Promoting Climate Change Awareness in Elementary Schools: The Case of Talipao District-Sulu

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ABSTRACT. This research sought to evaluate how extensively climate change awareness is being promoted in elementary schools within Talipao District, Sulu, for the academic year 2024–2025. It specifically analyzed the demographic profiles of teachers and examined the roles of school resources, parental and community involvement, and environmental programs in supporting climate change education. Additionally, the study explored whether variations in awareness promotion were evident when considering different demographic characteristics and analyzed the relationships among the contributing factors. A descriptive-exploratory design with a quantitative approach was utilized for data collection and analysis. Results indicated that the majority of participating teachers were over the age of 30, predominantly female, married, and had moderate levels of teaching experience. The respondents expressed moderate agreement regarding the current state of climate change awareness promotion, especially in relation to school resources, community engagement, and environmental activities. Statistical analysis showed no significant differences in perceptions based on demographic variables, with the exception of community support, which was found to have a significant association. These findings suggest the necessity for more robust and inclusive strategies to enhance climate change education, regardless of demographic background. Furthermore, the study emphasized that greater parent and community participation, along with enhanced school resources, significantly influence the success of environmental awareness initiatives in elementary schools.

KEYWORDS: Climate, Change, Awareness, Elementary School

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Introduction

Climate change stands as one of the most critical challenges of the 21st century, profoundly affecting ecosystems, human health, and socio-economic stability worldwide. The increasing frequency of extreme weather events, sea level rise, and shifting climate patterns underscores the urgency of embedding comprehensive climate education into the foundational stages of learning (UNESCO, 2017). Educational institutions are uniquely positioned to instill environmental awareness and shape future generations' attitudes and behaviors. Research shows that early exposure to climate-related topics fosters a sense of responsibility and promotes sustainable behavior among learners (Kollmuss & Agyeman, 2002; Chawla & Cushing, 2007; Chavez, Lamorinas, & Ceneciro, 2023).

Globally, integrating environmental education into school systems has proven effective in enhancing students' awareness and encouraging proactive engagement in sustainability (Hsu, 2015; Stevenson et al., 2014). Countries that actively involve students in climate-focused activities see positive outcomes in both knowledge acquisition and behavioral change (Simmons et al., 2020; Boeve-de Pauw et al., 2015). In the Philippines, the Department of Education (2016) has advocated the inclusion of climate change content in the K-12 curriculum, aiming to prepare learners with the skills needed to respond to environmental crises. This includes promoting educational initiatives that support vulnerable learners, especially those affected by poverty, health insecurity, or lack of parental support (Chavez, 2020; Murro, Lobo, Inso, & Chavez, 2023).

Locally, the Sulu Archipelago, including the Talipao District, is highly vulnerable to climate change impacts such as coastal flooding, stronger typhoons, and food insecurity due to its geographical and socio-economic vulnerabilities (Valdez et al., 2019; Cruz et al., 2017). Therefore, promoting climate change awareness at the elementary level is vital to empower young learners to understand, adapt to, and mitigate these threats. Embedding local environmental issues into the curriculum has shown to deepen student engagement and contextualize learning, particularly in disaster-prone communities (Francisco et al., 2020; Resurrección et al., 2019; Chavez, Anuddin, Mansul, et al., 2024). In addition, research has emphasized the power of communication in education—highlighting how language delivery and emotionally resonant presentation styles can significantly enhance message retention (Garil, Entong, Muarip, et al., 2024), a principle vital for impactful climate awareness campaigns.

This study investigates the current state of climate change awareness promotion in elementary schools within the Talipao District, Sulu. It evaluates teaching methods, curriculum content, and student involvement in environmental activities. Furthermore, it examines the perceptions of teachers regarding climate education and the extent to which local issues are integrated into classroom instruction. The research also aims to uncover effective practices and highlight areas that require improvement to foster stronger climate literacy and engagement. Effective promotion of climate awareness also requires empowering students as communicators, such as through journalism, advocacy, or class reporting, to build their confidence and environmental voice (Chavez, Anuddin, Mansul, et al., 2024).

By focusing on a high-risk and underserved region, this research contributes to national and global discussions on climate education, offering insights into how localized and contextual approaches can foster informed, responsible, and proactive young citizens (Anderson, 2012; Shepardson et al., 2011).

Research Questions

This study aimed to determine the extent of promoting climate change awareness in elementary schools at Talipao District - Sulu during the School Year 2024-2025.

Specifically, it sought to answer the following queries in its completion:

1. 1. What is the demographic profile of the teacher-respondents in terms of:
1.1. Age;
1.2. Gender;
1.3. Civil Status;
1.4. Length of Service; and
1.5. Educational Attainment?

2. 2. What is the extent of promoting climate change awareness in elementary schools at Talipao District - Sulu in the context of:

2.1. School Resources;

2.2. Parent and Community Support; and

2.3. Environmental Activities?

3. 3. Is there a significant difference in the extent of promoting climate change awareness in elementary schools at Talipao District - Sulu when data are grouped according to their demographic profile in terms of:

3.1. Age;

3.2. Gender;

3.3. Civil Status;

3.4. Length of Service; and

3.5. Educational Attainment

4. Is there a significant correlation among the sub-categories subsumed under the extent of promoting climate change awareness in elementary schools at Talipao District - Sulu in the context of school resources, parent and community support, and environmental activities?

Foreign Literature and Studies

Experiential and Outdoor Learning Approaches. Experiential learning has been widely recognized for its effectiveness in fostering climate change awareness. Hsu et al. (2019) revealed that integrating hands-on activities such as gardening and recycling projects in Taiwanese primary schools enhanced students' environmental understanding. Similarly, Lehmann et al. (2019) emphasized the role of outdoor learning in the UK, which not only increased students' knowledge but also deepened their emotional connection to nature. Chawla (2009) supported this by demonstrating the long-term impact of early nature experiences on adult environmental behavior. Franco et al. (2021) also found that nature-based education significantly contributes to students' climate literacy and emotional engagement. In connection, effective environmental engagement is closely linked to the emotional and communicative delivery of lessons, as supported by Garil et al. (2024), who found that speaker-audience connection enhances lasting learning outcomes.

Teacher Training and Curriculum Integration. Teacher competence and curriculum design are central to effective climate change education. In Germany, Scherer et al. (2018) found that well-trained teachers are more confident in engaging students in meaningful climate discussions. In Finland, interdisciplinary integration of climate topics into science education was linked to improved critical thinking (Mäkelä et al., 2017). Ahlström et al. (2020) further highlighted how curriculum frameworks in Scandinavian countries led to high student engagement. Kagawa and Selby (2010) emphasized the importance of empowering youth and training teachers for transformative learning in climate education. Relatedly, Castro et al. (2024) discussed the instructional challenges faced by teachers handling multiple subjects, especially in under-resourced areas, which affects their readiness to deliver climate-related lessons. Similarly, Bucoy et al. (2024) explored gaps in teachers' understanding of their legal rights, indirectly influencing their overall capacity and confidence to implement new curricular themes. Dagoy et al. (2024) added that teacher integrity and professional interest, particularly among those with administrative loads, also play a significant role in executing innovative content such as climate education.

Digital and Innovative Tools in Climate Education. The adoption of digital tools has transformed climate education. Pérez et al. (2020) demonstrated that interactive multimedia resources increased engagement and comprehension among Spanish students. In Canada, Stokes

and Doyon (2018) found that multimedia strategies supported stronger understanding and environmental concern. Bouchard et al. (2020) also showed that virtual reality (VR) can effectively simulate climate scenarios, making learning immersive. Bertling (2020) highlighted how digital simulations allowed students to critically analyze climate policy impacts. Chavez, Garil, Padirque, et al. (2024) also emphasized the value of responsiveness and innovation among youth leaders, which aligns with the growing use of digital platforms for sustainability awareness and community-based environmental leadership.

Inquiry-Based and Collaborative Learning. Inquiry-based and collaborative methods are powerful for student engagement. Krajcik and Merritt (2012) showed that inquiry-based learning in science fosters investigation of real-world issues. Henn et al. (2018) reported that group projects enhanced understanding and collective responsibility. In the U.S., Krajcik et al. (2014) found that project-based learning improved climate knowledge and critical thinking. Lee and Owens (2022) highlighted that student-led investigations resulted in meaningful climate advocacy. This approach can be further enriched when educators integrate policy literacy into instruction, as advocated by Chavez, Gregorio, Araneta, and Bihag (2024), who explored how organizational compliance and awareness of existing laws like the Magna Carta contribute to empowered, policy-conscious teaching and learning.

Arts, Literature, and Gamification in Environmental Learning. Creative and gamified approaches offer new pathways to climate understanding. Baird et al. (2021) found that integrating climate themes into art projects strengthened students' environmental awareness. Bonnet et al. (2021) emphasized that using both fiction and non-fiction climate literature enriched classroom discussions. Thomas and McCree (2018) noted that simulation games improved middle school students' grasp of climate dynamics. Brown et al. (2019) also reported that arts-based methods built emotional resilience in disaster-prone communities. Similarly, Garil et al. (2024) supported the use of emotionally engaging delivery techniques that could enhance arts-based and interactive learning in sustainability education.

Role of Institutions and Community Engagement. Educational institutions and communities significantly shape climate awareness. In Australia, Taylor et al. (2015) and Reed et al. (2019) reported that school-based climate action programs boosted environmental participation. In China, Zhang et al. (2020) observed similar outcomes with structured curricula. Higher education institutions were also found to drive student engagement in sustainability initiatives (Hine et al., 2016). Community-based efforts in developing countries led to heightened awareness and proactive behavior (Biddle et al., 2017). Montano et al. (2021) added that culturally responsive education in the UK enhanced international students' climate engagement. Furthermore, Chavez, Garil, Padirque, et al. (2024) noted that recognizing and supporting young leaders within communities bolsters participatory climate action and strengthens institutional-community partnerships for environmental sustainability.

Local Literature and Studies

Curriculum Integration and Instructional Strategies. Climate change topics have increasingly been incorporated into the Philippine K–12 curriculum to prepare students for environmental challenges. Alday (2020) stressed the need for curriculum enhancement and innovative pedagogy to cultivate students' climate literacy. Similarly, De Guzman (2019) revealed gaps in teaching resources for integrating climate topics in Visayan science classes, calling for improved access to instructional materials. In a parallel study, Cruz (2019) noted that private schools in Metro Manila often have greater capacity and training to deliver climate education

effectively, compared to resource-limited public institutions. Delos Santos and Ramos (2020) also emphasized the role of curriculum mapping to better embed sustainability themes in elementary subjects.

Moreover, Castro et al. (2024) highlighted the difficulties faced by teachers handling multiple subject areas, a challenge especially present in under-resourced schools like those in Talipao. This affects the quality and consistency of climate instruction. Similarly, Murro (2024) explored how modular distance learning impacts the study habits and academic achievement of elementary learners, an important consideration in remote or disadvantaged communities. Espartero et al. (2024) added that learning modality significantly affects students' interest, a factor that must be considered in designing engaging and contextually responsive climate lessons.

Teacher and Parental Involvement. Effective climate education hinges on the engagement of educators and families. Labrador (2018) explored elementary teachers' perceptions, finding that although they recognized climate change as crucial, many lacked the confidence and preparation to teach it. Similarly, Noble (2020) highlighted implementation challenges in ARMM schools, noting a shortage of teaching aids and professional development. Bucoy et al. (2024) echoed this, reporting knowledge deficits among teachers regarding their legal rights, which can negatively impact their confidence and teaching initiative.

Barrientos (2025) found that cultivating environmental sensitivity begins during teacher education, underscoring the need to embed sustainability values early in teacher training. Dela Torre (2021) underscored the role of parents in reinforcing climate learning, concluding that family support significantly boosts students' participation in sustainability activities. Reyes and Villanueva (2021) found that teacher-parent partnerships also positively influenced environmental responsibility among learners. Additionally, Chavez et al. (2024) emphasized the importance of policy awareness among educators, showing how organizational support structures contribute to the institutionalization of environmental education in the public school system.

Experiential and Co-Curricular Learning. Hands-on learning has proven highly effective in climate change education. Marasigan (2018) demonstrated that school garden programs enhanced students' understanding of sustainability through direct experience. Torres (2021) reported similar gains from field trips to ecological sites, which helped contextualize environmental issues. Bermudez (2019), through a case study of Mindanao schools, found that environmental clubs encouraged student leadership and accountability in climate action.

Chavez, Garil, Padirque, et al. (2024) highlighted the role of young leaders in community service, promoting civic participation and awareness—values critical to climate action. Alvarez (2022) added that artistic expression allowed students to emotionally process and communicate climate issues, proving the arts to be a powerful teaching medium. Meanwhile, Lopez and Tan (2020) found that project-based environmental tasks improved student engagement in climate initiatives. Dagoy et al. (2024) emphasized that teachers' professional integrity and interest play a significant role in sustaining long-term engagement in co-curricular environmental efforts.

Awareness Campaigns and Behavioral Change. Educational campaigns can significantly shape environmental attitudes. Garcia (2022) evaluated a climate change awareness campaign in Luzon schools, reporting marked improvements in students' knowledge and activism. Morales (2020) similarly found that campaigns influenced behavioral shifts toward eco-friendly habits among elementary students. The findings by Medina et al. (2021) support this, showing that repetition and visual storytelling in campaigns can reinforce lasting pro-environment behaviors.
In support of this, Garil et al. (2024) discussed the power of emotionally resonant language delivery styles in academic contexts. Their findings suggest that speaker-audience emotional

connection strengthens recall and promotes deeper learning—crucial in environmental campaigns targeting behavior change.

Innovative Tools and Community Partnerships. Technology and collaboration have further strengthened climate education. Santos and Reyes (2021) highlighted the effectiveness of digital platforms in bridging knowledge gaps, especially in rural schools. These tools facilitated interactive learning and raised student motivation. Dela Calzada et al. (2025) explored how artificial intelligence can support environmental teaching, offering both potential benefits and noted limitations. Florencio (2020) emphasized that partnerships with local organizations enhanced real-world relevance and enriched climate instruction.

Bautista and Carreon (2020) confirmed that intersectoral cooperation between schools and communities increased awareness and provided valuable learning extensions. Meanwhile, Domingo and Pineda (2021) noted that digital storytelling platforms allowed for greater student participation and dissemination of climate-related narratives.

Storytelling and Narrative-Based Education. Salinas (2021) demonstrated that storytelling techniques helped students personalize and empathize with climate challenges, making complex environmental topics more relatable. This aligns with findings by Enriquez and Lim (2020), who discovered that narrative-based learning increased climate concern and inspired reflection among early-grade learners.

Methodology

This chapter is a concise overview of the research methods: The study outlines the research design, location of the study, target participants, sampling technique, data collection tools, procedures for gathering data, measures to ensure validity and reliability, and the statistical methods used for data analysis.

1. *Research Design*

To effectively structure the data collection process for this research, a descriptive-exploratory design utilizing a quantitative approach was employed to assess the level of climate change awareness promotion in elementary schools within Talipao District, Sulu.

As Venson (2004) aptly described, a descriptive research design identifies and interprets existing conditions, while also providing the necessary knowledge and insights that support the development of a more in-depth investigation.

2. *Research Locale and Respondents*

This research was conducted at the different elementary schools at Talipao District, Sulu. Namely; Bandang Elementary School, Bilaan Elementary School, Buntod Elementary School, Kabungkol Elementary School, Kagay Elementary School, Lambanah Elementary School, Mabahay Elementary School, Samak Elementary School, Tiis Elementary School, Tuyang Elementary School during the School Year 2024-2025.

Talipao District is one of the district under the stewardship of the Department of Education – Sulu. During the time of Bangsamoro Government, the District is under the Ministry of Basic, Higher, and Technical Education – Division of Sulu, situated in the municipality of Talipao, province of Sulu.

The respondents of the study were the selected one hundred (100)elementary school teachers at Talipao District. The research will conducted in at least ten (10) teachers in Bandang Elementary School, Bilaan Elementary School, Buntod Elementary School, Kabungkol

Elementary School, Kagay Elementary School, Lambanah Elementary School, Mabahay Elementary School, Samak Elementary School, Tiis Elementary School, Tuyang Elementary School at Talipao District. Table below showed the distribution of respondents according to school:

Distribution of respondents

No.	Name of Elementary School in Talipao District	No. of Respondents
1	Bandang Elementary School	10
2	Bilaan Elementary School	10
3	Buntod Elementary School	10
4	Kabungkol Elementary School	10
5	Kagay Elementary School	10
6	Lambanah Elementary School	10
7	Mabahay Elementary School	10
8	Samak Elementary School	10
9	Tiis Elementary School	10
10	Tuyang Elementary School	10
	Total:	100

3. Sampling Design

The study used the non-probability sampling method known as convenience sampling. It is a type of sampling design where respondents were selected for inclusion in the sample because they are the most available and easiest for the researcher to access (Nikolepoulou, 2022).

4. Research Instrument

The research instrument was adapted from Mark B. O'Neill (2021) "Integration of Climate Change into Educational Curricula" formative assessment highlights its impact on student achievement. The research instrument is composed of two parts. Part I is the demographic profile of the respondents. Part II extent of promoting climate change awareness in elementary schools at Talipao District, Sulu.

5. Data Gathering Procedure

Before collecting data, permission to administer the questionnaire was first obtained from the Dean of the School of Graduate Studies at Sulu State College. Subsequent approval was then secured from the Schools Division Superintendent and the respective school heads of Bandang Elementary School, Bilaan Elementary School, Buntod Elementary School, Kabungkol Elementary School, Kagay Elementary School, Lambanah Elementary School, Mabahay Elementary School, Samak Elementary School, Tiis Elementary School, and Tuyang Elementary School in the Talipao District.

6. Statistical Treatment of Data

To generate the primary empirical data for this study, the following statistical tools will be utilized:

1. Frequency and Percentage: These tools will be used to analyze the demographic profile of the respondents based on age, gender, civil status, length of service, and highest level of education attained.

2. Weighted Mean and Standard Deviation: The weighted mean and standard deviation will be applied to assess the extent of climate change awareness promotion in elementary schools in the Talipao District, Sulu.

3. T-test and One-way Analysis of Variance (ANOVA): The T-test for independent variables will be used to determine significant differences in the promotion of climate change awareness in elementary schools at Talipao District, Sulu when the data is categorized by gender.

Additionally, One-way Analysis of Variance (ANOVA) will be applied to assess significant differences in the extent of climate change awareness promotion based on age, civil status, length of service, and highest educational attainment.

4. Pearson Product-Moment Correlation: The Pearson product-moment correlation will be employed to assess the significant correlation among the subcategories included under the extent of promoting climate change awareness. promoting climate change awareness in elementary schools at Talipao District - Sulu in terms school resources, parental and community support, and environmental activities.

The scale below will be adapted in the analysis of the result of computations obtain from the use of descriptive and inferential statistical tools:

Scales to be used

Point	Scale Value	Interpretation
5	4.50 – 5.00	Strongly Agree
4	3.50 – 4.49	Agree
3	2.50 – 3.49	Moderately Agree
2	1.50 – 2.49	Disagree
1	1.00 – 1.49	Strongly Disagree

Results

The study found that most teachers in Talipao District – Sulu are over 30 years old, female, married, experienced, and hold a bachelor's degree. Respondents moderately agreed on the promotion of climate change awareness in schools, particularly in terms of resources, community support, and environmental activities. No significant differences were found based on demographic factors, except for civil status in community support. A strong correlation was observed between community involvement and environmental activities, and between school resources and climate education efforts.

The results are presented, analyzed, and interpreted using appropriate scoring techniques and statistical methods treatment of the data, corresponding to each of the research questions outlined in this study.

1. What is the demographic profile of the teacher-respondents in terms of 1.1 Age, 1.2 Gender, 1.3 Civil Status, 1.4 Length of Service and 1.5 Educational attainment?

1.1 In terms of Age

Table 1.1 shows the demographic profile of teacher-respondents in terms of age. It can be seen from this table that out of 100 teacher-respondents, 1 (1.0%) is from the age group of 20 years old and below, while 11 (11.0%) are 21-30 years old, and 88 (88.0%) are 31 years old and above. This study reveals that more than one-half of the total teacher-respondents involved in this study are within 31 years old and above of age brackets. This further implies that most of teacher-respondents involved in this study belong to the upper level of age group as categorized in this study.

Table 1.1 Demographic Profile of Teacher-Respondents by Age

Age	Number of respondents	Percent
20 years old and below	1	**1.0%**
21-30 years old	11	11.0%
31 years old and above	88	88.0%
Total	100	100%

1.2 In terms of Gender

Table 1.2 shows the demographic profile of teacher-respondents in terms of gender. It can be gleaned from this table that out of 100 teacher-respondents, 21 (21.0%) are male, and 79 (79.0%) are female. This study reveals that more than one-half of the total number of teacher-respondents involved in this study are female. This implies that great majority of the teacher-respondents from Talipao district – Sulu in terms of gender is predominantly female.

Table 1.2 Demographic profile of teacher-respondents from Talipao district in terms in terms of gender.

Gender	Number of respondents	Percent
Male	21	21.0%
Female	79	79.0%
Total	100	100%

1.3 In terms of Civil Status

Table 1.3 shows the demographic profile of teacher-respondents in terms of civil status. It can be seen from this table that out of 100 teacher-respondents, 19 (19.0%) are single, 76 (76.0%) are married and 5 (5.0%) are either widowed or separated. This study shows that more than one-half of the total number of teacher-respondents are married. This result implies that Talipao district has significant number of married teachers.

Table 1.3 Demographic profile of teacher-respondents from Talipao district in terms of civil status.

Civil Status	Number of respondents	Percent
Single	19	19.0%
Married	76	76.0%
Separated/Widowed	5	5.0%
Total	100	100%

1.4 In terms of Length of Service

Table 1.4 shows the demographic profile of teacher-respondents in terms of length of service. It can be seen from this table that out of 100 teacher-respondents, 19 (19.0%) have 5 years and below, 30 (30.0%) have 6-10 years, 28 (28.0%) have 11-15 years, and 23 (23.0%) have 16 years and above. This study reveals that nearly half of the total number of teacher-respondents have 6 to 10 years of teaching experience. This implies that the Talipao district has a relatively experienced teaching workforce, with a significant number of teachers possessing substantial experience in the field.

Table 1.4 Demographic profile of teacher-respondents from Talipao district in terms of length of service.

Length of Service	Number of respondents	Percent
5 years and below	19	19.0%
6-10 years	30	30.0%
11-15 years	28	28.0%
16 years and above	23	23.0%
Total	100	100%

1.5 In terms of Educational Attainment

Table 1.5 shows the demographic profile of teacher-respondents in terms of Educational Attainment. It can be seen from this table that out of 100 teacher-respondents, 61 (61.0%) have bachelor's degree, 24 (24.0%) have bachelor's degree with Master's units, 12 (12.0%) have master's degree, 2 (2.0%) have Doctorate units and 1 (1.0%) have Doctoral degree. This study reveals that more than half of the total number of teacher-respondents have only bachelor's degree. This implies that the prevalence of bachelor's degrees among the teacher-respondents involved in this study suggest a need for an ongoing professional development and opportunities for career advancement among the elementary school teachers at Taliapo district, Sulu.

Table 1.5 Demographic profile of teacher-respondents from Talipao district in terms of educational attainment.

Educational Attainment	Number of respondents	Percent
Bachelor's Degree	61	61.0%
With master's unit	24	24.0%
master's degree	12	12.0%
With doctoral units	2	2.0%
Doctoral degree	1	1.0%
Total	100	100%

2. What is the extent of promoting climate change awareness in elementary schools at Talipao District - Sulu in the context of 2.1 School Resources, 2.2 Parent and Community Support and 2.3 Environmental Activities?
2.1 Literacy Goal, 2.2 Classroom Strategies, 2.3 Supplementary Instruction, and 2.4 Problem Identification?

2.1 In the context of School Resources

Table 2.1 shows the extent of promoting climate change awareness in elementary schools at Talipao District - Sulu in the context of School Resources. This category obtained a total weighted mean score of 3.00 with standard deviation of .67614 which is rated as "Moderately Agree". This result indicates that the teachers involved in this study affirmed that while there is some level of satisfaction with the resources provided, there is also room for improvement. This could imply that the resources, such as educational materials, training for teachers, and infrastructural support, are present but possibly outdated, insufficient in quantity, or lacking in diversity at Talipao district, Sulu.

Notably, teacher-respondents rated the following items as "Moderately Agree": "Educational software and applications about climate change are available for use.", "Our school has enough books and reading materials on climate change.", "The school has access to online platforms that offer climate change curricula.", "Teachers receive the necessary materials to create engaging climate change lessons." and "There are dedicated spaces (e.g., science labs, outdoor areas) for climate change activities.".

Table 2.1 Extent of promoting climate change awareness in elementary schools at Talipao District - Sulu in the context of School Resources.

Statements	Mean	S.D	Rating

Educational software and applications about climate change are available for use.	3.09	1.026	Moderately Agree
Our school has enough books and reading materials on climate change.	2.97	1.077	Moderately Agree
Teachers have access to digital tools (e.g., computers, tablets) to teach climate change.	3.49	.916	Moderately Agree
Teachers receive the necessary materials to create engaging climate change lessons.	2.84	1.032	Moderately Agree
The school has access to online platforms that offer climate change curricula.	3.22	.905	Moderately Agree
The school invests in up-to-date technology to support climate change education.	3.00	.974	Moderately Agree
The school library includes a variety of resources on environmental issues.	2.64	1.000	Moderately Agree
The school provides visual aids (e.g., posters, charts) related to climate change.	3.32	.875	Moderately Agree
There are dedicated spaces (e.g., science labs, outdoor areas) for climate change activities.	2.92	.918	Moderately Agree
There are sufficient laboratory materials for climate change experiments.	2.49	1.133	Disagree
Total Weighted Mean	3.00	.67614	Moderately Agree

Legend: (5) 4.50-5.00=Strongly Agree; (4) 3.50-4.49=Agree; (3) 2.50- 3.49=Moderately Agree; (2) 1.50-2.49=Disagree; (1) 1.00- 1.49=Strongly Disagree

2.2 In the context of Parent and Community Support

Table 2.2 shows the extent of promoting climate change awareness in elementary schools at Talipao District - Sulu in the context of Parent and Community Support. This category obtained a total weighted mean score of 3.11 with standard deviation of .98031 which is rated as "Moderately Agree". This result indicates that the teachers involved in this study moderately affirmed that while there is an awareness and some degree of involvement from parents and the Talipao district community in climate change education, the level of engagement and support may be limited or vary significantly.

Notably, teacher-respondents rated the following items, among others as "Moderately Agree": "Community experts are invited to speak about climate change in schools.", "Local organizations support the school's climate change education initiatives.", "Parents are actively involved in promoting climate change awareness at school events.", "Parents encourage their children to engage in climate change activities at school." and, "There is strong collaboration between the school and local environmental groups."

Table 2.2 Extent of extent of promoting climate change awareness in elementary schools at Talipao District - Sulu in the context of Parent and Community Support.

Statements	Mean	S.D	Rating

Community experts are invited to speak about climate change in schools.	2.93	1.094	Moderately Agree
Community members volunteer to help with climate change projects in school.	2.99	1.176	Moderately Agree
Local organizations support the school's climate change education initiatives.	3.46	.958	Moderately Agree
Parents are actively involved in promoting climate change awareness at school events.	3.14	1.223	Moderately Agree
Parents are informed about the school's climate change education programs.	3.20	1.206	Moderately Agree
Parents encourage their children to engage in climate change activities at school.	3.31	1.116	Moderately Agree
Parents provide resources or materials for climate change lessons.	2.82	1.095	Moderately Agree
The community participates in school-organized climate change events.	2.99	1.105	Moderately Agree
The school communicates regularly with parents about climate change topics.	3.06	1.108	Moderately Agree
There is strong collaboration between the school and local environmental groups.	3.24	1.272	Moderately Agree
Total Weighted Mean	3.11	.98031	Moderately Agree

Legend: (5) 4.50-5.00=Strongly Agree; (4) 3.50-4.49=Agree; (3) 2.50- 3.49=Moderately Agree; (2) 1.50-2.49=Disagree; (1) 1.00- 1.49=Strongly Disagree

2.3 In the context of Environmental Activities

Table 2.3 shows the extent of promoting climate change awareness in elementary schools at Talipao District - Sulu in the context of Environmental Activities. This category obtained a total weighted mean score of 3.38 with standard deviation of. .62166 which is rated as "Moderately Agree". This result indicates that the teachers involved in this study moderately agree that while some environmental activities are well-received and effective, others may not fully meet educational goals or are not uniformly implemented across Talipao district.

Notably, teacher-respondents rated all items as "Moderately Agree": "Classroom activities include hands-on projects about climate change.", "Environmental clubs are available for students to join and learn about climate change." "Students engage in gardening activities to learn about the environment. " and "The school organizes regular events focused on climate change awareness."

Table 2.3 Extent of promoting climate change awareness in elementary schools at Talipao District - Sulu in the context of Environmental Activities.

Statements	Mean	S.D	Rating
Classroom activities include hands-on projects about climate change.	3.42	.819	Moderately Agree

Environmental clubs are available for students to join and learn about climate change.	3.06	.952	Moderately Agree
Our school has a recycling program that students actively participate in.	3.36	.859	Moderately Agree
Students are encouraged to develop their own projects on climate action.	3.40	.841	Moderately Agree
Students are involved in monitoring and reducing the school's carbon footprint.	3.38	.838	Moderately Agree
Students engage in gardening activities to learn about the environment.	4.03	.797	Moderately Agree
Students participate in tree planting activities as part of their climate education.	3.81	.761	Moderately Agree
The school celebrates environmental days to promote climate awareness.	3.25	1.009	Moderately Agree
The school conducts field trips related to environmental conservation.	2.86	1.083	Moderately Agree
The school organizes regular events focused on climate change awareness.	3.23	.802	Moderately Agree
Total Weighted Mean	3.38	.62166	Moderately Agree

Legend: (5) 4.50-5.00=Strongly Agree; (4) 3.50-4.49=Agree; (3) 2.50- 3.49=Moderately Agree; (2) 1.50-2.49=Disagree; (1) 1.00- 1.49=Strongly Disagree

3. Is there a significant difference in the extent of promoting climate change awareness in elementary schools at Talipao District - Sulu when data are grouped according to their demographic profile in terms of 3.1 Age, 3.2 Gender, 3.3 Civil Status; 3.4 Length of Service; and 3.5 Educational Attainment?

3.1 According to Age

Table 3.1 presents the difference in the extent of promoting climate change awareness in elementary schools at Talipao District - Sulu when data are grouped according to their demographic profile in terms of age. As shown in this table, all the F-values and probability values are not significant at alpha 0.05. This means that though teacher-respondents vary in their age group, generally they do not vary in perception towards the subcategories subsumed under the extent of promoting climate change awareness in elementary schools at Talipao district. This further implies that teacher-respondents with the age range 31 years old and above may not make him/her better perceiver toward the extent of promoting climate change awareness in elementary schools at Talipao district compared to those within 20 years old and below as categorized in this study, or vice versa.

Hence, it is safe to say that variable age has no significant intervention in the ways how teacher-respondents at Talipao district perceive the extent of promoting climate change awareness in elementary schools. Therefore, the hypothesis which states that: “There is no significant difference

in the extent of promoting climate change awareness in elementary schools at Talipao District - Sulu, when data are classified according to their demographic profile in terms of age" is accepted.
Table 3.1 Difference in the extent of promoting climate change awareness in elementary schools at Talipao District - Sulu when data are grouped according to their demographic profile in terms of age.

Sources of Variation		Sum of squares	df	Mean Square	F	Sig.	Description
School Resources	Between Groups	.268	2	.134	.289	.750	Not Significant
	Within Groups	44.992	97	.464			
	Total	45.260	99				
Parent and Community Support	Between Groups	1.082	2	.541	.558	.574	Not Significant
	Within Groups	94.058	97	.970			
	Total	95.140	99				
Environmental Activities	Between Groups	.033	2	.017	.042	.959	Not Significant
	Within Groups	38.227	97	.394			
	Total	38.260	99				

* Significant at alpha 0.05

3.2 According to Gender

Table 3.2 This section outlines the differences in the extent of promoting climate change awareness in elementary schools within Talipao District – Sulu when the data are categorized based on the gender of the respondents. The table reveals that all computed t-values and their corresponding probability values are not statistically significant at the 0.05 level.

This suggests that both male and female teacher-respondents share similar views regarding the subcategories under the extent of promoting climate change awareness in the district. It also indicates that being a male teacher does not necessarily equate to a greater awareness or perception of parent involvement in school-based climate initiatives, nor does being female diminish such perceptions, and vice versa.

As a result, it can be concluded that gender does not play a significant role in influencing how teachers in Talipao District perceive the promotion of climate change awareness in elementary education. Consequently, the hypothesis stating: "There is no significant difference in the extent of promoting climate change awareness in elementary schools at Talipao District – Sulu when data are classified according to their demographic profile in terms of gender," is accepted.

Table 3.2 Difference in the extent of promoting climate change awareness in elementary schools at Talipao District - Sulu when data are grouped according to their demographic profile in terms of gender.

Variables	Grouping	Mean	S.D	Mean Difference	t	Sig.	Description
School Resources	Male	3.0429	.62335	.05678	.341	.734	Not Significant
	Female	2.9861	.69277				
	Male	3.1857	.85046	.09078	.376	.708	

Parent and Community Support	Female	3.0949	1.01614				Not Significant
	Male	3.3714	.70862	-.01085	-.071	.944	Not Significant
Environmental Activities	Female	3.3823	.60144				

Note. * Significant at alpha 0.05

3.3 According to Civil Status

Table 3.3 This section highlights the differences in the extent of promoting climate change awareness in elementary schools in Talipao District – Sulu when teacher-respondents are grouped based on their civil status. According to the table, all F-values and probability values related to the subcategories of climate change awareness promotion are not statistically significant at the 0.05 level, with the exception of the subcategory Parent and Community Support.

This outcome indicates that while the respondents have varying civil statuses—whether single, married, separated, or widowed—their perceptions regarding the extent of climate change awareness promotion are generally consistent. In other words, being married does not necessarily make a teacher more aware or perceptive of environmental promotion efforts compared to someone who is single, separated, or widowed, and the reverse is equally true.

Thus, civil status appears to have no meaningful impact on how teachers perceive climate change awareness initiatives in their schools. Therefore, the hypothesis stating that "There is no significant difference in the extent of promoting climate change awareness in elementary schools at Talipao District – Sulu when data are classified according to their demographic profile in terms of civil status" is upheld and accepted.

Table 3.3 Difference in the extent of promoting climate change awareness in elementary schools at Talipao District - Sulu when data are grouped according to their demographic profile in terms of Civil Status.

Sources of Variation		Sum of squares	Df	Mean Square	F	Sig.	Description
School Resources	Between Groups	.074	2	.037	.079	.924	Not Significant
	Within Groups	45.186	97	.466			
	Total	45.260	99				
Parent and Community Support	Between Groups	7.248	2	3.624	3.999	.021*	Not Significant
	Within Groups	87.893	97	.906			
	Total	95.140	99				
Environmental Activities	Between Groups	.050	2	.025	.392	.938	Not Significant
	Within Groups	38.210	97	.394			
	Total	38.260	99				

Note. * Significant at alpha 0.05

3.4 According to Length of Service

Table 3.4 This section illustrates the variation in the extent to which climate change awareness is promoted in elementary schools across Talipao District – Sulu, based on the respondents' length of service. Analyzing the table, it is evident that all F-values and p-values for the identified subcategories do not reflect statistical significance at the 0.05 alpha level. This finding suggests that despite differences in years of teaching experience among the participants, their perceptions regarding the degree of climate change awareness promotion remain consistent.

This indicates that teachers with over 16 years of experience are not necessarily more aware or perceptive regarding climate change promotion than those who have been teaching for 5 years or less, and the reverse also holds true. Consequently, it can be concluded that the length of service does not significantly influence how educators perceive the promotion of climate change awareness in the district's elementary schools.

As such, the hypothesis stating, "There is no significant difference in the extent of promoting climate change awareness in elementary schools at Talipao District – Sulu when data are classified according to their demographic profile in terms of length of service," is supported and therefore accepted.

Table 3.4 Differences in the extent of promoting climate change awareness in elementary schools in Talipao District – Sulu when grouped according to teachers' length of service.

Sources of Variation		Sum of squares	Df	Mean Square	F	Sig.	Description
School Resources	Between Groups	1.203	3	.401	.874	.458	Not Significant
	Within Groups	44.057	96	.459			
	Total	45.260	99				
Parent and Community Support	Between Groups	5.213	3	1.738	1.855	.142	Not Significant
	Within Groups	89.928	96	.937			
	Total	95.140	99				
Environmental Activities	Between Groups	2.362	3	.787	2.105	.105	Not Significant
	Within Groups	35.898	96	.374			
	Total	38.260	99				

Note. * Significant at alpha 0.05

3.5 According to Educational Attainment

Table 3.5 The table presents the differences in the extent of promoting climate change awareness in elementary schools at Talipao District, Sulu, when the data are categorized based on the teachers' educational attainment. It can be observed that all F-values and probability values for the subcategories are not significant at the 0.05 alpha level. This indicates that despite variations in the teachers' educational qualifications, there is no significant difference in their perceptions regarding the extent of climate change awareness promotion in the schools. This suggests that teachers with a doctoral degree are not necessarily better at perceiving the extent of climate change awareness promotion than those with a bachelor's degree, and vice versa.Thus, it can be concluded that the variable of educational attainment does not significantly influence the teachers' perceptions of climate change awareness promotion in elementary schools at Talipao District, Sulu. Therefore, the hypothesis stating that: "There is no significant difference in the extent of promoting climate change awareness in elementary schools at Talipao District – Sulu, when data are classified according to their demographic profile in terms of educational attainment" is accepted.

Table 3.5 Difference in the extent of promoting climate change awareness in elementary schools at Talipao District - Sulu when data are grouped according to their demographic profile in terms of Educational Attainment.

Sources of Variation		Sum of squares	Df	Mean Square	F	Sig.	Description
School Resources	Between Groups	1.347	4	.337	.729	.575	Not Significant
	Within Groups	43.912	95	.462			
	Total	45.260	99				
Parent and Community Support	Between Groups	7.543	4	1.886	2.045	.094	Not Significant
	Within Groups	87.598	95	.922			
	Total	95.140	99				
Environmental Activities	Between Groups	1.618	4	.404	1.048	.387	Not Significant
	Within Groups	36.642	95	.386			
	Total	38.260	99				

Note. * Significant at alpha 0.05

4. Is there a meaningful relationship among the sub-categories under the extent of climate change awareness promotion in elementary schools within Talipao District – Sulu, specifically in terms of school resources, support from parents and the community, and environmental initiatives?

Table 4 shows the correlation among the subcategories subsumed under the extent of promoting climate change awareness in elementary schools at Talipao District - Sulu. As shown in the table, the computed Pearson correlation Coefficients (Pearson r) between these variables are significant at alpha 0.05.

Furthermore, the correlational degree among the extent of promoting climate change awareness in elementary schools at Talipao District – Sulu is as follows:

1. High positive degree and statistically significant correlation on the extent of promoting climate change awareness in elementary schools at Talipao between the aspect of School Resources and Parent and Community Support. This degree of correlation indicates that when schools have better resources for teaching about climate change, there tends to be increased engagement and support from the parents and the broader community.
2. High positive degree and statistically significant correlation on the extent of promoting climate change awareness in elementary schools at Talipao district between the aspect of School Resources and Environmental Activities. This suggests that schools that are better resourced are likely to implement more or higher-quality environmental activities. This could indicate that resource availability directly influences the ability of schools to conduct effective environmental education, including activities that promote climate change awareness.
3. Very High positive degree and statistically significant correlation on the extent of promoting climate change awareness in elementary schools at Talipao district between the aspect of Parent and Community Support and Environmental Activities. This indicates that increased parent and community involvement is strongly associated with more frequent or more impactful environmental activities within schools.

Hence, it is safe to say that generally the subcategories subsumed under the extent of promoting climate change awareness in elementary schools, as perceived by teachers at Talipao district– Sulu are highly correlated. Therefore, the hypothesis which states that "There is no significant correlation among the sub-categories subsumed under the extent of promoting climate change awareness in elementary schools as perceived by teachers at Talipao district– Sulu" is rejected.

Table 4. Shows the correlation among the subcategories subsumed under the extent of promoting climate change awareness in elementary schools at Maimbung in Talipao district– Sulu.

Variables	Pearson *r*	Sig.	N	Description

Dependent	Independent				
School Resources	Parent and Community Support	.694**	.000	100	High
	Environmental Activities	.692**	.000	100	High
Parent and Community Support	Environmental Activities	.745**	.000	100	Very High

Note. **Correlation coefficient is significant at alpha .01
Correlation Coefficient Scales Adopted from Hopkins, Will (2002):0.0-0.1 = Nearly Zero; 0.1-0.3 = Low; 0.3-0.5 = Moderate; 0.5-0.7 = High; 0.7-0.9 = Very High; 0.9-1 = Nearly Perfect.

Conclusion

The following was concluded based on the findings of the study:

1. The findings revealed that most of the participants are over 30 years old, with females forming the majority. A smaller portion of the respondents remain unmarried. Additionally, many have substantial teaching experience but have not pursued graduate-level education.

2. Respondents expressed moderate agreement regarding the promotion of climate change awareness in elementary schools within Talipao District – Sulu, particularly in terms of available school resources, community and parental involvement, and environmental initiatives. This indicates a considerable need for further efforts to strengthen awareness and understanding of climate change.

3. The lack of significant differences in the extent of climate change awareness promotion when categorized by demographic variables such as age, sex, marital status, years in service, and educational background suggests that awareness of climate change should be universal, as its effects are experienced by all individuals regardless of their personal or professional background.

4. The data further show a strong link between active parent and community participation and the frequency or impact of environmental programs within schools. A high correlation also exists between resource availability and the school's capacity to deliver effective environmental education, particularly in activities that raise awareness about climate change.

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