



Knowledge, Attitudes, and Practices of Grade 6 Pupils on Sustainable Plant Care: Implications for Eco-Friendly School Gardening Programs

Catrenagen L. So¹; Arnel P. Surdilla²; Mariane P. Birondo³, Joel D. Potane⁴,
Charlie H. Cosmiano⁵

¹⁻³Agusan Elementary School, Agusan, Cagayan de Oro City, Philippines

⁴⁻⁵City College of Cagayan de Oro, Philippines

⁴Email correspondence: Catrenagen L. So

ORCID: <https://orcid.org/0009-0003-0820-6337>

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Abstract. Sustainable plant care is a vital component of environmental education that promotes ecological responsibility among learners. This study examined the knowledge, attitudes, and practices (KAP) of 148 Grade 6 pupils using a descriptive–correlational design. Data were gathered through a validated 30-item knowledge test and Likert-scale measures for attitudes and practices, and analyzed using descriptive statistics, Spearman’s rho, and regression analysis. Results revealed a moderately high level of knowledge ($M = 19.45$, $SD = 5.93$), favorable attitudes ($M = 4.12$, $SD = 0.585$), and generally practiced sustainable behaviors ($M = 3.94$, $SD = 0.567$), although gaps were noted in technical areas. Significant positive relationships were found among knowledge, attitudes, and practices, with attitudes showing the strongest association with practices ($\rho = .455$, $p < .001$). Regression results confirmed that attitudes significantly predict practices ($\beta = 0.217$, $p = .008$), but with low explanatory power ($R^2 = .046$). The findings suggest that while knowledge supports awareness, attitudes play a more critical role in shaping sustainable behavior, highlighting the importance of experiential and community-based interventions to strengthen eco-friendly practices among learners.

Keywords: environmental education; pro-environmental behavior; sustainable plant care; school gardening;



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A. Introduction

Sustainable plant care is an essential practice that ensures plant health, preserves soil, and conserves water and biodiversity. It encompasses eco-friendly gardening methods such as composting, mulching, organic fertilization, recycling, and pollinator protection, all of which contribute to environmental sustainability. Recent studies highlight that sustainable plant care practices not only benefit ecosystems but also enhance food security and climate resilience (Diel & Labay, 2025). In schools, sustainable plant care is promoted through classroom integration and gardening activities that teach children to become responsible stewards of the environment. This becomes especially relevant in Grade 6, where pupils are expected to apply foundational knowledge and skills in agriculture under the *Edukasyong Pantahanan at Pangkabuhayan (EPP)* curriculum (DepEd, 2024).

Knowledge, as an independent variable, shapes how sustainable plant care is understood and applied. Pupils with greater knowledge are more likely to adopt effective gardening practices, such as proper watering schedules, soil conservation techniques, and pest management strategies. A study on school gardens in Europe demonstrated that when learners were knowledgeable about environmental principles, they practiced them more consistently in both school and home gardens (Papadopoulou et al., 2020). Similarly, in the Philippine context, insufficient knowledge about eco-friendly gardening has been identified as a barrier to the long-term sustainability of school-based gardening programs (Cuaba, 2024). Thus, assessing knowledge provides insight into whether Grade 6 pupils can apply classroom lessons to practical and sustainable plant care.

Attitudes, another independent variable, reflect pupils' values, perceptions, and feelings toward sustainable plant care. Positive attitudes foster appreciation of plants' roles in human life and strengthen learners' willingness to engage in environmentally sound practices. According to Mellona and Peria (2025), school gardens significantly improve attitudes



toward nature by fostering a sense of ownership and pride in maintaining green spaces. In the Philippines, pupils who demonstrate favorable attitudes toward gardening are also those who show greater responsibility in recycling waste, participating in tree planting, and conserving water resources (Diel & Labay, 2025). Measuring attitudes, therefore, is crucial in determining the motivational aspect of learners' engagement in sustainable plant care.

Practices serve as the observable application of both knowledge and attitudes toward sustainable plant care. These include daily or routine behaviors such as using organic fertilizers, segregating biodegradable waste, and avoiding harmful pesticides. A case study on the implementation of the *Gulayan sa Paaralan* Program revealed that schools where pupils actively practiced eco-friendly methods achieved higher vegetable yields and greater program sustainability (Cuaba, 2024). Similarly, international studies confirm that gardening practices among children improve when lessons are reinforced with actual hands-on activities in school gardens (Papadopoulou et al., 2020). Evaluating practices thus provides evidence of how classroom learning translates into real-life environmental behaviors.

Sustainable plant care in the school setting requires structured support through curricular integration. In the Philippine K-12 framework, the DepEd EPP curriculum for Grade 6 emphasizes agriculture as a foundational strand. Learners are introduced to competencies such as soil and water management, composting, propagation, and pest control using organic methods (DepEd, 2024). However, a review of program implementation noted that without consistent monitoring of pupils' actual KAP levels, teachers may not fully recognize the effectiveness of instruction or learners' readiness to sustain eco-friendly gardening projects (Cuaba, 2024). This gap highlights the importance of a systematic approach to measuring outcomes of agricultural education in schools.

Recent studies also show that school gardening programs strengthen the connection between environmental education and community well-being. Diel and Labay (2025) emphasized that pupils who participated in gardening projects not only learned technical skills but also brought their practices into their households, thereby influencing food consumption

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patterns and home waste management. Likewise, international evidence supports the idea that school gardens foster lifelong sustainable habits and strengthen awareness of environmental issues among young learners (Papadopoulou et al., 2020). These findings reinforce the value of embedding sustainable plant care practices in the elementary curriculum.

This study, therefore, aimed to determine the levels of knowledge, attitudes, and practices of Grade 6 pupils regarding sustainable plant care. The findings served as valuable input for the planning and implementation of eco-friendly school gardening initiatives that are meaningful, sustainable, and aligned with curricular goals of both environmental stewardship and educational development.

B. Methodology

This study employed a descriptive–correlational research design to determine the levels of knowledge, attitudes, and practices (KAP) of 148 randomly selected Grade 6 pupils regarding sustainable plant care. The descriptive aspect focused on obtaining quantitative data on pupils' knowledge through a 30-item multiple-choice test, as well as their attitudes and practices using two 10-item Likert-type scales. The correlational aspect sought to determine possible relationships among the three constructs—knowledge, attitudes, and practices—to provide evidence of how understanding and values translate into actual behaviors. Prior to data collection, the instruments were subjected to content validation by three experts to ensure clarity, relevance, and alignment with the study objectives. To further establish the quality of the measures, reliability testing was conducted, yielding high coefficients for the knowledge test ($\alpha = 0.980$), attitudes scale ($\alpha = 0.879$), and practices scale ($\alpha = 0.960$), indicating excellent internal consistency.

The design was chosen because it allows for a systematic description of pupils' KAP while examining the relationships among variables in a



natural classroom setting without manipulation. This approach is appropriate for baseline assessments that aim to inform program development. In particular, the data generated served as input for enhancing eco-friendly school gardening initiatives in line with DepEd's Edukasyong Pantahanan at Pangkabuhayan (EPP) curriculum and the principles of Education for Sustainable Development (ESD).

C. Results and Discussion

Knowledge level of Grade 6 pupils on sustainable plant care

The assessment of Grade 6 learners' knowledge of sustainable plant care is vital for determining how well public-school pupils understand the principles and practices needed to protect the environment and promote responsible agriculture. Since these learners are at a formative stage, the extent of their knowledge reflects not only classroom instruction but also the influence of school-based initiatives like *Gulayan sa Paaralan*, environmental campaigns, and experiential learning. Evaluating the distribution of their scores across established intervals provides a more meaningful interpretation of their overall knowledge level and highlights areas of strength and concern that may require targeted educational interventions.

Table 1 presents the distribution of knowledge levels of Grade 6 pupils on sustainable plant care, with an overall mean score of 19.45 (SD = 5.93), interpreted as moderate knowledge. This indicates that learners possess a developing understanding of key concepts such as proper plant maintenance, soil care, watering practices, and environmental stewardship. A substantial proportion of pupils fall within the high (30.4%) and advanced (27.0%) knowledge levels, suggesting that many are already capable of not only recalling information but also applying basic principles of sustainable plant care. In the context of Bloom's Taxonomy, these learners demonstrate competencies that extend beyond remembering and understanding toward application, which is essential in fostering environmentally responsible behaviors (Anderson & Krathwohl, 2001; UNESCO, 2023).

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Table 1

Distribution of Knowledge Levels in Sustainable Plant Care among Grade 6 Pupils (n = 148)

Score Interval	Frequency (f)	Percent (%)	Interpretation
0 – 5	1	0.7	Very Low Knowledge
6 – 10	15	10.1	Low Knowledge
11 – 15	20	13.5	Basic Knowledge
16 – 20	27	18.2	Moderate Knowledge
21 – 25	45	30.4	High Knowledge
26 – 30	40	27.0	Advanced Knowledge
Overall	M = 19.45	SD = 5.93	Moderate Knowledge

Despite these positive results, a notable percentage of pupils remain at the moderate (18.2%) and basic (13.5%) levels, while some fall into the **low (10.1%) and very low (0.7%) categories**. This indicates that a portion of learners is still limited to foundational knowledge and has not fully developed the ability to apply sustainable plant care practices in real-life contexts. In terms of sustainability education, this gap suggests that learners may understand concepts such as planting techniques and environmental protection but may struggle to consistently translate these into practice, such as proper waste segregation in gardening or efficient water use (OECD, 2021). Such disparities highlight the need for differentiated instruction and targeted interventions to support learners at varying levels of understanding.

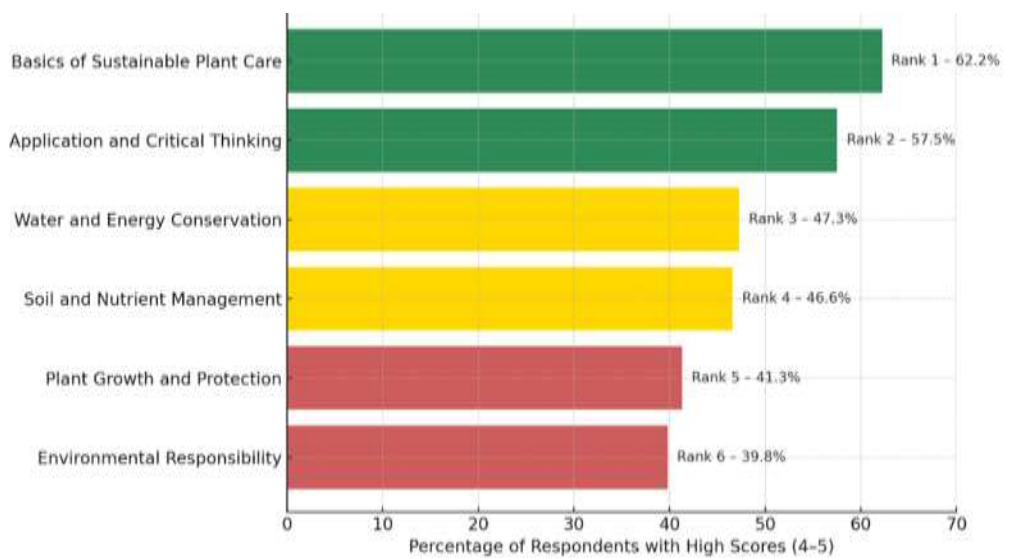
The observed distribution of knowledge levels may be influenced by learners’ exposure to school-based programs such as *Gulayan sa Paaralan*, hands-on gardening activities, and environmental awareness campaigns. Research indicates that experiential learning approaches, particularly those involving direct interaction with plants and ecosystems, significantly enhance students’ understanding of sustainability concepts and promote deeper engagement (Tilbury, 2020; UNESCO, 2023). Learners who actively participate in gardening activities are more likely to internalize sustainable practices, such as composting, organic planting, and resource conservation,

which explains the higher proportion of pupils in the high and advanced categories.

Hence, the findings imply that while sustainable plant care education is moderately effective, there is a need to strengthen instructional approaches to ensure more consistent and higher levels of learning among all pupils. Integrating **inquiry-based, experiential, and context-driven strategies** can help learners develop higher-order thinking skills, including the analysis and evaluation of sustainable practices. Emphasizing real-world application—such as maintaining school gardens, engaging in community greening initiatives, and practicing environmentally responsible behaviors can further enhance pupils' knowledge and foster long-term sustainability awareness. These efforts are crucial for developing environmentally literate individuals capable of contributing to sustainable development at both the school and community levels.

Figure 1

Ranked Knowledge levels in sustainable plant care (by component)



The ranking of knowledge levels across components, as shown in Figure 1, reveals that Grade 6 learners performed best in the Basics of Plant Care and

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Application & Critical Thinking components. More than half of the pupils scored in the high range in these domains, suggesting that they have developed foundational competencies, such as proper watering, sunlight exposure, and plant care, as well as the ability to apply this knowledge in reasoning and problem-solving. These findings highlight the effectiveness of school-based initiatives like *Gulayan sa Paaralan* and contextualized science lessons, which align with UNESCO's (2021) call for experiential and inquiry-based learning to build ecological literacy at the basic education level. The results also affirm Sharma et al.'s (2022) conclusion that hands-on, localized instruction strengthens both knowledge acquisition and higher-order thinking skills in sustainability education.

In contrast, mid-level performance was observed in Water & Energy Conservation and Soil & Nutrient Management, while weaker outcomes were recorded in Plant Growth & Protection and Environmental Responsibility. These results suggest that while learners are aware of basic conservation practices and soil-related concepts, their understanding of more technical processes such as nutrient cycling, composting, and integrated pest management remains limited. Aune et al. (2021) emphasize that such technical domains often require repeated guided practice and structured demonstrations for younger learners to internalize scientific principles. Similarly, Ahmed et al. (2023) note that awareness of conservation does not automatically translate into consistent practice, which explains the gap between knowledge and behavior in these areas. The low ranking of Environmental Responsibility indicates that while pupils recognize the importance of stewardship, they have yet to fully translate awareness into daily sustainable habits, echoing global concerns about the "knowledge-action gap" in environmental education.

The overall pattern suggests that while Grade 6 learners have moderate knowledge of sustainable plant care, variability across components calls for targeted interventions. Strengthening instruction in soil fertility, plant

protection, and environmental responsibility through project-based activities, school garden experiments, and community linkages could bridge the observed gaps. Integrating reflective tasks and performance-based assessments, such as journals and practical demonstrations, may also help move learners from partial awareness toward consistent, responsible practice. These strategies align with international recommendations that sustainability education should not only transfer knowledge but also cultivate long-term values and habits (UNESCO, 2021; Sharma et al., 2022). Ultimately, the ranked distribution underscores the need for schools to sustain strengths while addressing weaker domains to develop holistic environmental literacy among public school learners.

Attitudes of Grade 6 pupils toward sustainable plant care in terms of environmental awareness, willingness to participate in gardening, and values of responsibility and stewardship

Table 2 presents the attitude of Grade 6 learners toward sustainable plant care, showing generally favorable to highly favorable responses across all items. The highest mean scores were recorded for recognizing the importance of caring for plants to protect the environment (A1, $M = 4.53$, $SD = 0.684$) and for expressing joy in seeing plants cared for in the community (A6, $M = 4.45$, $SD = 1.012$), both of which were interpreted as highly favorable. Other items, such as willingness to participate in gardening projects (A8, $M = 4.07$) and valuing native plant species (A7, $M = 4.24$), reflect a favorable orientation toward sustainable practices. Even the relatively lower means, such as preferring natural pest control (A5, $M = 3.81$) and protecting pollinators (A9, $M = 3.76$), still fall under the favorable range, indicating positive but less consistent attitudes in these technical areas. Overall, the composite mean of 4.12 ($SD = 0.585$) suggests that Grade 6 learners hold a favorable attitude toward sustainable plant care, aligning with current literature that highlights the role of environmental education in shaping pro-sustainability values and behaviors at the elementary level.

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Table 2

Attitude toward Sustainable Plant Care among Grade 6 Learners (n= 148)

Item	Statement	Mean	SD	Interpretation
A1	I believe caring for plants in sustainable ways is important for protecting the environment.	4.53	0.684	Highly Favorable
A2	I enjoy helping in gardens using compost or organic fertilizers.	4.09	1.049	Favorable
A3	I think saving water when watering plants is a good habit.	4.08	1.066	Favorable
A4	I feel responsible for reducing waste when gardening.	3.93	0.983	Favorable
A5	I prefer using natural pest control instead of chemicals.	3.81	1.220	Favorable
A6	I feel happy when I see plants and trees being cared for in the community.	4.45	1.012	Highly Favorable
A7	I believe planting native plants and trees helps the environment.	4.24	0.980	Highly Favorable
A8	I am willing to join school or home projects like composting.	4.07	0.912	Favorable
A9	I believe protecting bees and other pollinators is important.	3.76	1.103	Favorable
A10	I believe practicing sustainable plant care benefits families and communities in the future.	4.22	0.989	Highly Favorable
Overall		4.12	0.585	Favorable

Note: 4.21-5.00 Strongly Agree (Highly favorable), 3.41-4.20 Agree (Favorable), 3 = Slightly Agree (Moderate), 1.81-2.60 Disagree (Unfavorable); 1.00-1.80 Strongly Disagree (Highly Unfavorable).

Environmental Awareness

The results show that Grade 6 pupils demonstrated a generally favorable attitude toward environmental awareness, with high mean scores across items related to caring for plants (A1, $M = 4.53$), planting native trees (A7, $M = 4.24$), and recognizing the benefits of sustainable practices for families and communities (A10, $M = 4.22$). These findings suggest that learners are aware of the ecological importance of sustainable plant care and recognize its broader societal impact. UNESCO (2021) emphasizes that early environmental education fosters ecological literacy and helps cultivate sustainable mindsets among schoolchildren. Similarly, Sharma et al. (2022) highlight that localized and practical science lessons are effective in developing awareness of sustainability issues at the primary level. The data indicate that pupils are not only aware of environmental challenges but also view plant care as a concrete way of contributing to solutions, reflecting the success of integrated environmental lessons in public schools.

Willingness to Participate in Gardening

Learners also expressed a strong willingness to engage in gardening practices, particularly composting and organic fertilizers. Items A2 ($M = 4.09$) and A8 ($M = 4.07$) both fall within the favorable range, indicating that pupils are open to participating in school- and home-based sustainability projects. This aligns with Ahmed et al. (2023), who argue that willingness to participate in environmental activities is a key predictor of behavior adoption, especially when learners are exposed to practical, hands-on opportunities. The findings suggest that pupils are motivated to extend their classroom knowledge to real-life contexts, reinforcing the value of initiatives such as *Gulayan sa Paaralan* as venues for experiential learning. However, sustaining this willingness requires continuous support, teacher encouragement, and recognition of students' efforts to ensure long-term engagement.

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Values of Responsibility and Stewardship

In terms of values, Grade 6 pupils also reflected a favorable orientation toward responsibility and stewardship. Pupils agreed that they feel responsible for reducing waste when gardening (A4, $M = 3.93$) and take joy in seeing plants cared for in their communities (A6, $M = 4.45$, highly favorable). These results highlight that learners are beginning to internalize a sense of stewardship and responsibility for the environment. According to Aune et al. (2021), instilling responsibility in young learners requires a combination of knowledge, practical experience, and role modeling from teachers and community leaders. The high score in A6 suggests that pupils are emotionally engaged with sustainability efforts, a critical factor in developing lifelong stewardship values. This echoes UNESCO's (2021) observation that environmental education must not only transmit knowledge but also foster affective and ethical dimensions of learning. The implication is that reinforcing responsibility and stewardship through classroom routines, school-wide campaigns, and community projects can help anchor these values more deeply in learners' daily lives.

Practices of Grade 6 pupils on sustainable plant care in terms of daily gardening habits, recycling and waste management, and participation in school or community gardening projects

The practices of Grade 6 pupils in sustainable plant care were examined across three dimensions: daily gardening habits, recycling and waste management, and participation in school- or community-based gardening projects. These dimensions provide insights into how often learners apply sustainable practices in their daily routines, how well they manage waste through recycling and segregation, and how actively they engage in collaborative activities that promote environmental stewardship. By analyzing these areas, the study highlights not only the learners'

knowledge but also the extent to which they translate awareness into actual behavior.

Table 3

Practices on Sustainable Plant Care among Grade 6 Learners (n = 148)

Item	Statement	Mean	SD	Interpretation
P1	I save water when watering plants	4.14	1.063	Practiced
P2	I use compost or organic fertilizer for plants.	3.97	0.954	Practiced
P3	I recycle old bottles, cans, or plastics to make plant containers.	4.19	0.992	Practiced
P4	I plant vegetables or trees at home or in school.	3.68	1.173	Practiced
P5	I put mulch (leaves or grass clippings) on the soil to keep it moist.	3.40	1.282	Sometimes Practiced
P6	I use natural ways to control pests (garlic, neem, companion planting).	3.78	1.250	Practiced
P7	I join school or community projects like tree planting.	3.76	1.297	Practiced
P8	I separate biodegradable and non-biodegradable waste for gardening.	4.13	1.090	Practiced
P9	I avoid harming bees and other helpful insects.	3.81	1.421	Practiced
P10	I keep the garden neat and clean.	4.55	1.035	Highly Practiced
	Overall	3.94	0.567	Practiced

Note. 4.21–5.00 = Highly Practiced, 3.41–4.20 = Practiced, 2.61–3.40 = Sometimes Practiced, 1.81–2.60 = Seldom Practiced, and 1.00–1.80 = Never Practiced.

Daily Gardening Habits

The survey results show that daily gardening habits are moderately strong among Grade 6 learners, with the highest practice reported in maintaining a neat and clean garden (P10, M = 4.55, *Highly Practiced*). Saving water when watering plants (P1, M = 4.14) and planting vegetables or trees

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(P4, $M = 3.68$) were also frequently practiced, although mulching was only *Sometimes Practiced* (P5, $M = 3.40$). These patterns suggest that learners are more engaged with visible, routine tasks than with technical practices that require specific knowledge or resources. Aune et al. (2021) emphasize that sustainable agricultural skills, such as mulching and pest management, require hands-on training and repeated exposure to become habitual. Schools can strengthen these areas through guided demonstrations and practical classroom integration.

Recycling and Waste Management

Practices involving recycling and waste management scored favorably, with recycling containers (P3, $M = 4.19$) and waste segregation (P8, $M = 4.13$) rated as *Practiced*. These results indicate that learners are internalizing waste-reduction habits promoted in schools and communities. UNESCO (2021) reveals that engaging pupils in recycling and segregation projects fosters ecological literacy at an early age. Similarly, Sharma et al. (2022) noted that integrating school-based recycling programs reinforces sustainable behavior through repetition and modeling. These findings imply that environmental education in public schools is helping to normalize waste-management practices, but further reinforcement is necessary to ensure these become consistent lifelong habits.

Participation in School or Community Gardening Projects

The data also highlight learners' participation in wider sustainability efforts, such as joining tree-planting activities (P7, $M = 3.76$) and avoiding harm to pollinators (P9, $M = 3.81$). While rated as *Practiced*, these are not yet at the highly practiced level, suggesting that opportunities for direct involvement may be limited or sporadic. Ahmed et al. (2023) argue that sustainable practices are more consistently adopted when learners are given meaningful roles and see the impact of their actions in their community.

Thus, expanding partnerships between schools, local government units, and community organizations can provide more structured opportunities for learners to engage in collaborative gardening and conservation projects. These activities would not only improve practical skills but also cultivate responsibility and long-term stewardship values.

Relationship among the pupils' levels of knowledge, attitudes, and practices on sustainable plant care

Table 4 presents the results of the correlation analysis, which reveal significant positive associations among the knowledge, attitudes, and practices of Grade 6 learners regarding sustainable plant care. Knowledge was moderately correlated with attitudes ($\rho = .429, p < .001$), suggesting that pupils with higher knowledge scores also tended to report more favorable attitudes toward sustainability. This finding aligns with UNESCO's (2021) framework on Education for Sustainable Development (ESD), which highlights that environmental literacy builds the foundation for the development of pro-environmental values and behaviors. It indicates that as learners gain greater understanding of sustainable plant care, they become more likely to internalize its importance and reflect it in their dispositions.

A significant but **weaker correlation** was found between knowledge and practices ($\rho = .210, p = .010$), showing that while knowledge contributes to behavior, it does not fully guarantee consistent application of sustainable practices. This gap between awareness and action is often cited in environmental education research (Ahmed et al., 2023). For example, learners may know the value of mulching or using organic fertilizers but may not practice them regularly due to limited resources, lack of guidance, or inconsistent reinforcement in school and at home. This emphasizes the need for more hands-on, structured, and community-supported learning activities to bridge the "knowledge-practice gap."

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Table 4
Correlations Among Knowledge, Attitudes, and Practices on Sustainable Plant Care

Variables	ρ (Spearman's rho)	p-value	Interpretation
Knowledge & Attitudes	0.429	< .001	Moderate positive correlation (significant)
Knowledge & Practices	0.210	0.010	Weak positive correlation (significant)
Attitudes & Practices	0.455	< .001	Moderate positive correlation (significant)

Note. $p < .05$

Additionally, a **moderate positive relationship** was observed between attitudes and practices ($\rho = .455, p < .001$), the strongest association in the matrix. This suggests that pupils with more favorable attitudes toward sustainable plant care were also more likely to engage in sustainable practices, such as recycling, water conservation, and tree planting. Sharma (2022) noted that cultivating positive environmental attitudes during childhood is a strong predictor of sustainable lifestyle choices in later years. The implication for public schools is clear: fostering positive attitudes—through experiential learning, recognition systems, and community involvement—can be a powerful lever to enhance the translation of knowledge into practice, thereby cultivating responsible and environmentally engaged young citizens.

Table 5 presents the regression analysis examining the predictive effect of pupils' attitudes on sustainable plant care practices. The results show that attitudes significantly predict practices, indicating that pupils with more

favorable attitudes toward sustainable plant care are more likely to engage in such practices. This finding supports the Theory of Planned Behavior, which explains that attitudes influence behavioral intentions and actual behavior (Ajzen, 1991; Bosnjak et al., 2020).

Table 5
Predictive effect of pupils' attitudes on the practices of sustainable plant care

Predictor	B	β	t	p	Decision	Interpretation
Constant	3.2095	----	11.62	<.001	----	----
Attitudes	0.0176	0.217	2.68	0.008	Reject Ho	Significant

Model Summary

R²=0.046; Adjusted R²=0.040; F-value=7.18; p-value=0.001; Interpretation= Significant

Specifically, attitudes had a statistically significant positive effect on sustainable plant care practices (B = 0.0176, β = 0.217, t = 2.68, p = .008). Since the p-value is less than .05, the null hypothesis is rejected. This means that an increase in positive attitudes corresponds to an increase in sustainable practices. However, the effect size (β = 0.217) indicates only a small to moderate influence, suggesting that attitudes contribute to behavior but are not the only factor shaping pupils' actions. Similar findings have been reported in recent studies, where attitudes significantly influence pro-environmental behaviors but with limited strength (Hagger et al., 2022; Steg & Vlek, 2021).

The overall model is statistically significant (F = 7.18, p = .001), confirming that attitudes can predict sustainable plant care practices. However, the coefficient of determination (R² = .046) shows that only 4.6% of the variance in practices is explained by attitudes. The adjusted R² (.040) further indicates that the model's explanatory power is relatively low. This

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suggests that while attitudes are important, most of the variation in pupils' practices (95.4%) is influenced by other factors.

These findings highlight that behavior is complex and shaped by multiple influences. Aside from attitudes, factors such as knowledge, environmental exposure, school-based programs, and family or community support play significant roles in shaping sustainable practices. This aligns with recent literature, which emphasizes that pro-environmental behavior is not driven solely by attitudes but also by contextual and social factors (UNESCO, 2023; Otto & Pensini, 2017).

The results indicate that attitudes are a significant predictor of sustainable plant care practices, but their influence is limited. This implies that efforts to promote sustainable behavior among pupils should not focus solely on improving attitudes, but also on strengthening knowledge, providing practical experiences, and creating supportive environments that encourage sustainable actions.

D. Conclusion

The findings indicate that Grade 6 pupils generally demonstrate moderately high knowledge, favorable attitudes, and practiced behaviors toward sustainable plant care. However, variability across knowledge components points to the need for targeted interventions in technical areas such as soil fertility, pest management, and environmental responsibility. While knowledge contributes to pupils' awareness, it is their positive attitudes that most strongly predict the translation of learning into consistent, sustainable practices. This highlights the critical role of affective dimensions – values, motivation, and stewardship in promoting eco-friendly behaviors among young learners.

Eco-friendly school gardening initiatives, therefore, must go beyond imparting technical knowledge to nurturing positive attitudes and providing



structured opportunities for practice. Integrating project-based learning, community engagement, and recognition systems can help sustain pupils' motivation while reinforcing responsible environmental habits. Strengthening curricular alignment with Education for Sustainable Development and DepEd's EPP competencies will ensure that school gardens function as effective platforms for environmental literacy and sustainability education. Hence, this study concludes that enhancing knowledge, shaping attitudes, and creating supportive practice environments are mutually reinforcing strategies for cultivating responsible, environmentally engaged citizens at the elementary level.

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