

Teachers' Perceptions and Preparedness on Climate Change Education in Social Studies

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Abstract. This study examined the teachers' perceptions and preparedness in integrating Climate Change Education (CCE) in Social Studies in Quezon IV District during the School Year 2025–2026. Grounded in Ajzen's (1991) Theory of Planned Behavior and Shulman's (1986) Pedagogical Content Knowledge framework, the study employed a descriptive-correlational research design. The respondents were 136 public elementary school teachers selected through total enumeration sampling. Data were gathered using a validated questionnaire with a Cronbach's Alpha of .905. Findings revealed that teachers have a high level of perception and preparedness in integrating Climate Change Education. Furthermore, a moderate positive and statistically significant relationship was found between teachers' perceptions and preparedness, indicating that more positive perceptions are associated with higher levels of readiness. The study concludes that while teachers are generally prepared to integrate climate education, continued professional development and institutional support are recommended to further strengthen implementation.

Introduction

The fact of climate change is being considered the most elucidated issue of the 21st century, as the rising heat, the changes in rain patterns, the rise in sea levels, and the rising of extremes are shaking the livelihoods and learning across the globe. In the IPCC AR6 Synthesis Report (2023), it is noted that the warming has already exceeded the pre-industrial levels (approximately 1.1degC) and the risks that the human system will face in the near future such as education will only increase unless mitigation is implemented and adaptation strengthened. In order to act on a large scale, the global education agenda (SDG 13) specifically requests enhancing climate literacy and institutional capabilities by means of education, creating awareness, and early-warning skills.

Philippines is a highly climate-vulnerable country and has taken parallel roads of environmental education and disaster risk reduction and management (DRRM) at the basic level education. The Republic Act 9512 (2008) requires environmental awareness and education which is to be done at all levels which has established the legal framework on how to incorporate climate and environment issues in the curriculum and school programs. To supplement this, the Department of Education (DepEd) has institutionalized DRRM and risk-reduction education in a set of policies specifically the DepEd Order (DO) 37, s. 2015 (Comprehensive DRRM in Basic Education Framework) and DO 21, s. 2015 (DRRM coordination and information protocols) to safeguard learners, maintain continuity and mainstream risk-sensitive teaching and learning.

CCE in Social Studies refers to the transition out of single-time observations to integrated curricular plans, project learning as well as co-curricular activities. Nevertheless, the success of this kind of integration heavily relies on the perceptions and readiness of teachers. In situations where teachers take high relevance and have a sense of sufficient preparation, the CCE is more prone to implementation consistency and meaning, whereas in situations where capacity or materials are insufficient, integration is more likely to be intermittent or token-looking. Although there are global requirements, country laws, and regional indicators of risk, fewer studies are done on how educators in the Division of Bukidnon understand climate change education and the extent to which they are ready to incorporate it into the MATATAG curriculum.

The proposed study would help to identify the perception and readiness of teachers in Climate Change Education in Social Studies in the District IV Quezon.

Methodology

Design

This study employed a descriptive research design, which was appropriate for obtaining a comprehensive understanding of teachers' perceptions and preparedness of teachers on Climate Change Education in Social Studies. The descriptive design allowed the researcher to gather quantitative data that reflected the current conditions, attitudes, and practices of respondents without manipulating variables. Through this design, the study aimed to present an accurate description of how teachers in Quezon IV District perceived and prepared on climate change education in Social Studies.

This study was conducted in *Quezon IV District, Division of Bukidnon*, which comprises nine (9) public elementary schools under the supervision of the Department of Education (DepEd). The district served as the research locale because it provided a diverse representation of teachers who were directly involved in the delivery of the Basic Education Curriculum. Selecting Quezon IV District as the locale allowed the researcher to obtain relevant data on teachers' perceptions and preparedness in integrating climate change education within the classroom context. Furthermore, the locale was appropriate since it reflects the realities of public elementary schools in rural communities, where resources, teacher capacity, and curriculum implementation may vary significantly. This research used total enumeration sampling method whereby all the teachers in Quezon IV District, Division of Bukidnon, which consists of 150 teachers in total in the public elementary schools were the respondents. The use of total enumeration is suitable as the number of teachers in the district is not very large and can be covered by the study as the whole population can be considered. This will enable the researcher to get a complete image of the teacher perception and readiness to include climate change education in basic education curriculum without even having to resort to using a representative sample of participants. The findings were more precise and valid in the sense that they used the whole population of the teacher population of the district in assessing the current state of affairs.

Before the collection of data, the researcher sought permission from the Schools Division Superintendent and the District Supervisor of Quezon IV District. Upon approval, the researcher coordinated with school heads to facilitate the administration of the questionnaires to all public elementary school teachers in the district. The adapted and validated questionnaires were distributed personally by the researcher to ensure clarity of instructions and to provide assistance in case respondents have questions.

The respondents oriented regarding the purpose of the study, the confidentiality of their responses, and the voluntary nature of participation. Teachers were given ample time to complete the questionnaire, after which the researcher personally retrieved the completed forms to ensure a high retrieval rate. The gathered data then was organized, tabulated, and prepared for analysis according to the scoring procedure, including computation of weighted means, frequencies, percentages, and thematic analysis of any open-ended responses. This systematic procedure ensured that the study accurately captures teachers' perceptions and preparedness in integrating climate change education into the basic education curriculum.

The data gathered from the adapted and validated questionnaire was analyzed using descriptive and inferential statistical tools. Teachers' perceptions and preparedness on climate change education in Social Studies will be quantified using a weighted mean, based on the five-point Likert scale. The weighted mean will be interpreted using a descriptive rating scale as Very High to Very Low Level with corresponding qualifying statements to describe the extent of perception and preparedness.

To determine the relationship between teachers' perceptions and preparedness, the study employed the Pearson Product-Moment Correlation Coefficient (Pearson r) if the data met normality assumptions. If the data are not normally distributed, the Spearman Rank-Order Correlation Coefficient (Spearman's ρ) was used as a non-parametric alternative. These correlation analyses allowed the researcher to determine whether higher perceptions are associated with higher preparedness among teachers in integrating climate change education.

The selected statistical treatments ensured that the study provided a comprehensive, accurate, and meaningful understanding of teachers' perceptions, preparedness, and the relationship between these two variables in the context of climate change education in Social Studies.

In conducting this study, the researcher ensured that all ethical standards were strictly observed to protect the rights and welfare of the participants. First, the researcher seeks official permission from the Schools Division Superintendent and the District Supervisor of Quezon IV District before conducting the study. Coordination with the school heads was also done to facilitate smooth implementation.

Participation in the study was voluntary, and respondents were informed that they may withdraw at any time without any penalty. The purpose of the study, the nature of the questionnaire, and how the data will be used was clearly explained to all participants. The researcher ensured the confidentiality and anonymity of all respondents. Names and personal identifiers were not included in any part of the study, and the collected data was used solely for academic purposes.

Results and Discussion

The chapter contains, analyzes, and interprets the information obtained during the research on the perception of teachers toward Climate Change Education and their readiness in the field of Social Studies. The results are represented in a table and discussions on the same are made. The reliability statistics of the research tool and implications of the findings relative to the related literature and studies are also contained in this chapter.

Indicator	Mean	SD	Interpretation
Teachers play a key role in raising students' awareness about climate change.	3.82	0.385	High
Integrating climate change education in Social Studies is essential for students' future.	3.79	0.438	High
Climate change education contributes to building sustainable communities.	3.79	0.406	High
Climate change education increases students' sense of responsibility toward the environment.	3.74	0.440	High
Students benefit from learning about local and global impacts of climate change.	3.73	0.459	High
I am aware of current climate change concepts relevant to the K to 12 curriculum.	3.73	0.462	High
Climate change topics should be included across all subject areas, not just Social Studies.	3.71	0.471	High
I believe schools should prioritize climate change education as part of the curriculum.	3.71	0.471	High
Teaching climate change education improves students' critical thinking about environmental issues.	3.67	0.487	High
Integrating climate change into lessons makes learning more engaging for students.	3.62	0.501	High
Overall	3.73	0.277	High

Table 3. Teachers' Perceptions of Climate Change Education in Social Studies

The findings revealed that teachers have a high level of perception toward Climate Change Education ($M = 3.73$, $SD = 0.277$), indicating strong agreement on its importance and relevance. Teachers strongly agreed that they play a crucial role in raising students' awareness about climate change ($M = 3.82$).

This suggests that educators recognize their responsibility as facilitators of environmental knowledge, supporting the view that teachers are key drivers of sustainable development education. Additionally, teachers acknowledged that integrating climate change education in Social Studies is essential for students' future and contributes to building sustainable communities ($M = 3.79$).

These findings indicate that teachers view CCE as both academically significant and socially relevant. However, the lowest-rated indicator, although still high, was related to student engagement ($M = 3.62$). This suggests that while teachers value CCE, some may face challenges in making lessons engaging, possibly due to limited instructional resources or strategies. Overall, the results demonstrate that teachers possess positive attitudes toward Climate Change Education and recognize its importance in fostering environmental awareness and responsibility.

Indicator	Mean	SD	Interpretation
I am committed to continuously updating my knowledge and skills related to climate change education.	4.56	0.618	High
I am able to assess students' understanding of climate change topics effectively.	4.53	0.620	High
I feel confident discussing both local and global environmental issues with students.	4.49	0.610	High
I can collaborate with other teachers to integrate climate change concepts into interdisciplinary lessons.	4.48	0.721	High
I feel confident integrating climate change topics into my lesson plans.	4.33	0.618	High
I am prepared to use innovative teaching strategies to deliver climate change education.	4.33	0.702	High
I have access to adequate teaching materials and resources on climate change.	4.24	0.692	High
I can design activities that promote awareness of climate change among students.	4.24	0.721	High
My school administration supports teachers in implementing climate change education.	4.18	0.803	High
I have received training that equips me to teach climate change education effectively.	3.73	0.924	High
Overall	4.31	0.493	High

Table 4. Level of Teachers' Preparedness in Climate Change Education in Social Studies

The results showed that teachers have a high level of preparedness in teaching Climate Change Education (M = 4.31, SD = 0.493). Teachers expressed strong commitment to continuously improving their knowledge and skills (M = 4.56), indicating a proactive approach to professional development. They also reported confidence in assessing students' understanding (M = 4.53) and discussing environmental issues (M = 4.49). Moreover, teachers demonstrated readiness in applying CCE in classroom settings, including integrating it into lesson plans and using innovative teaching strategies (M = 4.33). Collaboration with other teachers for interdisciplinary teaching was also highly rated, suggesting openness to integrated learning approaches. Despite these positive findings, the lowest mean was recorded for training-related preparedness (M = 3.73). This indicates that while teachers feel generally prepared, there is a need for more structured and formal training programs. These findings suggest that teachers are capable and motivated but require additional institutional support to further enhance their competencies.

Variable	r	p-value	Interpretation
Teachers' Perceptions of Climate Change Education	.476	.000	Significant

Table 5. Significant Relationships between Teachers Perceptions and their Preparedness in Climate Change Education in Social Studies

The correlation analysis revealed a moderate positive and statistically significant relationship between teachers' perceptions and preparedness ($r = 0.476$, $p < 0.05$). This result indicates that teachers who have more positive perceptions of Climate Change Education are more likely to feel prepared to teach it. Positive attitudes toward CCE contribute to greater confidence, motivation, and instructional readiness. This finding supports the Theory of Planned Behavior (Ajzen, 1991), which posits that attitudes influence behavior and competence. Teachers who value Climate Change Education are more likely to invest effort in improving their teaching practices. The result also implies that improving teachers' perceptions through awareness programs and policy support can enhance their preparedness and effectiveness in delivering Climate Change Education.

Conclusion and Recommendations

The following conclusions are made based on the study findings; The teachers at Quezon IV District in School Year 2025-2026 tend to have positive attitudes toward Climate Change Education and its role in preparing learners who will become environmentally responsible. They also view themselves as well prepared to incorporate climate change issues in their lessons. The high correlation of perception and preparedness implies that the attitude of teachers towards Climate Change Education is a factor that determines the degree of preparedness. When educators appreciate and realize the significance of climate education, they become more assured and efficient to execute it in a more efficient way. Even though the rating is high, the comparatively lower score on formal training suggests that the presence of systematic professional development programs can continue enhancing the competence of teachers in terms of educating on Climate Change. In general, the inclusion of Climate Change Education in the curriculum has some potential, as the teachers in the district have positive attitudes and willingness to participate in curriculum development.

Based on the results and conclusions of the research, it is possible to propose the following recommendations: Administrators of schools are to arrange regular seminars, workshops, and in-services training specially on Climate Change Education to promote the professional competence of teachers.

Curriculum planners can enhance the interdisciplinary approach to Climate Change Education to facilitate the interdisciplinary education and the comprehensive understanding of the topic amongst the students. The educational policy makers are expected to offer adequate resources, new teaching resources and guidelines to facilitate proper implementation of the issue of climate in the school.

Education institutions that teach teachers can also include more elements of climate change education in pre-service teacher training courses. Future scholars might also use the same study across other districts or study other variables like administrative support, resources availability or real classroom practices to deepen the knowledge on factors that influence Climate Change Education integration.

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Competing Interests Statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this article.

Data Availability Statement

Data sharing is not applicable to this article as no new data were created or analyzed in this study; all data used were obtained from previously published sources as cited in the reference list.

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Appendices

No appendices are attached to this study.