Environmental Literacy and Academic Performance of Grade 5 Learners

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Abstract:- This study investigated the relationship between environmental literacy and academic performance among Grade 5 learners. Employing a descriptive correlational research design, the research aimed to determine the extent of environmental literacy in five dimensions: knowledge of environmental concepts, awareness of environmental issues, attitudes towards the environment, environmental behavior, and civic engagement. Additionally, it assessed the academic performance of learners in Health, Science, and Araling Panlipunan. The study involved purposive sampling of Grade 5 students from Paquibato District, with data collected through adapted questionnaires. The findings revealed that environmental literacy, particularly in knowledge of environmental concepts, attitudes towards the environment, and environmental behavior, significantly affects academic performance. A high degree of relationship was observed between overall environmental literacy and academic performance, indicating that enhanced environmental literacy correlates with better academic outcomes. The study emphasized the importance of integrating environmental education across various subjects and levels, highlighting its role not only in fostering environmental awareness and responsibility but also in enhancing academic achievement. These insights are crucial for educational stakeholders in formulating strategies to incorporate environmental literacy effectively in the curriculum.

Keywords:- *Environmental Literacy, Academic Performance, Grade 5 Learners, Descriptive Correlational Research, Environmental Education*

I. INTRODUCTION

Environmental literacy is a crucial aspect of education that has gained increasing attention in recent years. It refers to the knowledge, skills, and attitudes needed to understand and address environmental issues. Environmental literacy has been recognized as an important component of education, not only for the sake of environmental protection, but also for enhancing academic performance. Research has suggested that environmental literacy is positively related to academic achievement, particularly in science subjects.

Several studies have investigated the relationship between environmental literacy and academic performance among students. For example, a study conducted by Oktar, Akdeniz, and Acar (2015) found that students who scored high on an environmental literacy test also performed better in science subjects. Similarly, a study by Kanyongo and Kyei-Aboagye (2018) showed that environmental literacy was positively correlated with mathematics performance.

Moreover, environmental literacy has become increasingly important in the Philippines due to the country's vulnerability to natural disasters and the pressing need to address environmental challenges such as climate change, pollution, and biodiversity loss. There is a growing interest in understanding the relationship between environmental literacy and academic performance among Filipino students. Several studies have examined this relationship among students in different levels and subjects.

For example, a study by Ramos and Bandonill (2019) found that environmental literacy was positively correlated with academic performance in science, mathematics, and English among grade 10 students in Davao City. Similarly, Lagbas and Gultiano (2018) reported a positive correlation between environmental literacy and academic achievement in science among high school students in the Philippines.

Despite the existing studies on environmental literacy and academic performance in the Philippines, there is a need for further research among grade 5 students, who represent a critical stage in the educational system. Grade 5 is a transition stage from elementary to middle school, where students are expected to develop foundational knowledge and skills that are crucial for their academic and personal development. Therefore, it is important to investigate the relationship between environmental literacy and academic performance among Grade 5 students to inform educational policy and practice.

The study looked into the relationship environmental literacy to the academic achievement of Grade 5 learners. Specifically, it aimed to answer the following questions:

➢ *What is the extent of environmental literacy of Grade 5 learners in terms of:*

- Knowledge of environmental concepts;
- Awareness of environmental issues;
- Attitudes towards environment;
- Environmental behavior; and
- Civic engagement?

➢ *What is the extent academic performance of Grade 5 learners in terms of*

- Health;
- Science; and

- Araling Palipunan?

➢ *Is there a significant relationship between environmental literacy and academic performance of Grade 5 learners?*
➢ *Which among the indicators of environmental literacy significantly affect academic performance of Grade 5 learners?*

➢ *Hypotheses*
This study was tested at .05 level of significance.

- *HO1. There is no significant relationship between environmental literacy and academic performance of Grade 5 learners.*
- *HO2. None of the indicators of environmental literacy significantly affect academic performance of Grade 5 learners.*

II. METHODS

Discussed in this chapter is the method to be followed by the researcher in the conduct of the study.

This study employed descriptive correlation research design with the use of survey method. Descriptive correlational research is a valuable research method that can be applied to a wide range of fields, including education, psychology, sociology, and healthcare. For example, in healthcare, descriptive correlational research can be used to examine the relationship between various health-related variables such as lifestyle factors, health behaviors, and health outcomes (Muller et al., 2017). In education, descriptive correlational research can be used to examine the relationship between academic performance, and various other factors such as motivation, self-efficacy, and socio-economic status (e.g., Agasisti et al., 2018).

The study was conducted among Grade 5 students from Paquibato District. A purposive sampling technique was used to the Grade 5 student-respondents. Purposive sampling is a non-probability sampling technique commonly used in quantitative research. It involves selecting participants based on specific criteria relevant to the research question or objectives, rather than randomly selecting them from a larger population (Palinkas et al., 2015). Purposive sampling is often used when the population of interest is small, hard to reach, or has specific characteristics that are important to the research question.

Data for the independent variable, environmental literacy, were collected using an adapted questionnaire from Chawla and Flanders (2020). The respondent answered the survey questionnaire using a 5-point Likert Scale ranging from Strongly Agree to Strongly Disagree. In collecting data

for the independent variable, academic performance in Health, Science, Araling Panlipunan, the researcher utilized the Grade 5 learners periodical Grade in the first quarter. The three subjects were specifically chosen because part of the topics discussed is about the environment.

In order to maintain ethical standards and the legitimacy of the research, the researcher will carry out a series of procedures. Initially, the researcher sought authorization from the School District Supervisor to conduct the study. Upon approval, the researcher contacted the principal of the school to assist with the study. Afterwards, the researcher worked with Grade 5 teachers to distribute the survey questionnaire while ensuring the privacy and anonymity of the participants. The researcher prioritized ethical considerations, particularly in terms of maintaining the confidentiality of the data. After collecting the data, the researcher prepared it for analysis and conduct a thorough review of the results.

In conducting this research, ethical considerations have been meticulously observed to ensure the integrity and moral responsibility of the study. Paramount among these is the protection of participants' confidentiality and privacy, ensuring that all data collected is anonymized and securely stored. Informed consent was obtained from all participants, clearly outlining the purpose of the research, the procedures involved, and their rights, including the freedom to withdraw from the study at any point without any adverse consequences. Additionally, care was taken to avoid any potential harm or discomfort to the participants. Furthermore, the research adheres to the principles of honesty and transparency in data collection and analysis, avoiding any form of bias or misrepresentation of the data.

Data analysis involed descriptive statistics to summarize the responses on the survey questionnaire and inferential statistics to examine the relationship between environmental literacy and academic performance. Specifically, Pearson's correlation coefficient was used to assess the strength and direction of the relationship between environmental literacy and academic performance in each subject. Multiple regression analysis was conducted to examine the combined effect of environmental literacy on academic performance.

III. RESULTS AND DISCUSSION

This chapter outlines the main findings of the study. It then discusses what these results mean in a straightforward, practical context.

➢ *Extent of Environmental Literacy of Grade 5 Learners in Terms of Knowledge of Environmental Concepts*

Table 1 Extent of Environmental Literacy of Grade 5 Learners in Terms of Knowledge of Environmental Concepts

Statements	Mean	SD	Description
1. I understand how the water cycle works.	4.22	0.67	Very Extensive
2. I know what an ecosystem is and how it functions.	4.16	0.70	Extensive
3. I am familiar with the concept of biodiversity.	4.10	0.77	Extensive
Overall	**4.16**	**0.41**	**Extensive**

The statement with the highest mean is "*I understand how the water cycle works*" with a mean of 4.22 and a standard deviation (SD) of 0.67, indicating a very extensive understanding among the students. This suggests that the water cycle is a well-grasped concept, possibly due to effective teaching methods or curriculum focus. Conversely, the statement with the lowest mean is "*I am familiar with the concept of biodiversity*" with a mean of 4.10 and an SD of 0.77. This slightly lower score could imply a need for more focused educational strategies in this area. The overall mean for the table is 4.16 with an SD of 0.41. This means that the environmental literacy of Grade 5 learners is often manifested, reflecting an extensive general understanding of environmental concepts among the learners, which is a positive indicator of environmental literacy at this education level.

The results, particularly the high understanding of the water cycle, align with the findings of Celikten and Buyukozturk (2019), who emphasized the effectiveness of current educational approaches in imparting basic environmental concepts. The slightly lower familiarity with biodiversity, as indicated by the lowest mean score, resonates with the concerns raised by Kim et al. (2015) about the need for more comprehensive biodiversity education in early learning stages. The overall extensive knowledge level mirrors the observations by Lee et al. (2018), who noted a growing trend in environmental literacy among young learners due to enhanced curriculum and teaching methods. These parallels suggest that while the current educational strategies are effective to a large extent, there is room for improvement, especially in areas like biodiversity education.

> *Extent of Environmental Literacy of Grade 5 Learners in Terms of Awareness of Environmental Issues*

Table 2 Extent of Environmental Literacy of Grade 5 Learners in Terms of Awareness of Environmental Issues

Statements	Mean	SD	Description
1. I am aware of the impact of air pollution on human health.	4.24	0.65	Very Extensive
2. I know that climate change is caused by human activities.	4.18	0.82	Extensive
3. I am aware of the impact of deforestation on wildlife and the environment.	4.26	0.72	Very Extensive
Overall	**4.22**	**0.42**	**Very Extensive**

The statement with the highest mean is "*I am aware of the impact of deforestation on wildlife and the environment*," scoring 4.26 with a standard deviation (SD) of 0.72, indicating a very extensive awareness among the students. This suggests that the topic of deforestation and its consequences is well understood and emphasized in their learning. On the other hand, the statement with the lowest mean, though still reflecting extensive awareness, is "*I know that climate change is caused by human activities*," with a mean of 4.18 and an SD of 0.82. This slightly lower score may point to the complexity of the concept of climate change for students at this grade level. The overall mean of 4.22 (SD = 0.42) across the statements indicates a very extensive level of awareness of environmental issues among

the students. This means that the environmental literacy of Grade 5 learners is always manifested.

The high awareness of the impact of deforestation aligns with the findings of Chen and Lu (2018), who emphasized the effectiveness of environmental education in improving students' awareness of environmental issues. The relatively lower but still extensive awareness of the human causes of climate change resonates with the observations by Arancibia and Pérez-Sanagustín (2019), who noted the challenges in conveying complex environmental issues like climate change to younger students.

> *Extent of Environmental Literacy of Grade 5 Learners in Terms of Attitudes Towards the Environment*

Table 3 Extent of Environmental Literacy of Grade 5 Learners in Terms of Attitudes Towards the Environment

Statements	Mean	SD	Description
1. I feel responsible for taking care of the environment.	4.17	0.77	Extensive
2. I think it is important to protect endangered species.	4.27	0.83	Very Extensive
3. I believe that individual actions can make a difference in addressing environmental issues.	4.25	0.81	Very Extensive
Overall	**4.23**	**0.52**	**Very Extensive**

The statement with the highest mean is "*I think it is important to protect endangered species*," scoring 4.27 with a standard deviation (SD) of 0.83, indicating a very extensive level of concern and awareness about endangered species among the students. This reflects a strong ethical consideration for biodiversity conservation. In contrast, the statement with the lowest mean, though still showing extensive agreement, is "*I feel responsible for taking care of the environment,*" with a mean of 4.17 and an SD of 0.77. This could suggest a need for further fostering a sense of personal responsibility towards environmental stewardship

in education. The overall mean of 4.23 (SD = 0.52) across the statements indicates a very extensive level of positive environmental attitudes among the students. This means that the environmental literacy of Grade 5 learners is always manifested.

The strong attitude towards protecting endangered species is in line with the findings of Strife and Downey (2017), who highlighted the effectiveness of environmental education in shaping positive attitudes towards biodiversity. The somewhat lower score in personal responsibility for

environmental care echoes the research by Ojala (2019), emphasizing the importance of nurturing a sense of individual agency in environmental issues among young learners.

➢ *Extent of Environmental Literacy of Grade 5 Learners in Terms of Environmental Behavior*

Table 4 Extent of Environmental Literacy of Grade 5 Learners in Terms of Environmental Behavior

Statements	Mean	SD	Description
1. I turn off lights and electronics when I am not using them.	4.18	0.72	Extensive
2. I try to conserve water by taking shorter showers and turning off the tap when brushing my teeth.	4.14	0.68	Extensive
3. I sort my trash and recycle whenever possible.	4.23	0.66	Very Extensive
Overall	**4.18**	**0.41**	**Extensive**

The statement with the highest mean is "*I sort my trash and recycle whenever possible*," scoring 4.23 with a standard deviation (SD) of 0.66, indicating a very extensive practice of recycling among the students. This suggests a strong engagement in tangible, environmentally-friendly actions. The statement with the lowest mean, though still reflecting extensive behavior, is "*I try to conserve water by taking shorter showers and turning off the tap when brushing my teeth*," with a mean of 4.14 and an SD of 0.68. This slightly lower score may indicate a need for more emphasis on water conservation practices in environmental education. The overall mean of 4.18 (SD = 0.41) across the statements. This means that the environmental literacy of Grade 5 learners is always manifested. It indicates an extensive level of proactive environmental behavior among the students.

The extensive environmental behavior observed is consistent with the research by Hines, Hungerford, and Tomera (1987), highlighting the role of environmental education in promoting responsible environmental behavior. These results suggest that while students are actively engaging in environmentally-friendly behaviors, as supported by the work of McBeth, Jones, and Shanahan (2012), there is still potential to enhance specific behaviors such as water conservation, which is crucial for comprehensive environmental stewardship.

➢ *Extent of Environmental Literacy of Grade 5 Learnersin Terms of Civic Engagement*

Table 5 Extent of Environmental Literacy of Grade 5 Learners in Terms of Civic Engagement

Statements	Mean	SD	Description
1. I have participated in an environmental club or group at school.	4.22	0.81	Very Extensive
2. I have volunteered for an environmental organization or project.	4.18	0.77	Extensive
3. I have talked to friends and family about ways to protect the environment.	4.13	0.73	Extensive
Overall	**4.18**	**0.47**	**Extensive**

The statement with the highest mean is "*I have participated in an environmental club or group at school*," scoring 4.22 with a standard deviation (SD) of 0.81, indicating a very extensive level of participation in school-based environmental activities. This suggests that environmental clubs and groups are effective in engaging students in environmental issues. The statement with the lowest mean, though still showing extensive engagement, is "*I have talked to friends and family about ways to protect the environment*," with a mean of 4.13 and an SD of 0.73. This could indicate a need for more encouragement in discussing environmental issues outside of formal settings. The overall mean of 4.18 (SD = 0.47) across the statements. This means that the environmental literacy of Grade 5 learners is often manifested. It suggests an extensive level of

civic engagement related to the environment among the students.

The high participation in school environmental clubs is in line with the findings of McBeth, Jones, and Shanahan (2012), who emphasized the role of school activities in fostering environmental citizenship among students. The lower, yet still significant, engagement in environmental conversations with friends and family resonates with the research by Ojala (2019), highlighting the importance of informal discussions in enhancing environmental literacy.

➢ *Summary of the Extent of Environmental Literacy of Grade 5 Learners*

Table 6 Summary of the Extent of Environmental Literacy of Grade 5 Learners

Indicators	Mean	SD	Description
Knowledge of Environmental Concepts	4.16	0.41	Extensive
Awareness of Environmental Issues	4.22	0.42	Very Extensive
Attitudes Towards the Environment	4.23	0.52	Very Extensive
Environmental Behavior	4.18	0.41	Extensive
Civic Engagement	4.18	0.47	Extensive
Overall	**4.20**	**0.22**	**Very Extensive**

The indicator with the highest mean is "Attitudes Towards the Environment," scoring 4.23 with a standard deviation (SD) of 0.52, indicating a very extensive positive attitude towards environmental issues among the students. This suggests a strong internalization of environmental values. The indicator with the lowest mean, though still showing extensive engagement, is "Knowledge of Environmental Concepts," with a mean of 4.16 and an SD of 0.41. This could indicate a need for slightly more emphasis on environmental knowledge in the curriculum. The overall mean of 4.20 (SD = 0.22) across all indicators. This means that the environmental literacy of Grade 5 learners is always manifested. It suggests a very extensive level of environmental literacy among the students.

The high score in "Attitudes Towards the Environment" aligns with the findings of Strife and Downey (2017), who emphasized the effectiveness of environmental education in shaping positive attitudes towards the environment. The slightly lower score in "Knowledge of Environmental Concepts" echoes the observations by Celikten and Buyukozturk (2019), who noted the challenges in conveying complex environmental concepts to younger students.

➢ *Summary of the Extent Academic Performance of Grade 5 Learners*

Table 7 Summary of the Extent Academic Performance of Grade 5 Learners

Subjects	Mean	SD	Description*
Health	86.57	5.04	Very Satisfactory
Science	84.61	3.39	Satisfactory
Araling Panlipunan	84.85	8.23	Satisfactory
Overall	**85.36**	**3.81**	**Very Satisfactory**

* Extent of Academic Performance is based on Dep Ed DO#8, 2015

The subject with the highest mean score is "Health," with a mean of 86.57 and a standard deviation (SD) of 5.04, categorized as 'Very Satisfactory' according to the Department of Education's standards. This indicates a strong performance in health-related topics among the students. The subject with the lowest mean score is "Science," with a mean of 84.61 and an SD of 3.39, falling under the 'Satisfactory' category. This suggests room for improvement in science education. The overall mean score of 85.36 (SD = 3.81) across all subjects is categorized as 'Very Satisfactory,' showing a generally high level of academic performance among the students. This means that the academic performance of Grade 5 learners is very good.

The high performance in Health aligns with the findings of Celikten and Buyukozturk (2019), who noted the correlation between environmental literacy and academic achievement, suggesting that a strong understanding of health and environmental issues may contribute to better performance in related subjects. The lower, yet still satisfactory, performance in Science echoes the observations by Chen and Lu (2018), who highlighted the challenges in teaching complex scientific concepts to younger students.

The satisfactory academic performance observed is consistent with the research by Arancibia and Pérez-Sanagustín (2019), emphasizing the positive impact of environmental education on academic achievement. These results suggest that while there is a generally high level of academic performance, there is potential to further enhance understanding and performance in subjects like Science, which is crucial for a comprehensive educational development.

➢ *Test of Relationship between Environmental Literacy and Academic Performance of Grade 5 Learners*

Table 8 Test of Relationship Between Environmental Literacy and Academic Performance of Grade 5 Learners

Variables	Mean	SD	R	R²	Degree of Relationship	p-value	Decision @ a 0.05 Level
Environmental Literacy	4.20	0.22	0.606	0.367	High	0.00	Significant (Reject Ho)
Academic Performance	85.36	3.81					

The Pearson Product Moment Correlation was used to test if there is a significant relationship between Environmental Literacy and Academic Performance of Grade 5 Learners at a 0.05 Level of Significance.

The results show that there is a significant High Relationship (R: 0.606, p<0.05) between Environmental Literacy and Academic Performance of Grade 5 Learners at a 0.05 level of significance. The results imply that improving students' extent of environmental literacy would contribute to better academic performances in Health, Science, and Araling Panlipunan. The results also imply that 36.7 percent (R²: 0.367) of the variance or changes in

students' *academic performance in Health, Science, and Araling Panlipunan* can be attributed to their environmental literacy.

The results of this study suggest a notable relationship between environmental literacy and academic performance among Grade 5 learners. This relationship is evident in the alignment between high levels of environmental literacy, particularly in attitudes towards the environment and civic engagement, and the overall satisfactory academic performance in subjects like Health and Science.

The strong performance in Health, with the highest mean score among the subjects, can be linked to the extensive environmental literacy observed, especially in terms of students' attitudes and behaviors towards the environment. This correlation supports the findings of Celikten and Buyukozturk (2019), who emphasized the positive impact of environmental literacy on academic achievement. The understanding and values instilled through environmental education likely extend to health-related topics, as both areas share underlying themes of well-being and sustainable practices.

➤ *Indicators of Environmental Literacy Significantly Affect Academic Performance of Grade 5 Learners*

Table 9 Indicators of Environmental Literacy Significantly Affect Academic Performance of Grade 5 Learners

Indicators of	B	SE	Beta	t	p-value	Decision @ a 0.05 Level
(Constant)	43.69	4.71		9.27	0.00	Significant
Knowledge of Environmental Concepts	4.55	0.62	0.49	7.35	0.00	Significant
Awareness of Environmental Issues	0.58	0.61	0.06	0.96	0.34	Not Significant
Attitudes Towards the Environment	2.69	0.48	0.37	5.67	0.00	Significant
Environmental Behavior	1.17	0.60	0.13	1.97	0.05	Significant
Civic Engagement	0.96	0.52	0.12	1.83	0.07	Not Significant
Regression Model:						
Academic Performance = 43.69 + 4.55 (*Knowledge of Environmental Concepts*) + 2.69 (*Attitudes towards the Environment*) + 1.17 (*Environmental Behavior*) + 0.96 (*Civic Engagement*)						
F: 23.810, R: 0.693, R^2: 0.480, p: 0.00						

The Multiple Linear Regression Model was used to determine which indicators of Environmental Literacy significantly affect the Academic Performance of Grade 5 learners at a 0.05 level of significance.

The results imply that the indicators *Knowledge of Environmental Concepts* (B: 4.55, $p<0.05$), Attitudes *towards the Environment* (B: 2.69, $p<0.05$), *Environmental Behavior* (B: 1.17, $p<0.05$), and *Civic Engagement* (B:0.96, $p<0.05$) significantly affect the Academic Performance of Grade 5 learners*.* at a 0.05 level of significance

On the other hand, the indicator *Awareness of Environmental Issues* (B: 0.58, $p>0.05$) do not significantly affect the Academic Performance of Grade 5 learners*.* at a 0.05 level of significance

Moreover, the results show that 69.3% (R^2: 0.693) of the variances or improvements in Students' Academic Performance in Health, Science, and Araling Panlipunan can be predicted by the regression model, 43.69 + 4.55 (*Knowledge of Environmental Concepts*) + 2.69 (*Attitudes towards the Environment*) + 1.17 (*Environmental Behavior*) + 0.96 (*Civic Engagement)*

The results of this study indicate that the indicators of environmental literacy, specifically Knowledge of Environmental Concepts, Awareness of Environmental Issues, and Environmental Behavior, significantly affect the academic performance of Grade 5 learners. This finding aligns with existing research that underscores the interconnection between environmental literacy and academic achievement.

The significant impact of Knowledge of Environmental Concepts on academic performance can be understood through the lens of Bybee and McCrae (2011), who argued that scientific literacy and environmental literacy are closely intertwined. A solid grasp of environmental concepts likely enhances students' understanding in scientific subjects, as these concepts form a foundational part of the science curriculum. This enhanced understanding can lead to better academic performance in science-related subjects.

IV. CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the conclusions drawn from the analysis of the data collected in this study, focusing on the relationship between environmental literacy and academic performance among Grade 5 learners.

➤ *Conclusions*
Based on the results, the following conclusions are extracted:

The findings demonstrate that these learners exhibit a very extensive level of environmental literacy, particularly in their attitudes towards the environment and awareness of environmental issues. This suggests that environmental education programs at this level are effectively imparting essential knowledge and fostering positive attitudes, which are crucial for nurturing environmentally responsible behavior in young learners.

The results indicate a very satisfactory performance in Health, and satisfactory performance in Science and Araling Panlipunan. This suggests that the learners are achieving well in these subjects, with particularly strong performance in Health. The findings may reflect the effectiveness of the current curriculum and teaching methods in these areas. Additionally, the high performance in Health could be indicative of the students' understanding and appreciation of personal and environmental health, a key component of comprehensive education.

The significant relationship between the indicators of environmental literacy and academic performance in Grade 5 learners highlights the importance of environmental education. It suggests that efforts to improve environmental literacy, particularly in the areas of environmental

knowledge, awareness, and behavior, can have a positive impact on students' academic achievements across various subjects.

The relationship between environmental literacy and academic performance is evident and significant. The findings suggest that fostering environmental literacy, particularly in enhancing environmental knowledge and attitudes, could be a strategic approach to improving academic performance across various subjects. This relationship underscores the importance of integrating environmental education into the broader curriculum to support holistic educational development.

➢ *Recommendations*
Based on the conclusions, the following recommendations are forwarded:

It is recommended that the Department of Education continues to integrate and emphasize environmental literacy in the curriculum across all grade levels. There should be a focus on not only knowledge and awareness but also on cultivating positive attitudes and behaviors towards the environment. Additionally, providing teachers with adequate training and resources to effectively teach these concepts can further enhance students' environmental literacy.

School heads may prioritize environmental education within their schools by encouraging and supporting the implementation of innovative and interactive environmental learning activities. This could include school-wide projects, environmental clubs, and partnerships with local environmental organizations. School heads can also play a crucial role in fostering a school culture that values and practices environmental responsibility.

Teachers are encouraged to incorporate environmental topics into their teaching across various subjects, not just in science or social studies. This can be achieved through project-based learning, field trips, and the use of multimedia resources to engage students. Teachers should also aim to model environmentally responsible behaviors and attitudes to inspire their students.

Students are encouraged to actively participate in environmental education activities and apply their learning to everyday life. This includes practicing sustainable habits like recycling, conserving water and energy, and participating in community environmental initiatives. Students should also be advocates for the environment, spreading awareness and encouraging others to adopt environmentally friendly practices.

Future research may explore the long-term impact of environmental literacy on students' behavior and academic performance. Studies could also investigate the effectiveness of different environmental education methods and their impact on students of various age groups and backgrounds. Additionally, research could be extended to understand the role of parental and community involvement in enhancing environmental literacy among students.

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