effectiveness [25]. Rural schools in this study depended heavily on local government units, parents, alumni, private donors, and community volunteers to supplement inadequate institutional resources. Stakeholder donations, volunteer labor, and community-driven maintenance activities became essential survival mechanisms for sustaining school infrastructure.

Community participation emerged as one of the strongest coping mechanisms among participating schools. Brigada Eskwela, Bayanihan activities, stakeholder donations, volunteer labor, and partnerships with local government units significantly supported maintenance efforts. Parents contributed materials, transportation assistance, carpentry work, and manpower during repair activities. Similar findings were reported in studies emphasizing that social capital and community engagement strengthen institutional resilience in resource-constrained schools [26]. Community participation therefore functions not only as a support mechanism but also as a localized governance strategy for sustaining rural educational infrastructure.

The findings suggest that effective school facility management in rural elementary schools requires stronger institutional support, sustainable funding mechanisms, and enhanced collaboration among schools, local government units, technical agencies, and community stakeholders. Strengthening the capacity of school leaders through training in facility management, preventive maintenance, disaster-resilient planning, and resource mobilization may improve infrastructure sustainability and maintenance outcomes. The study further highlights the importance of institutionalizing preventive maintenance systems and providing adequate support for geographically isolated and environmentally vulnerable schools. Well-maintained school facilities contribute significantly to learner welfare, educational quality, teacher productivity, and school effectiveness. Although rural schools demonstrate resilience through adaptive leadership, stakeholder participation, and community collaboration, long-term sustainability remains constrained by inadequate resources and recurring environmental challenges. Future research may explore comparative studies between urban and rural schools, examine the relationship between infrastructure quality and educational outcomes, and investigate climate-resilient infrastructure, digital maintenance monitoring systems, and stakeholder governance models to strengthen educational infrastructure management.

FINDINGS

The study found that school facility management and maintenance in rural elementary schools in the Schools District of Jose Dalman are characterized by collaborative, policy-guided, and needs-based practices involving school personnel, parents, local government units, and community stakeholders. Maintenance planning is anchored on DepEd policies, School Improvement Plans, and Annual Implementation Plans, while implementation is carried out through coordinated teamwork, communication, delegated responsibilities, regular monitoring, and stakeholder participation. Schools employ both preventive and corrective maintenance practices to ensure the safety, cleanliness, and functionality of facilities, with priority given to urgent and safety-related concerns. However, facility management is challenged by inadequate funding, shortages of materials and skilled manpower, aging infrastructure, geographic isolation, and recurring weather-related damage. Despite these constraints, schools demonstrate resilience through community partnerships, resourcefulness, and bayanihan practices that help sustain functional learning environments.

CONCLUSIONS

The management and maintenance of school facilities in rural elementary schools are essential functions that require collaborative governance, systematic planning, and active stakeholder engagement. The findings indicate that while school personnel effectively implement maintenance activities through preventive and corrective measures, their efforts are constrained by persistent financial, logistical, environmental, and infrastructural challenges. Community participation has become a critical mechanism for addressing maintenance needs and compensating for limited institutional support. Nevertheless, reliance on voluntary contributions and improvised solutions highlights the need for stronger and more sustainable support systems. Effective school facility

management therefore depends not only on local initiatives but also on adequate governmental assistance, resource allocation, and long-term infrastructure development to ensure safe, functional, and conducive learning environments.

RECOMMENDATIONS

The Department of Education and local government units may strengthen support for rural schools by increasing maintenance funding, improving resource allocation, and providing timely technical assistance for facility repair and improvement projects. School administrators may continue to institutionalize collaborative planning, preventive maintenance programs, and stakeholder engagement strategies to sustain facility conditions and reduce long-term repair costs. Capacity-building initiatives may also be provided to school personnel on facility management, monitoring, and maintenance planning. Furthermore, partnerships with community organizations, private stakeholders, and local agencies may be strengthened to augment available resources and enhance responsiveness to maintenance needs. Future studies may examine effective models of school facility management and explore strategies for addressing resource constraints and environmental challenges in rural educational settings.

Declarations

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