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The Educational Challenges Encountered by Teachers in Coastal Barangay Schools: Basis for Educational Resilience Program

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Abstract: In this study, the teacher's resilience in facing challenges in coastal school operations was explored, which later became the basis for developing an educational resilience program. Specifically, it highlighted the difficulties facing teachers with regards to access, equity, quality and wellbeing; the resilience strategies and activities carried out to address these difficulties; and the Resilience Program for Teachers Teaching in Coastal Areas was proposed to enhance school operations. A qualitative phenomenological research design was used that would capture the lived experiences of teachers who were assigned to coastal schools. The in-depth interviews were followed with purposively selected informants to collect and analyze data, which were then analyzed through thematic analysis to further explore the patterns and themes that emerged. The results showed that teachers faced interwoven problems related to geographical isolation, delayed delivery of learning materials, deficient infrastructure, weak internet connectivity, transportation problems, poverty, irregular attendance of learners, lack of instructional materials, learner preparedness, environmental hazards, and work-related stress. Teachers showed great adaptability, innovation, cooperation, and dedication to ensure the continuity of learning despite these limitations. They established parent-school partnerships, strengthened relationships with barangay officials and local government units, developed contextualized instructional materials, participated in remediation and learner support, Learning Action Cells (LACs), professional development, and wellness, mentoring, and peer support programs to ensure instructional quality and personal well-being.

Keywords: *Coastal Schools, Educational Resilience, Access, Equity, Instructional Quality, Teacher Well-Being.*

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I. INTRODUCTION

It has been widely recognized that education is one of the basic human rights and a pillar of sustainable development, and that despite this, there is still an imbalance in geographical and socio-economic access and quality, as well as in remote and coastal areas. In the Philippines, an archipelagic country where thousands of islands and coastal settlements are found, equitable access to education is one of the burning issues despite the constitutional requirements and policy frameworks that are supposed to help provide all learners with a comprehensive learning.

In distant coastal settings like the barangays of Bulan, Sorsogon, the accessibility and nature of the basic learning materials, such as school infrastructure, learning materials, transportation, and internet connectivity, are important determinants of access to education. Studies on geographically remote regions of the Philippines outline the role of the digital divide in exacerbating inequalities in access to learning opportunities and exposing learners to educational exclusion, especially in blended or technology-enhanced learning, when students and educators have no reliable access to the internet, technology, and information and communication technology infrastructure (De La Cruz, 2022; Manguilimotan et al., 2025). In the absence of reliable connectivity and sufficient equipment, educators can hardly apply new teaching approaches, and students can barely use digital resources, which means that gaps in performance and skills development will exist in relation to more connected districts.

Such infrastructural constraints go beyond digital access to physical and contextual constraints. In addition to connectivity, other issues experienced by many schools in remote locations include broken or inadequate learning facilities, overcrowded classrooms, and inadequate transportation availability, which influences frequent

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attendance to school, especially when there is poor weather especially during the typhoon seasons and high tides which are seen in coastal areas. An extended overview of rural education in underserved settings highlights the fact that infrastructural shortages explicitly hinder the quality and availability of learning experiences with educators struggling with the lack of resources and trying to address the curricular requirements (Leveraging Technology to Bridge Educational Gaps, 2026). Such systematic disadvantages are augmented by socio-economic advantages such as poverty in the household, where poor accessibility to school may be added by long distances and seasonal economic demands that may have to engage youths in household labor rather than complete school attendance.

The deficiency of learning materials also influences the practice of the teacher and the student interaction. Qualitative studies conducted in isolated schools of the Philippines show that educators frequently work in a resource-strained setting with no or partial access to materials such as revised textbooks, instructional aids, and technological resources and have to use whatever local resources they have and improvised solutions to provide instruction. Such a lack, in addition to reducing the effectiveness of instruction, exposes the teachers to further stress to adjust their teaching methods to the restrictions of the environment and find alternative ways to attract learners (Voices from the Field: Teachers Experiences with Technology Implementation in Remote Areas, 2025). Within the Bulan paradigm, these access factors represent how geographical distance and the lack of resources affect both students and educators in a systematic disadvantageous way, which is why specific policies and investments in infrastructure that help to bridge the widening divide and enable equitable educational opportunities in coastal barangays are necessary.

Social Economic and Environmental Issues that Impact Learners and Teachers.

Coastal communities like remote barangays of Bulan, Sorsogon tend to face interwoven socioeconomic and environmental issues, which impact a great deal on the level of educational involvement and persistence among learners and teachers. Low income is one of the most widespread obstacles, as most of the families rely on seasonal employment and fishing as their main sources of livelihood, and children are forced to work rather than attend school because of the economic downturn due to a lack of fish or when storms hit, disabling the whole family (Bernardo and Francisco, 2023). Moreover, the aftermath of climate-related disruptions (such as frequent typhoons and coastal risks such as erosion and flooding) may destroy infrastructure, keep communities secluded during prolonged timeframes, and disrupt school schedules, which increases absenteeism and learning losses among students (Aguilar et al., 2024). In a study on the coastal education in the Philippines, the environmental risks are known to increase the workload and turnover of teachers because they face difficulties in commuting during heavy weather and in most cases, they are not adequately supported by the institution during disasters, which causes burnouts and reduced teaching efficiency (Sanchez and Morales, 2025). The presence of these compounding socioeconomic pressures and environmental vulnerabilities lead to the necessity of comprehending how systemic disadvantage and environmental vulnerability affect educational realities in remote coastal communities by interfering with access, as well as the quality and sustainability of educational environments.

Where geographical remoteness and scarcity of resources like in the coastal barangays of Bulan, Sorsogon, learners and educators could also be made to adopt coping mechanisms as a mechanism of developing resilience in response to socio-economic and environmental pressures that are imposed on their educational experiences. Another example is that learners can use peer learning networks to cope with the impact of the close of schools due to weather as a consequence of their geographically isolated nature. Equally, teachers in a resource-limited setting like the coastal barangays of Bulan, Sorsogon could also be advised to resort to contextualized teaching techniques as a form of inciting resilience in the learners despite the infrastructural difficulties that would be facing their attendance. Another important resource that can be used to enhance the resilience of the learners is community collaboration, which is a method of coping with the socioeconomic issues that affect their educational journey. Community collaboration is one of the most critical resources towards creating resilience among learners as a coping mechanism with socioeconomic demands experienced in the education process. According to Garcia et al. (2025), community collaboration is a form of essential resource in resilience building among learners in an attempt to cope with socioeconomic factors that negatively impact their educational experiences.

Community support systems and institutional interventions are very important in maintaining access to education in remote coastal barangays in Bulan, Sorsogon, where socioeconomic and environmental vulnerabilities are common. The local government units (LGUs) are the frontline players in terms of offering financial aid, school infrastructure, transportation subsidies, and disaster-response systems that aid in reducing instructional disruption. The literature on the topic of decentralized education governance in the Philippines stresses that close cooperation between LGUs and school leaders contributes to a higher adaptability to local demands, especially in isolated geographical regions and in disadvantaged ones (Brillantes and Fernandez, 2019). LGUs can also deal directly with context-specific obstacles through local policy implementation and resource allocation, including school buildings, absence of educational supplies, and emergency displacement in the event of typhoons.

School leadership is also a central institutional process of enhancing inclusive and strong education systems. Studies on the disaster-prone school environments also emphasize that school leaders who exercise adaptive leadership, which entails collaborative decision-making, consultation, and contingency planning, enhance the school

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preparedness and continuity by a significant margin (Hallinger, 2020). School heads in coastal communities that are prone to repetitive climate-related disruptions usually liaise with barangay councils, parent-teacher associations, and civic groups in order to mobilize resources and initiate school-based disaster risk reduction and management (DRRM) programs. They can be early warning systems, temporary learning facilities, flexible education schedules and psychosocial support services that will safeguard both students and educators in the event of an emergency.

Parental participation and collaboration with external parties also enhance sustainability of education in remote coastal areas. UNESCO (2021) also stated that community-based education programs contribute to resilience greatly because they create a sense of collective responsibility in the continuity of learning in times of crisis. Involvement of non-government organizations, faith-based groups and individual donors have been proven to complement with government initiatives by providing school supplies, alternative learning resources, feeding programs and digital access in underserved communities. Such multi-sector cooperation is indispensable in situations such as those presented by Bulan in its coastal barangays where structural gaps need to be bridged and inclusive practice of education should be promoted so that learners and teachers are not left behind as the tide turns and isolation continues.

Following the identification of the challenges encountered by teachers in coastal schools, the study further examined the interventions and activities implemented by schools and relevant stakeholders to address these concerns. These initiatives reflect the collective efforts of school leaders, teachers, local government units, parents, and community partners in strengthening educational access, equity, quality, and teacher well-being despite the geographical and environmental constraints of coastal communities. Examining these practices provide valuable insights into existing strategies that promote school resilience and educational continuity. Moreover, the findings serve as an empirical basis for identifying effective interventions, recognizing implementation gaps, and informing the development of a comprehensive Resilience Program for Teachers Teaching in Coastal Areas that is responsive to the unique needs and realities of geographically isolated and disaster-prone schools.

The effectiveness of school operations in coastal communities depends not only on identifying the challenges encountered by teachers but also on understanding the interventions implemented to address these concerns. While teachers continue to face barriers related to access, equity, quality, and well-being, schools and their stakeholders have adopted various initiatives to sustain educational services despite geographical isolation, limited resources, and recurring environmental hazards. These interventions demonstrate the commitment of educational institutions to ensuring that learning continues even under difficult circumstances and provide valuable evidence of how resilience is translated into practice within coastal school settings.

The implementation of these activities reflects a collaborative and responsive approach to educational management. School heads, teachers, parents, local government units, community organizations, and other stakeholders play complementary roles in addressing the complex challenges experienced in coastal schools. Through partnerships and shared responsibility, schools are able to implement learner support programs, strengthen communication systems, improve instructional practices, promote teacher welfare, and establish mechanisms that enhance preparedness for emergencies and disasters. Such collaborative efforts reinforce the principle that improving educational outcomes in geographically isolated communities requires coordinated actions from multiple sectors rather than the efforts of schools alone.

Furthermore, examining the activities undertaken by schools provides a deeper understanding of the extent to which existing interventions respond to the identified challenges. Evaluating these initiatives allow the study to determine which practices have been widely implemented and which areas require additional support, policy enhancement, or resource allocation. The findings also provide an empirical foundation for developing the proposed Resilience Program for Teachers Teaching in Coastal Areas, ensuring that the program is grounded in the actual experiences and successful practices of schools. Ultimately, the analysis of these interventions contribute to the formulation of sustainable, context-responsive, and evidence-based strategies that will strengthen educational access, equity, instructional quality, and teacher well-being, thereby promoting resilient and inclusive school systems in coastal communities.

➢ *Problem Statement*

The study determined the focused direction for investigating the educational experiences of teachers in coastal barangays of Bulan, Sorsogon.

- What challenges are encountered by teachers in coastal barangay schools of Bulan, Sorsogon in terms of

✓ Access,
✓ Equity,
✓ Quality, and
✓ Well-being?

- How do teachers demonstrate resilience in confronting challenges of

✓ Access,
✓ Equity,
✓ Quality, and well-being?

- What are the different activities implemented by the schools to address challenges encountered in terms of:

✓ Access,
✓ Equity,
✓ Quality, and
✓ Well-being?

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- What educational resilience program may be developed to strengthen school operations in the remote coastal barangays of Bulan, Sorsogon?

II. METHODOLOGY

➢ *Research Design*

The phenomenological design was adopted to explain and define the common experiences of participants who shared similar contextual circumstances. This method focused on the teachers' perceptions and responses to issues arising from geographic isolation, poverty, unstable livelihoods, and disruptions caused by climatic conditions. The framework emphasized the participants' narratives and the meanings they attached to their experiences.

This study employed a convergent mixed-methods design, utilizing survey checklist questionnaire and informal interviews to gather data.

➢ *The Respondents*

The study sample were the teachers of the identified remote coastal barangays of Bulan, Sorsogon. The sampling method was purposive, whereby a set of criteria was used to pick the participants; these criteria included twenty-six (26) teachers who had a minimum of one year of experience teaching in the identified schools. This saw to it that the participants had relative experiences regarding the area of study.

➢ *The Sampling Technique*

The study employed purposive sampling, a non-probability sampling technique, to select the respondents who possessed the relevant experiences and knowledge necessary to address the objectives of the study. Purposive sampling was deemed appropriate because it enabled the researcher to intentionally select teachers who were directly exposed to the realities and challenges of teaching in remote coastal barangay schools.

The respondents consisted of public elementary teachers assigned in the identified remote coastal barangay schools in the Municipality of Bulan, Sorsogon. To ensure that the participants could provide rich and meaningful information, the following inclusion criteria were established: (1) they must be currently employed as full-time teachers in one of the identified remote coastal barangay schools; (2) they must have rendered at least one (1) year of continuous teaching service in their present school; and (3) they must be willing to voluntarily participate in the study. Teachers who were newly assigned with less than one year of teaching experience in the school, substitute teachers, or those on extended leave during the data collection period were excluded from the study.

The use of purposive sampling ensured that the respondents had sufficient firsthand experiences with the geographical, environmental, instructional, and socio-economic challenges associated with teaching in remote coastal communities. Their experiences provided reliable and context-specific data that served as the basis for identifying the challenges encountered by teachers and for developing a contextualized resilience program tailored to the needs of coastal barangay schools.

➢ *Research Instruments*

The study utilized researcher-developed instruments to gather both quantitative and qualitative data: a researcher-made survey questionnaire and a semi-structured interview guide. This instrument was developed based on an extensive review of related literature and studies, the research objectives, and the theoretical foundations of the study, specifically Ecological Systems Theory, Resilience Theory, Social Capital Theory and Critical Pedagogy Theory. The instruments were carefully designed to capture the challenges encountered by teachers in remote coastal barangay schools and to generate information that would serve as the basis for developing a contextualized resilience program.

The research instruments primarily consisted of the challenges commonly encountered by the teachers. Also, part of the research instrument was the list of activities commonly employed to address the challenges. The formulated tool had set of questions used by the research in the conduct of FGD.

➢ *Validation of Instruments*

To ensure the quality and appropriateness of the instrument, the researcher subjected the questionnaire to content validation by a panel of experts in educational leadership, research methodology, and educational management. Their comments and recommendations were incorporated to improve the clarity, relevance, and comprehensiveness of the items. Subsequently, the revised questionnaire was pilot-tested among teachers who possessed characteristics similar to those of the target respondents but were not included in the actual study. The reliability of the instrument was determined using Cronbach's Alpha, and a coefficient of 0.70 or higher was considered acceptable, indicating that the questionnaire possessed satisfactory internal consistency and was suitable for data collection.

To complement the quantitative findings, the researcher also utilized a semi-structured interview guide to obtain in-depth qualitative data from selected teacher-participants. The interview guide consisted of open-ended questions that explored the participants' lived experiences, the challenges they encountered while teaching in remote coastal barangay schools, the coping strategies they employed, the support systems available to them, and their recommendations for improving teacher resilience. The semi-structured format allowed the researcher to ask follow-up and probing questions whenever necessary, enabling participants to elaborate on their experiences while ensuring that the discussion remained aligned with the objectives of the study.

Similar to the survey questionnaire, the interview guide underwent expert validation to establish its content validity and ensure that the questions were relevant, clear,

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unbiased, and capable of eliciting meaningful responses. With the informed consent of the participants, the interviews were audio-recorded and subsequently transcribed verbatim to ensure the accuracy and completeness of the qualitative data. The integration of data gathered through the survey questionnaire and the interview guide provided a comprehensive understanding of the challenges encountered by teachers in remote coastal barangay schools and served as a strong empirical basis for crafting the proposed resilience program.

➢ *Data Gathering Procedures*

Semi-structured interviews as well as focus group discussions (FGDs) were used to gather data where necessary. Interview guide was drawn to ensure that it met the research objectives and at the same time leave room to the participants to discuss their experiences. Before data collection, it was ensured to get the consent of the school administrators and local authorities. Informed consent was taken, and the participants were informed of the study purpose. Face-to-face interviews were done at predetermined times and at agreed locations and recorded with permission and later transcripted word-to-word to be analyzed.

➢ *Data Analysis Methods*

The data gathered were interpreted with the help of the thematic analysis. The researcher transcribed the interviews, read the transcripts thoroughly several times and coded the important statements. Categories of codes were used and the emergent themes were determined according to patterns on access to education, socioeconomic and environmental issues, coping processes and systems of community support. The triangulation of the learners and teachers' responses was undertaken to increase credibility and validity of the findings. Ethical Considerations The research was conducted in a manner that followed the ethics of qualitative research. They were volunteers and knew that they could withdraw without any ramifications. Anonymity and discretion were ensured with the help of pseudonyms. All data gathered were stored under high security and were used in the field of academics.

➢ *Statistical Analysis*

The statistical analysis of the study is designed to align directly with its objectives and to ensure that the data gathered from learners and teachers are systematically treated, interpreted, and used to answer the research questions.

In determining the challenges encountered by the teachers, the frequency count and ranking were used. These descriptive statistical tools were also employed in identifying the different activities implemented to address the challenges.

III. RESULTS AND DISCUSSION

➢ *Challenges Encountered by Teachers in Coastal Barangay Schools of Bulan District*

Table 1 Challenges Encountered by Teachers Regarding Access

Challenges	Frequency	Rank
Delivery of textbooks, modules, and supplies is delayed, affecting instructional readiness and consistency.	23	1
Remote coastal schools face limited support, training, and delayed resources."	20	2
Multiple travel modes raise teachers' costs, especially in remote posts.	18	3
Poor signals limit access to online platforms.	17	4
Lack of transport hinders teachers' access to remote schools.	16	5
Community mapping and youth tracking are difficult in remote sitios.	14	6

The findings of the study demonstrate that teachers assigned to coastal schools encounter multifaceted challenges that significantly affect the delivery of quality education; these challenges are evident in the areas of access, equity, quality, and well-being, highlighting the need for comprehensive interventions that address both educational and contextual barriers. Although teachers continue to demonstrate resilience and commitment, the results reveal that the geographical, socioeconomic, and environmental conditions of coastal communities continue to hinder effective school operations (Department of Education, 2020; World Bank, 2021). With regard to access, the study found that delayed delivery of textbooks, modules, and instructional supplies was the most frequently encountered challenge, followed by limited professional support, transportation difficulties, and poor internet connectivity; these findings indicate that geographical isolation limits the timely provision of essential educational resources and services, and that difficult terrain, multiple transportation modes, and unstable communication networks further complicate teachers' ability to perform their instructional and administrative responsibilities (UNICEF Philippines, 2020; World Bank, 2021).

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Table 2 Challenges Encountered by Teachers Regarding Equity

Challenges	Frequency	Rank
Teachers in coastal schools face inequity due to scarce textbooks, materials, and technologies compared to others.	26	1
Coastal schools face disadvantage from substandard facilities lacking labs, libraries, and computer rooms.	24	2.5
Poverty, household duties, fishing work, and harsh weather cause irregular learner attendance.	24	2.5
Learners from fishing families struggle to afford supplies, uniforms, and materials, limiting participation.	23	4.5
Teachers struggle to sustain learning amid students' irregular attendance driven by economic survival needs.	23	4.5

In terms of equity, teachers identified the unequal availability of learning materials, inadequate school facilities, poverty, and irregular learner attendance as major concerns, suggesting that learners in coastal communities do not enjoy the same educational opportunities as those in more accessible areas (Department of Education, 2020; UNICEF Philippines, 2020).

Economic hardships compel many learners to prioritize household responsibilities and livelihood activities over schooling, resulting in inconsistent attendance and learning gaps, while the absence of adequate laboratories, libraries, and technology resources further widens educational disparities (World Bank, 2021).

Table 3 Challenges Encountered by Teachers Regarding Quality

Challenges	Frequency	Rank
Shortages of updated resources weaken instructional quality.	24	1
Varying student preparedness hinders teachers in meeting curriculum standards.	21	2
Coastal hazards disrupt classes, undermining instructional continuity and quality.	20	3.5
Inadequate classrooms and learning spaces weaken teaching and learning quality	20	3.5
Weather disruptions in coastal areas reduce instructional time, limiting coverage of curriculum standards and competencies.	14	5

Regarding quality, the shortage of updated instructional resources emerged as the greatest challenge, followed by varying learner preparedness, inadequate learning spaces, and disruptions caused by coastal hazards and adverse weather conditions; these factors limit teachers' ability to deliver effective instruction and complete curriculum standards within the prescribed school calendar, reducing opportunities for meaningful learning and hindering learner achievement (Department of Education, 2020; UNICEF Philippines, 2020).

Table 4 Challenges Encountered by Teachers Regarding Resilience and Well-Being

Challenges	Frequency	Rank
Addressing students' academic, attendance, and poverty-related issues adds emotional strain on teachers.	25	1
Heavy teaching loads, administrative tasks, and resource limits heighten teacher stress.	23	2.5
Work-related expenses and transport costs strain teachers financially in remote schools.	23	2.5
Teachers in remote coastal schools struggle with limited access to medical care and emergency services.	19	3.5
Long-distance commuting, difficult terrain, and dependence on multiple transportation modes can result in physical exhaustion.	19	3.5

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Finally, the study underscores that the challenges encountered by teachers are interconnected and collectively influence school effectiveness, indicating that addressing access, equity, quality, and well-being requires integrated interventions involving the Department of Education, local government units, community stakeholders, and school leaders; strengthening educational resilience through improved resource allocation, infrastructure development, professional support, learner assistance programs, and teacher wellness initiatives will enable coastal schools to provide more inclusive, equitable, and sustainable quality education despite the challenges posed by their geographical location (Department of Education, 2020; World Bank, 2021; UNICEF Philippines, 2020).

The challenge of varying student preparedness aligns with the findings of Wong et al. (2023), who emphasized that differences in learners' readiness, interests, and abilities require differentiated instruction to ensure equitable learning opportunities. Without adequate support, teachers may struggle to meet curriculum expectations while addressing diverse learner needs.

The results also supported the study of Shen, X., & Chen, Y. (2024), which found that natural disasters and environmental hazards can significantly disrupt educational processes by causing school closures, loss of instructional time, and interruptions in curriculum implementation. Coastal schools are particularly vulnerable to such disruptions due to their exposure to weather-related risks.

The findings were also consistent with the work of Kurrle and Warwas (2025), who emphasized that teachers' emotional well-being significantly influences classroom effectiveness and student outcomes. Teachers who continuously manage students' academic and socioeconomic challenges are more susceptible to emotional exhaustion and stress.

Similarly, Bottiani et al. al (2019) found that excessive workload, administrative demands, and limited support are among the primary contributors to teacher stress and burnout. Their study highlighted that increasing job demands without adequate resources negatively affects teachers' well-being and professional commitment.

- *How Teachers Demonstrate Resilience in Confronting Challenges*

The findings of the study reveal that teachers assigned to coastal schools demonstrate exceptional resilience in responding to the complex challenges associated with access, equity, quality, and well-being. Despite geographical isolation, limited resources, environmental hazards, and socioeconomic constraints, teachers consistently adapt their practices to ensure that learners continue to receive meaningful educational opportunities. Their resilience is reflected not only in their commitment to fulfilling their professional responsibilities but also in their ability to innovate, collaborate, and persevere in the face of adversity. This aligns with Li, Wu, Shan, and Chen (2026), who emphasized that teacher empowerment and governance pathways are crucial in strengthening climate-resilient education systems.

With respect to access-related challenges, teachers exhibited resilience by overcoming logistical barriers such as delayed delivery of instructional materials, unreliable transportation, and poor internet connectivity. They developed alternative instructional strategies, adjusted learning schedules, and maximized available communication channels to maintain the continuity of teaching and learning. The study further highlights that collaboration with parents, barangay officials, local government units, neighboring schools, and other community stakeholders played a significant role in enhancing school accessibility and sustaining educational services. These partnerships facilitated resource mobilization, learner monitoring, emergency communication, and infrastructure improvements, demonstrating that resilience is strengthened through collective action and shared responsibility. This is consistent with Tallara, Penas, Valiente, Pangan, and Guballa (2024), who found that coastal educators in Bulacan relied on flexible teaching styles and community collaboration to sustain learning during environmental disruptions.

Regarding equity-related challenges, teachers showed resilience by ensuring that learners from disadvantaged backgrounds continued to receive educational support despite poverty, irregular attendance, and limited access to learning resources. Through home visits, parent engagement, remediation programs, attendance monitoring, and individualized learner support, teachers addressed barriers that hindered educational participation. Their resourcefulness was evident in the development of contextualized instructional materials and the efficient use of limited educational resources. These efforts reflect teachers' strong commitment to promoting inclusive education and providing equal learning opportunities regardless of learners' socioeconomic circumstances. This resonates with Balisoro and Gilbas (2023), who documented how coastal school teachers in Sorsogon demonstrated professional commitment and resourcefulness despite financial constraints and limited resources.

In terms of quality-related challenges, teachers remained committed to delivering effective instruction despite shortages of updated learning materials, inadequate school facilities, varying learner preparedness, and disruptions caused by natural hazards. They demonstrated instructional flexibility by contextualizing lessons, developing localized teaching materials, implementing remediation programs, and utilizing differentiated instructional approaches to meet diverse learner needs. Teachers also recognized the importance of continuous professional development through Learning Action Cells (LACs), coaching, mentoring, seminars, and workshops. Their willingness to engage in lifelong learning strengthened their instructional competence and enabled them to maintain educational quality under challenging conditions. This is supported by Reintjes, Kaiser, Winter, and Bellenberg (2025), who found that resilience acts as both a protective

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factor against exhaustion and a driver of instructional quality during school transformation processes.

With regard to well-being-related challenges, the study found that teachers experienced emotional, physical, and financial pressures resulting from heavy workloads, extensive administrative responsibilities, transportation difficulties, and their expanded roles in addressing learners' academic and socioeconomic concerns. Nevertheless, they demonstrated emotional resilience by remaining compassionate, dedicated, and learner-centered despite these challenges. The findings also emphasized the importance of wellness programs, peer mentoring, Learning Action Cells, and collegial support in promoting teachers' mental health and professional well-being. Teachers viewed supportive professional relationships as essential in helping them manage stress, prevent burnout, and sustain motivation. This echoes the conclusions of Reintjes et al. (2025)**,** who highlighted that resilient teachers are better able to sustain motivation and mental health even in strained systems.

In general, the discussions demonstrate that teacher resilience in coastal schools is characterized by adaptability, innovation, collaboration, commitment, and perseverance. Rather than allowing environmental, logistical, and socioeconomic barriers to hinder educational delivery, teachers consistently developed practical solutions that sustained learning continuity and promoted inclusive education. Their resilience extends beyond individual determination and is strengthened through supportive school leadership, active community partnerships, professional development opportunities, and institutional wellness initiatives. This aligns with the findings of Li, Wu, Shan, and Chen (2026)**,** who emphasized that teacher empowerment and governance pathways are essential for climate-resilient education systems.

Despite challenges such as geographical isolation, limited resources, and environmental hazards, teachers innovated and collaborated to sustain learning. This is consistent with Tallara, Penas, Valiente, Pangan, and Guballa (2024), who documented how coastal educators in Bulacan relied on flexible teaching strategies and community partnerships to overcome disruptions caused by flooding. Similarly, Balisoro and Gilbas (2023) highlighted that coastal school teachers in Sorsogon demonstrated professional commitment and resourcefulness despite financial constraints, underscoring resilience in promoting equity and inclusive education.

Moreover, resilience was evident in teachers' dedication to maintaining instructional quality through contextualized lessons, remediation programs, and continuous professional development. This reflects the conclusions of Reintjes, Kaiser, Winter, and Bellenberg (2025)**,** who found that resilience not only protects teachers from burnout but also sustains instructional quality during systemic challenges.

What has been reported is also consistent with the recommendations of United Nations Educational, Scientific and Cultural Organization (2021), which underscored the need to promote learning continuity in disadvantaged and disaster-prone communities by involving teachers in flexible methods of teaching, creating alternative learning resources, and adjusting the delivery of learning to the local context. UNESCO stressed that teaching innovation and adaptability are essential to ensuring equitable access to education in the face of disruption.

The findings are also consistent with the work of Munezero, E., Hódi, Á., & Tóth, E. (2026) found that teacher resilience is strengthened by professional commitment, adaptability, positive relationships, and reflective practice. Their review highlighted that resilient teachers transform challenges into opportunities for professional growth and instructional improvement.

- *Different Activities Implemented to Address Challenges*

The findings presented in Table 5 demonstrated that teachers and school leaders have implemented various interventions to address the challenges affecting school operations in coastal schools. These activities reflect the proactive efforts of educators and stakeholders to sustain access, promote equity, improve instructional quality, and strengthen teacher well-being despite geographical, environmental, and socioeconomic constraints. The implementation of these interventions illustrates the resilience and commitment of teachers in ensuring the continuity of learning under difficult circumstances. This is consistent with Li, Wu, Shan, and Chen (2026), who emphasized that resilient education systems depend on strong governance, communication networks, and coordinated disaster response.

Table 5 Different Activities Implemented to Address Access- Related Challenges

Activities	Frequency	Rank
Installing equipment, upgrading connectivity, and establishing emergency communication networks between schools and district office	17	1
Develop contingency plans with alternative routes and response protocols.	14	2
Conduct collaborative projects with LGUs, parents, and community groups to improve school access roads, footpaths, and small bridges.	9	3
Establish safe, accessible temporary housing for teachers in coastal barangays.	5	4

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In terms of access, the most frequently implemented activities focused on improving communication systems through the installation of equipment, enhancement of internet connectivity, and establishment of emergency communication networks between schools and district offices. Schools also developed contingency plans and identified alternative transportation routes to ensure continuity of educational services during disasters and adverse weather conditions. These strategies echo the findings of Yabut (2026), who highlighted that coastal schools in Pampanga strengthened disaster risk reduction management through emergency communication and contingency planning. Collaboration with local government units (LGUs), parents, and community organizations further contributed to improving school accessibility by repairing roads, footpaths, and small bridges. This aligns with Tallara, Penas, Valiente, Pangan, and Guballa (2024), who found that coastal educators in Bulacan relied on community partnerships to sustain learning during flooding and high tide events.

Table 6 Different Activities Implemented to Address Equity-Related Challenges

Activities	Frequency	Rank
Strengthen learner support through parent sessions, home visits, and community dialogues.	21	1
Implement tutoring sessions, remediation classes, mentoring activities, and attendance monitoring for at-risk learners	18	2
Distribute textbooks, modules, supplies, and instructional materials promptly to disadvantaged learners once available.	16	3
Conduct Learning Action Cell workshops for teachers on differentiated, inclusive, gender-responsive, and culturally sensitive instruction.	12	4

Regarding equity, schools primarily implemented learner-centered interventions such as parent engagement, home visitation programs, remediation classes, tutoring sessions, and attendance monitoring for at-risk learners. Teachers also ensured the prompt distribution of textbooks, modules, and school supplies to disadvantaged learners. In addition, Learning Action Cell (LAC) sessions equipped teachers with strategies for differentiated, inclusive, gender-responsive, and culturally sensitive instruction. These activities highlight schools' commitment to ensuring that all learners, regardless of socioeconomic background or geographical location, receive equal learning opportunities. This resonates with Balisoro and Gilbas (2023), who documented how coastal teachers in Sorsogon remained resourceful and learner-centered despite financial and logistical constraints.

Table 7 Different Activities Implemented to Address Quality-Related Challenges

Activities	Frequency	Rank
Develop, contextualize, and reproduce culturally relevant teaching-learning materials aligned with students' needs.	21	1.5
Provide remediation classes, interventions, peer tutoring, and after-school support for struggling learners.	21	1.5
Facilitate collaborative engagement, coaching, mentoring, and feedback sessions among teachers and school leaders.	17	3.5
Enable teachers' participation in seminars, workshops, LACs, mentoring, and skills training on innovative strategies and assessment practices.	17	3.5

For quality, to address instructional challenges, schools developed and contextualized teaching-learning materials that reflected learners' local culture and experiences. Teachers implemented remediation classes, peer tutoring, and after-school support programs to help struggling learners achieve curriculum competencies. Collaborative coaching, mentoring, professional learning communities, seminars, workshops, and LACs further strengthened teachers' instructional competencies and assessment practices. These interventions demonstrate that continuous professional development and learner support remain central strategies for improving educational quality. This is supported by Reintjes, Kaiser, Winter, and Bellenberg (2025), who found that resilience not only protects teachers from burnout but also sustains instructional quality during systemic challenges.

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Table 8 Different Activities Implemented to Address Well-Being Related Challenges

Activities	Frequency	Rank
Conduct wellness seminars, stress management workshops, mindfulness, and mental health activities for teachers.	18	1.5
Establish teacher support groups, mentoring partnerships, and sharing sessions through Learning Action Cells (LACs).	18	1.5
Conduct disaster preparedness training, psychological first aid, and post-disaster counseling sessions.	15	3.0

In terms of well-being, schools recognized the importance of supporting teachers' mental, emotional, and professional health by conducting wellness seminars, stress management workshops, mindfulness activities, and mental health programs. Teacher support groups, mentoring partnerships, and LAC sharing sessions fostered collegial support and strengthened professional relationships. Schools also organized disaster preparedness training, psychological first aid, and post-disaster counseling to help teachers effectively respond to emergencies while maintaining their well-being. These findings echo Reintjes et al. (2025), who emphasized that resilient teachers are better able to sustain motivation and mental health even in strained systems.

Finally, the findings indicated that schools have adopted comprehensive and collaborative approaches to address the challenges encountered in coastal communities. The implemented activities reflect the dedication of teachers, school leaders, parents, local government units, and community stakeholders in strengthening educational resilience. These interventions not only address immediate educational concerns but also contribute to building more adaptive, inclusive, and sustainable school systems capable of ensuring continuous learning despite environmental and socioeconomic challenges. The results further emphasized that resilience in education is achieved through coordinated efforts, continuous innovation, and shared responsibility among all education stakeholders.

The collaborative efforts among schools, communities, and local governments support the findings of Acierto, C. M. M. (2026), who emphasized that strong school-community partnerships contribute significantly to addressing educational challenges and improving learner outcomes. Community involvement can provide additional resources and support for infrastructure development and school improvement initiatives.

The need for teacher accommodation in remote areas is also supported by Boadi, S., & Osei, P. (2024), who found that providing housing and welfare support for teachers in rural and isolated communities contributes to improved teacher retention, motivation, and effectiveness.

- *Proposed Educational Resilience Program to Strengthen School Operation in the Coastal Schools*

The findings of the study served as the foundation for the development of the Resilience Program for Teachers Teaching in Coastal Areas (RePro-Teach), a comprehensive intervention designed to address the multifaceted challenges experienced by teachers assigned to geographically isolated and environmentally vulnerable coastal schools. The proposed program recognizes that teacher resilience should not rely solely on individual commitment and adaptability but should instead be reinforced through institutional support, responsive governance, and collaborative partnerships among the Department of Education (DepEd), Local Government Units (LGUs), community stakeholders, and other partner agencies. By translating the identified challenges and resilience strategies into concrete interventions, the program aims to strengthen school operations while promoting teacher well-being and ensuring the continuity of quality education in coastal communities.

The program is organized around five key result areas: access and safe school operations, educational equity, quality of teaching and learning, teacher well-being and resilience, and disaster preparedness and climate resilience. These components directly respond to the study's findings, which revealed that teachers encounter difficulties related to transportation, limited instructional resources, inadequate facilities, unstable communication systems, adverse weather conditions, and the socioeconomic realities of learners' families. Through initiatives such as transportation assistance, enhanced communication facilities, contextualized instructional materials, professional development, psychosocial support, and strengthened disaster preparedness, the proposed program provides a holistic framework for improving the working conditions and professional capacity of teachers in coastal schools.

Moreover, the program advances several policy recommendations intended to institutionalize long-term support for teachers serving in coastal communities. Among these are the provision of a Coastal Hazard Allowance through LGU support, improved transportation and safety infrastructure, and the adoption of a flexible operational school calendar that acknowledges the recurring disruptions caused by typhoons, storm surges, flooding, and other localized environmental conditions. The study likewise recommends granting school heads appropriate delegated authority, consistent with existing DepEd policies, to temporarily implement alternative learning delivery modalities—including modular, synchronous, asynchronous, and offline digital learning—during localized weather disturbances or emergency situations that render face-to-face classes unsafe. Such flexibility enables schools to sustain

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educational continuity while safeguarding the health and safety of both teachers and learners.

Globally, the proposed Resilience Program reflects an integrated and proactive approach to strengthening educational resilience in coastal areas. Rather than focusing solely on disaster response, it emphasizes preparedness, prevention, teacher welfare, instructional innovation, and collaborative governance as essential elements of sustainable school operations. If implemented, the program is expected to enhance teacher resilience, reduce instructional disruptions, improve learner access to quality education, and establish a more adaptive and climate-responsive educational system. Ultimately, the program reinforces the principle that resilient teachers require resilient institutions, and that quality education in coastal communities can only be sustained through coordinated support, evidence-based policies, and shared responsibility among all education stakeholders.

IV. FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

➢ *Findings*

The study engaged 26 teacher respondents who supplied essential data through the research instrument, the analysis of which yielded the following salient findings.

- *The Challenges Encountered by Teachers in Coastal Barangay Schools of Bulan in Terms of:*

✓ Access include the delayed delivery of textbooks, modules, and supplies, with a frequency of 23 and securing the top rank; limited support for training, with a frequency of 20 and placed second; multiple travel modes that increase teachers' expenses, with a frequency of 18 and attaining third rank; and restricted internet connectivity, with a frequency of 17 and occupying fourth rank.

✓ Equity: the scarcity of textbooks and teaching resources registered a frequency of 26, earning the top rank; followed by the absence of adequate learning facilities and laboratories, together with the irregular attendance of some students, both recording a frequency of 24 and thereby sharing the rank 2.5.

✓ Quality: were the teachers' difficulty in delivering lesson plans due to shortages of updated learning resources, with a frequency of 24 and ranked first; followed by varying levels of student preparedness, with a frequency of 21 and placed second. Both the issues of coastal hazards that disrupted face-to-face classes and the inadequacy of standard classrooms recorded a frequency of 20, thereby sharing the 3.5 rank.

✓ Well-being: the emotional strain of addressing student issues in academics, attendance, and poverty-related concerns registered a frequency of 25 and ranked first; followed by heavy teaching loads, assigned administrative tasks, and costly transportation, which collectively caused stress, each with a frequency of 23 and placed them in 2.5 rank.

- *Teachers' Resilience in Confronting:*

✓ Access-related challenges was evident in their resourcefulness, such as localizing learning materials, and in their adaptive mobility by availing alternative routes and modes of transportation to reach schools. They also partnered with communities and stakeholders to ensure safe access to school, while communication challenges were addressed through micro-payment connectivity commonly available in barangays.

✓ Equity: teachers' resilience was reflected in their adherence to inclusive education, ensuring that learners felt fairly treated and were provided with equal learning opportunities through differentiated, learner-centered instruction and home-school collaboration.

✓ Quality: was demonstrated through participation in continuous professional growth and development activities, resorting to instructional innovation, localizing instructional materials, and engaging in collaborative practices with peers.

✓ Well-being: was revealed in their practice of self-care and maintenance of work-life balance, as well as in building supportive professional groups, sustaining a positive mindset, and promoting holistic well-being.

- *The different activities implemented by the school to address challenges in:*

✓ Access: were establishing alternative communication networks with a frequency of 17 and ranked 1st, followed by developing contingency plans with alternative routes, which had a frequency of 14 and ranked 2nd, and conducting collaboration with the LGU and the community to improve access, which had a frequency of 9 and ranked 3rd.

✓ Equity: the teachers strengthened learner support through parent sessions, home visits, and community dialogues with a frequency of 21 and ranked 1st. Meanwhile, implementing remediation classes had a frequency of 18 and ranked 2nd, while distributing learning materials had a frequency of 16 and ranked 3rd. Conducting LAC workshops among teachers had a frequency of 12, placing it in 4th rank.

✓ Quality: the teachers engaged in contextualization of learning resources and provision of remediation lessons with learners, both with a frequency of 21 and ranked 1.5. Collaboration among teachers and school heads was also undertaken, and they participated in various learning and development activities, both with a frequency of 17 and ranked 3.5.

✓ Well-being: challenges were carried out by teachers through their involvement in wellness activities and LACs, both with a frequency of 18 and ranked 1.5. The conduct of psychological first aid in times of disasters was also implemented with a frequency of 15 and ranked 3rd.

- The resilience program to strengthen school operations in the coastal barangay schools in Bulan is proposed.

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➢ *Conclusions*

- Teachers in coastal barangay schools of Bulan struggle with access, equity, quality, and well-being due to delayed materials, scarce resources, outdated instruction, and heavy personal and professional burdens.
- Teachers in coastal barangay schools of Bulan show resilience by overcoming access, equity, quality, and well-being challenges through resourcefulness, inclusive practices, professional growth, and holistic self-care.
- Teachers in coastal barangay schools of Bulan demonstrate resilience by addressing access, equity, quality, and well-being challenges through collaboration, inclusive support, professional growth, and holistic wellness practices.
- The Resilience Program for Teachers in Coastal Areas is designed to strengthen school operations by ensuring that access, equity, quality, and well-being are consistently upheld in coastal barangay schools.

➢ *Recommendations*

- Provide timely learning resources, regular training programs, improved classroom facilities, subsidized transportation support, and strengthened psychosocial services so that both instructional quality and resilience in well-being are enhanced.
- Continue support for localized resource development, strengthened community partnerships, expanded micro-payment connectivity programs, ongoing professional growth opportunities, and institutional wellness initiatives be sustained so that their resilience in access, equity, instructional quality, and well-being remains effective and enduring.
- Structure professional learning communities strengthen access, equity, quality, and well-being by fostering collaboration, learner support, innovation, and integrated wellness in school programs.
- The proposed Resilience Program for Teachers in Coastal Areas be implemented to strengthen school operations and ensure that access, equity, quality, and well-being are consistently upheld in coastal barangay schools.

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