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# Energy conservation awareness and practices of senior high school students

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ABSTRACT

This survey-correlational research design was utilized to determine the level of energy conservation awareness and energy conservation practices among Senior High School students of Commissioner Luis R. Asis National High School for School Year 2025–2026. The respondents of this study were the 247 selected students by means of random sampling out of 645 enrolled senior high school students for the school year 2025-2026. The Taro Yamane's formula was utilized to determine the sample size of the respondents. The researcher-made Energy Conservation Awareness Questionnaire and Energy Conservation Practices Questionnaire were used to collect data for this study. The research instruments have undergone both content and face validation by the panel committee and experts in the academe to ensure its reliability and validity. The independent variable in the study was the Energy Conservation Awareness and the dependent variable was the Energy Conservation Practices of senior high school students of Commissioner Luis R. Asis National High School for the school year 2025-2026. The obtained data from the study were subjected to computer processed statistics using the Statistical Package for Social Sciences (SPSS) software. The statistical tools used to analyze the data were the Mean, Standard Deviation and Pearson r. All inferential statistics were set at .05 alpha levels. Results of the study revealed that the level of Energy Conservation Awareness of senior high school students was "very high". The level of Energy Conservation Practices of senior high school students was "very high". There was a significant relationship between energy conservation awareness and energy conservation practices of senior high school students of Commissioner Luis R. Asis National High School.

Keywords: Energy conservation awareness, energy conservation practices, senior high school students

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## INTRODUCTION

Societies worldwide are confronted with significant challenges surrounding resource consumption and sustainability. Daily human activities from household routines to industrial operations—depend on energy, and this essential commodity continues to shape economic stability, technological progress, and quality of life. Yet, the growing tension between increasing energy demands and limited natural resources signals an urgent global concern. As

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the world strives toward responsible resource management, schools become essential environments for cultivating values and habits that safeguard future generations.

In essence, understanding how young learners perceive and respond to energy-related concerns is a meaningful endeavor. Senior high school students, in particular, occupy a developmental stage where habits are formed, identities are shaped, and responsibilities toward society become clearer. Therefore, studying how they engage intellectually and practically with the concept of responsible energy use can illuminate pathways for enhancing environmental initiatives in educational settings and beyond. This research, accordingly, seeks to highlight their preparedness to be future stewards of sustainability.

Scholars in recent years have viewed energy conservation awareness as a multidimensional construct. According to Baidoo et al., (2024), it reflects individuals' recognition of the need to use energy wisely, combined with understanding the economic and environmental consequences of wasteful usage. Similarly, Nawaz et al., (2022) describe it as a cognitive process involving beliefs, perceptions, and consciousness about energy conservation and personal responsibility toward it. Thus, energy conservation awareness in this study refers to the learners' level of understanding, sensitivity, and consciousness regarding the prudent use of energy.

Correspondingly, this research is anchored on two critical major variables: (1) Energy Conservation Awareness, and (2) Energy Conservation Practices. These variables determined whether awareness results to positive energy conservation practices among senior high school students. Together, these dimensions form a comprehensive structure for assessing students' cognitive and practical capacities toward energy conservation. Each element contributes uniquely to understanding whether awareness translates into meaningful practices.

To elaborate, Energy Conservation Awareness refers to factual and conceptual understanding of energy use and its implications. Żywiołek (2021) asserts that sufficient knowledge regarding energy systems and conservation strategies plays a foundational role in motivating responsible behavior. Likewise, Nguyen-Anh (2025) explains that students with a clear grasp of environmental and energy-related concepts tend to express greater confidence in carrying out conservation efforts. Similarly, Nawaz et al. (2022) emphasize that awareness are strong predictors of energy-efficient behaviors, particularly when paired with a sense of responsibility and concern for environmental outcomes. Furthermore, Daud et al., (2025) highlight that ethical considerations and positive ecological values strengthen willingness to participate in energy conservation activities. Hence, in this study, awareness encompasses understanding of energy sources, energy conservation methods, and the environmental impact of misuse.

Furthermore, Energy Conservation Practices pertains to the observable actions individuals perform to conserve energy. Bishoge and Mvile (2024) found that although students acknowledge the importance of sustainability, their actions remain inconsistent and influenced by personal habits and social pressure. Likewise, Heib et al., (2023) explain that energy conservation behavior evolves not only from intent but also from social norms and self-control. Thus, in the school context, this sub-variable includes behaviors such as turning off unused lights, unplugging devices, and adopting energy-efficient routines.

Despite increasing environmental campaigns, however, gaps in student behavior remain visible. For instance, while many students discuss environmental issues confidently, their daily conduct often reflects limited application of learned concepts. Several classrooms still show lights left running unnecessarily, gadgets plugged in without use, and limited peer-encouragement toward sustainable routines. This disconnect suggests that awareness alone does not always translate into responsible action, thereby signaling a need for deeper academic inquiry.

In addition, observations within the school community reveal that energy conservation awareness and practices vary widely among senior high school students. Some express interest and responsibility toward energy concerns, whereas others show limited motivation or understanding. This inconsistency indicates underlying educational, behavioral, and cultural factors influencing student engagement. Thus, the study is motivated by the need to identify strengths, weaknesses, and possible interventions that may cultivate more proactive energy conservation practices among learners.

Theoretically, this study is grounded first on Bandura's Social Cognitive Theory (SCT). As Zhang et al., (2023) emphasize, SCT highlights how learning occurs through interaction among personal beliefs, behavior, and environmental factors. Individuals develop behavioral patterns through observation, self-efficacy, and reinforcement. Therefore, the theory supports the notion that awareness and environmental influences shape students' actions and practices toward energy conservation.

Moreover, the study adopts Ajzen's Theory of Planned Behavior (TPB) as a guiding framework. Heib et al., (2023) explain that behavior is influenced by consciousness, perceived social norms, and perceived control over carrying out actions. In school settings, this means students conserve energy not only because they believe it is important but also because they feel capable of doing so and perceive that others expect such behavior. Thus, TPB helps clarify how intention mediates the link between awareness and action.

Additionally, this study draws support from the Environmental Education Theory (Ardoin et al., 2020) which highlights the importance of developing knowledge and practices that encourage environmental protection. The theory asserts that learning experiences and school-based programs shape environmental responsibility. Thus, integrating environment-focused instruction and school culture supports consistent and meaningful student involvement in conservation efforts.

In relation to the present study, the Social Cognitive Theory (SCT), Theory of Planned Behavior (TPB), and Environmental Education Theory collectively provide a strong foundation for understanding the energy conservation awareness of Senior High School students. SCT highlights how students' knowledge and observed environmental practices influence their confidence and behavior toward conserving energy, while TPB explains how consciousness, social expectations, and perceived control shape their intention to perform energy conservation practices. Likewise, Environmental Education Theory emphasizes the school's role in developing students' environmental values and habits through structured learning experiences. Together, these theories support investigating students' awareness and practices by showing how energy conservation awareness influence to shape energy conservation practices.

Therefore, this study focused on determining the level of Energy Conservation Awareness and Practices of Senior High School students of Commissioner Luis R. Asis National High School, particularly to investigate whether awareness results to actual energy conservation practices. Through this investigation, the researcher aims to identify current levels, gaps, and relationships among these variables, and ultimately suggest strategies that promote deeper environmental consciousness and responsible behavior within the academic setting.

Statement of the problem

This study aimed to determine the level of energy conservation awareness and energy conservation practices of Senior High School students of Commissioner Luis R. Asis National High School for the School Year 2025–2026.

Specifically, this sought answers to the following questions:

1. What is the level of energy conservation awareness among Senior High School students?
2. What is the level of energy conservation practices among Senior High School students?
3. Is there a significant relationship between energy conservation awareness and energy conservation practices among Senior High School students?

## METHODOLOGY

This chapter describes the methods and procedures used in the study. It is organized into three sections, namely the Purpose of the Study and Research Design, the Methods, and the Statistical Data Analysis Procedures. The first section reiterates the study's purpose and the research design chosen to address the research questions, and explains how the design supports the investigation on the relationship of energy conservation awareness and energy conservation practices of the students. The second section outlines the participants, instruments, and data gathering procedures, including the sampling method, research tools used, and the steps followed in conducting the study. The third section presents the statistical techniques used in analyzing the data and explains how the results will be interpreted to determine the relationships among the variables and validate the findings.

The main purpose of this study was to determine the level of energy conservation awareness and energy conservation practices among Senior High School students of Commissioner Luis R. Asis National High School for School Year 2025–2026. This study also sought to investigate the relationship between energy conservation awareness and energy conservation practices among senior high school students. A quantitative method which utilized a survey correlational design was employed in this study to determine the level of energy conservation awareness and energy conservation practices among senior high school students for the School Year 2025–2026, as it allowed objective measurement of data and statistical analysis of the study variables. As noted by Creswell (2014), quantitative research systematically collects and analyzes numerical data to draw objective conclusions. Specifically, a correlational research method was utilized to assess the degree and direction of the relationship between the variables. In this study, the independent variable was the Energy Conservation Awareness while the dependent variable was the Energy Conservation Practices. The statistical tools used for the analysis of data were the Mean, Standard Deviation, and Pearson Product Moment Correlations (Pearson r). All inferential statistics were set at .05 alpha levels.

The participants of this study were the 247 Senior High School students selected from the total population of 645 senior high school students enrolled at Commissioner Luis R. Asis National High School for the School Year 2025–2026. The sample size was determined using Taro Yamane's formula, which calculates an appropriate sample based on the population size, ensuring that the selected participants adequately represent the overall student body. The stratified random sampling method was used to achieve a balanced representation across different grade levels. According to Vockell (1983), stratified random sampling is a strategy for selecting samples in such a way that specific sub-groups (strata) will have a sufficient number of representatives within the sample to provide sample numbers for sub-analysis of the members of these sub-groups. This strategy enables the determination of the extent to which each stratum in the population is represented in the sample. The distribution of the sample size

across grade levels reflected the proportional allocation of respondents, wherein Grade 11 had a population of 332 students from which 127 respondents were drawn, while Grade 12 had a population of 313 students from which 120 respondents were drawn, yielding a total population of 645 students and a total sample of 247 respondents.

The data needed for the study were gathered using a researcher made instrument that had undergone pilot testing as well as face and content validation to ensure its reliability and accuracy. The survey questionnaire was divided into two parts. Part I was composed of 30 items that gathered data about the students' level of understanding on energy conservation concepts, while Part II, which measured the frequency and consistency of energy conservation practices exhibited by Senior High School students, was also composed of 30 items. The Awareness of Energy Conservation Questionnaire was a 30-item researcher made instrument used to determine the energy conservation awareness of students. Item numbers 1 to 10 of the questionnaire pertained to chemical energy conservation awareness, item numbers 11 to 20 pertained to electrical energy conservation awareness, and item numbers 21 to 30 pertained to thermal energy conservation awareness. All items in the questionnaire were rated using a Likert scale wherein a score of 5 corresponded to Strongly Agree, 4 to Agree, 3 to Uncertain, 2 to Disagree, and 1 to Strongly Disagree. To describe the level of energy conservation awareness of the senior high school students of Commissioner Luis R. Asis National High School, the following interpretive scale was used: a mean range of 4.21 to 5.00 was interpreted as Very High Awareness, 3.41 to 4.20 as High Awareness, 2.61 to 3.40 as Moderate Awareness, 1.81 to 2.60 as Low Awareness, and 1.00 to 1.80 as Very Low Awareness. The researcher made questionnaire, with a Cronbach's Alpha value of 0.960, underwent face validity and content validity with the assistance and complete constructive critiquing of the panel.

The Energy Conservation Practices Questionnaire was a 30-item researcher made instrument utilized to measure the energy conservation practices of the students. Item numbers 1 to 10 of the questionnaire pertained to chemical energy conservation practices, item numbers 11 to 20 pertained to electrical energy conservation practices, and item numbers 21 to 30 pertained to thermal energy conservation practices. All items in the questionnaire were evaluated using a five-point Likert scale in which a score of 5 corresponded to Always, 4 to Often, 3 to Sometimes, 2 to Rarely, and 1 to Never. For the descriptive interpretation of mean scores, a mean range of 4.21 to 5.00 was interpreted as Very High Practice, 3.41 to 4.20 as High Practice, 2.61 to 3.40 as Moderate Practice, 1.81 to 2.60 as Low Practice, and 1.00 to 1.80 as Very Low Practice. The researcher made questionnaire, with a Cronbach's Alpha value of 0.969, also underwent face validity and content validity with the assistance and complete constructive critiquing of the panel.

In gathering the data, the researcher secured formal permission from the Schools Division Superintendent of Capiz and the School Principal of Commissioner Luis R. Asis National High School through an official letter. Upon approval, the researcher personally informed the target respondents about the purpose of the study and the importance of their participation. To ensure that parents and students were informed about the nature of the study, a parental consent letter for the parents and an assent form for the students were provided. After securing all the necessary permits, the researcher distributed the questionnaires to the selected respondents in a face-to-face setting. Respondents were informed that they were taking part in a research study, that the study may provide insights into energy conservation awareness and practices, that their participation was entirely voluntary, and that confidentiality of responses must be strictly maintained. Respondents were given adequate time to thoughtfully complete the questionnaires. Once completed, all questionnaires were collected, checked for completeness, and prepared for statistical analysis. The students' responses were recorded,

tallied, and tabulated to ensure accurate data collection and analysis, while the researcher monitored the process to provide clarification if needed, ensuring that all respondents understood the items before answering. To further ensure reliability and accuracy, the instrument underwent content validation and pretesting with thirty (30) students who were not part of the main study, and adjustments and recommendations from experts as well as the pretest results were incorporated into the final instruments prior to administration. After the final data collection, the results were organized and forwarded to the researchers' statistician and were statistically analyzed using SPSS. The responses were scored according to the predetermined Likert scales, and mean scores were computed for each variable. Descriptive statistics summarized the levels of awareness and practices, while inferential statistics, including Pearson correlation coefficients and ANOVA, were used to determine the relationships and differences among the study variables.

Throughout the data gathering process, ethical considerations were strictly observed. The researcher ensured that participation was voluntary, that respondents were fully informed about the study's purpose, and that all information provided must remain confidential. In compliance with the Data Privacy Act of 2012 (RA 10173), all personal information collected was handled with the highest level of protection, stored securely, and accessed only for research purposes. This approach ensures the integrity of the data and the protection of respondents' rights.

The data gathered from this study were analyzed using the Statistical Package for Social Sciences (SPSS) software, employing several statistical tools. The Mean was used to determine the levels of Energy Conservation Awareness and Practices among the respondents. The Standard Deviation was employed to assess the variability of responses, indicating the degree of homogeneity or heterogeneity in the levels of awareness and practices among the students. The Pearson r, or Pearson Product Moment Correlations, a parametric test set at a 0.05 alpha level of significance, was applied to determine the relationships between Energy Conservation Awareness and Energy Conservation Practices among senior high school students. A significance level of 0.05 was set for all statistical tests to ensure rigorous and reliable interpretation of the results.

## RESULTS AND DISCUSSION

This chapter presents the interpretation of the data gathered and discusses the results of the study in direct relation to its stated objectives. The investigation employed a survey-correlational research design involving 247 senior high school students of Commissioner Luis R. Asis National High School, who were selected through random sampling from a population of 645 enrolled senior high school learners for the School Year 2025-2026. Data were collected using a researcher-made survey questionnaire that underwent pilot testing as well as content and face validity procedures to ensure its reliability and validity, with energy conservation awareness treated as the independent variable and energy conservation practices treated as the dependent variable. The gathered data were processed, encoded, and analyzed through the Statistical Package for Social Sciences (SPSS), using the mean and standard deviation to describe the levels of both variables and the Pearson r correlation coefficient to determine the significant relationship between them, with the level of significance set at 0.05 alpha to ensure rigorous and reliable interpretation. The succeeding discussion presents the descriptive and inferential findings together with their corresponding analysis and interpretation, organized into descriptive data analysis and inferential data analysis, with all interpretations grounded strictly in the data gathered from the respondents.

### Descriptive data analysis

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Level of energy conservation awareness

The level of energy conservation awareness of the senior high school students of Commissioner Luis R. Asis National High School yielded an overall mean score of 4.44 with a standard deviation of 0.36, which falls within the scale range of 4.21 to 5.00 and is therefore described as "Very High Awareness." The scale used to interpret this result classifies mean values from 4.21 to 5.00 as Very High Awareness, 3.41 to 4.20 as High Awareness, 2.61 to 3.40 as Moderate Awareness, 1.81 to 2.60 as Low Awareness, and 1.00 to 1.80 as Very Low Awareness. The relatively low standard deviation of 0.36 indicates that the responses of the participants were tightly clustered around the mean, suggesting a generally homogeneous pattern of very high awareness across the respondent group rather than wide variation in their understanding of energy conservation. This finding shows that the senior high school students of Commissioner Luis R. Asis National High School are very much aware of energy conservation concepts and already possess prior knowledge and consciousness regarding how to conserve and save energy, indicating a strong and clear understanding of the importance of saving energy in their daily lives. Such prior knowledge and consciousness may be attributed to exposure within their senior high school curriculum, particularly through subjects such as Earth and Life Science and Physical Science, in addition to specialized school interventions, experiential learning activities, and household routines that collectively reinforce energy-saving values and behaviors.

This pattern is consistent with the work of Ji et al. (2023), who emphasized that energy conservation awareness develops through interconnected experiences across school, home, and community environments, all of which reinforce students' understanding of energy uses and related issues. The result is further supported by Kwakwa (2024), who reported that learners who perceive strong institutional advocacy for energy conservation, such as visible poster campaigns, administrative policies, and teacher modeling, exhibit stronger intentions to conserve energy compared with those in environments without such reinforcement, suggesting that students' awareness is shaped not only by classroom instruction but also by daily school routines that actively promote conservation values. In a similar vein, Flores and Chua (2021) found that students who observe energy conservation practices at home develop stronger awareness due to early modeling and discussions about electricity use and costs, implying that providing students with real-life examples of electricity costs strengthens the link between everyday energy practices and their financial consequences, thereby reinforcing responsible energy use. The findings likewise conform to Delmas (2024), who emphasized that students exposed to structured energy education courses exhibit increased awareness and understanding of energy-related concepts, leading to more conscious practices toward conservation; this is highly applicable to the present respondents, who are enrolled in subjects such as Earth and Life Science and Physical Science, where topics related to climate change, sustainability, renewable energy, and efficient resource use are formally tackled and reinforced through guided classroom discussions and contextualized examples that relate energy conservation to real-life situations.

Level of energy conservation practices

The level of energy conservation practices of the senior high school students of Commissioner Luis R. Asis National High School obtained an overall mean score of 4.31 with a standard deviation of 0.43, which falls within the scale range of 4.21 to 5.00 and is therefore

described as "Very High Practice." The interpretive scale categorizes mean values from 4.21 to 5.00 as Very High Practice, 3.41 to 4.20 as High Practice, 2.61 to 3.40 as Moderate Practice, 1.81 to 2.60 as Low Practice, and 1.00 to 1.80 as Very Low Practice. The standard deviation of 0.43, while slightly higher than that of awareness, still reflects a relatively close clustering of responses around the mean, indicating that the very high level of energy conservation practice is broadly shared across the respondents with only modest variability. This result implies that senior high school students are actively engaging in and applying energy-saving habits, and that they do not only understand the importance of conserving different forms of energy such as chemical energy, electrical energy, and thermal energy, but they also consistently apply energy conservation behaviors in their daily routines at school, at home, and within the community. The very high level of energy conservation practices observed among the respondents further supports the claim that knowledge and awareness translate into actual behavior, suggesting that conceptual understanding among the participants has been operationalized into habitual, observable, and sustained conservation actions.

This finding is consistent with the study of Navarro and Feliciano (2019), who reported that students who understand energy-efficient technologies and environmental consequences demonstrate stronger responsibility and consistency in practicing energy-conservation behaviors, implying that energy literacy serves as the foundation that shapes values and ultimately manifests in real-life conservation habits. The result is likewise aligned with the work of Ortega and Santos (2020), who emphasized that regular participation in school-based conservation programs plays a crucial role in shaping student energy behaviors, particularly through initiatives such as student-driven energy patrol teams, the annual school-wide Earth Hour observance, and classroom-assigned energy monitors, all of which cultivate accountability and discipline in saving and conserving energy. In addition, Medina and Yu (2023) found that students who underwent hands-on school energy audits and attended workshops on efficient appliance use reflected significantly stronger habits, including monitoring power consumption and unplugging devices before leaving a room, thereby illustrating how experiential learning equips students to translate theoretical understanding into daily, meaningful practice. The findings also conform to Cruz and Mendoza (2020), who emphasized that household modeling serves as a foundational factor in sustaining student energy conservation, since students who observed parents regularly engaging in energy-efficient routines were more inclined to adopt the same behaviors. Further evidence is provided by Estrella and Pineda (2023), who highlighted that peer behavior greatly affects personal conservation routines, noting that students who belong to green clubs, observe classmates minimizing appliance use, or participate in group energy conservation pledges tend to demonstrate similar energy-conscious behaviors such as limiting charging time and closing windows to maintain indoor cooling, which underscores how peer modeling fosters a supportive and socially driven culture of conservation.

## Inferential data analysis

### Relationship between energy conservation awareness and energy conservation practices

The test of relationship between energy conservation awareness and energy conservation practices among the senior high school students of Commissioner Luis R. Asis National High School was conducted using the Pearson r correlation coefficient at a 0.05 alpha level of significance. The analysis yielded a correlation coefficient of 0.944 with a significance value of 0.000, which is markedly lower than the generally accepted cutoff of 0.05, where $p<0.05$ denotes significance at the 5% alpha level and $p>0.05$ denotes non-significance. Based on these values, there exists a very strong, positive, and significant linear relationship between

energy conservation awareness and energy conservation practices, indicating that the two variables are statistically dependent on each other. The Pearson r value of 0.944 reflects a substantial and direct association, meaning that as the level of energy conservation awareness increases, the level of energy conservation practices also increases in a consistent and predictable manner among the respondents. Consequently, the null hypothesis stating that there is no significant relationship between energy conservation awareness and energy conservation practices among senior high school students is rejected, which affirms that awareness is a meaningful determinant of practice within the surveyed population.

This significant relationship implies that energy conservation awareness affects the level of energy conservation practices and vice versa, suggesting that students who demonstrate a higher level of awareness regarding energy issues, conservation principles, and environmental impact are more likely to engage in energy-saving behaviors in their daily lives. This outcome can be explained by the learning conditions and lived experiences of the respondents, who are continuously exposed to energy-related topics through their science subjects, school campaigns, and classroom discussions; these learning experiences provide them with factual knowledge about electricity use, environmental consequences, and the importance of sustainability, so that students who understand why energy must be conserved become more motivated to act on that understanding through deliberate daily practices. Beyond classroom learning, students who exhibit higher awareness also tend to show greater personal responsibility in school routines, as those who comprehend the impact of electricity waste are more consistent in turning off lights, unplugging chargers, and managing electric fan usage in classrooms, demonstrating that their awareness does not remain at the level of mere knowledge but translates into conscious action because they perceive a direct connection between their behavior and its consequences. The same orientation extends to the home setting, where students with higher awareness become more mindful of household energy use, more likely to remind family members to conserve power, avoid unnecessary gadget charging, and use appliances responsibly, thereby empowering them to influence not only their own behavior but also the practices within their families. Moreover, participation in school-based conservation programs strengthens this link between awareness and practice, as students who actively engage in environmental activities, energy-saving campaigns, and classroom monitoring roles demonstrate a stronger commitment to conservation behaviors and reinforce the idea that awareness is not merely theoretical but practical and action-oriented.

The result of the present study is supported by Navarro and Feliciano (2019), whose investigation revealed that senior high school students who understood energy-efficient technologies and environmental consequences displayed stronger beliefs about personal responsibility, which then translated into consistent conservation behaviors and practices, thereby reinforcing the present finding that awareness serves as the cognitive and motivational foundation for actual practice. The findings also conform to Bautista and Reyes (2020), who argued that structured science instruction enhances awareness regarding renewable sources, efficiency, and energy impacts, which in turn cultivates pro-environmental attitudes of concern and responsibility, noting that students with deeper understanding expressed ethical commitment to conservation and practiced routine energy-saving behaviors such as limiting gadget usage and maximizing ventilation; thus, academic knowledge fosters environmental values, reinforcing the belief that informed learners behave more sustainably. The relationship between awareness and practice may further be influenced by exposure to hands-on and school-based conservation initiatives, as Flores and Chua (2021) found that students who gained knowledge from parental behavior and household discussions developed positive conservation practices reinforced by family culture, while Rahman and Abdullah (2020) demonstrated that

experiential activities such as energy audits and appliance wattage analysis improved students' factual knowledge and nurtured a deeper understanding of conserving electricity, with this informed awareness translating into consistent behavioral patterns and confirming that practical engagement enhances both technical understanding and habitual practices toward energy efficiency. In addition, Cruz and Mendoza (2020) reported that awareness acts as a mediator on actual practices, since students with low energy knowledge exhibited inconsistent practice of energy conservation, while those who developed strong environmental beliefs and personal responsibility based on factual knowledge displayed more persistent practices, a pattern that is consistent with the broader body of literature represented by Navarro and Feliciano (2019), Bautista and Reyes (2020), Flores and Chua (2021), and Rahman and Abdullah (2020), all of which emphasize that students' knowledge, values, and sense of responsibility are the primary drivers of their actual energy conservation behaviors and practices.

Synthesis of findings

Taken together, the findings of this study provide a coherent and empirically grounded response to the three research objectives that guided the investigation. The descriptive results establish that the 247 senior high school students of Commissioner Luis R. Asis National High School demonstrated a "Very High Awareness" of energy conservation, with a mean of 4.44 and a standard deviation of 0.36, and a "Very High Practice" of energy conservation, with a mean of 4.31 and a standard deviation of 0.43, indicating that the respondents not only possess strong cognitive awareness regarding the importance of conserving energy but also consistently translate this awareness into observable daily behaviors at school, at home, and within their community. The inferential analysis, anchored on Pearson r at the 0.05 alpha level, yielded a correlation coefficient of 0.944 with a significance value of 0.000, which led to the rejection of the null hypothesis and confirmed a very strong, positive, and significant relationship between energy conservation awareness and energy conservation practices, thereby establishing that increases in awareness are systematically associated with increases in practice among the respondents. Collectively, these results address the study's objectives by quantifying both variables, characterizing their qualitative descriptions, and statistically validating the directional and significant link between them, while also contributing meaningfully to the existing body of literature by reinforcing the position advanced by Ji et al. (2023), Kwakwa (2024), Delmas (2024), Navarro and Feliciano (2019), Bautista and Reyes (2020), Flores and Chua (2021), Rahman and Abdullah (2020), Ortega and Santos (2020), Medina and Yu (2023), Cruz and Mendoza (2020), and Estrella and Pineda (2023), that awareness, when reinforced by classroom instruction, household modeling, peer influence, and school-based conservation initiatives, becomes a powerful determinant of sustained energy conservation behavior. These findings hold practical significance for curriculum designers, school administrators, parents, and community stakeholders, as they affirm the value of integrating energy conservation content across science subjects, sustaining school-based environmental programs, and strengthening home and peer reinforcement to nurture environmentally responsible learners, and they logically pave the way for the subsequent chapter, which presents the summary of the problems, methods, and findings, the conclusions drawn from the study, and the recommendations directed toward stakeholders and future researchers.

## CONCLUSION

The findings of this study provide a comprehensive understanding of the energy conservation awareness and practices of senior high school students at Commissioner Luis R. Asis National High School, as well as the relationship between these two variables. The results revealed that the senior high school students of Commissioner Luis R. Asis National High School demonstrated a very high level of energy conservation awareness. This indicates that the students possess a strong and clear understanding of the importance of saving energy and have developed prior knowledge and consciousness regarding the various ways through which energy can be conserved. Such awareness appears to have been nurtured through the collective experiences and knowledge gained from their school, home, and community environments, which together have shaped their consciousness toward energy-related concerns.

In addition to their heightened awareness, the senior high school students likewise exhibited a very high level of energy conservation practices. This implies that the students do not only possess theoretical awareness of energy conservation but also consistently apply this knowledge in their daily activities at home, in school, and within the community. Such a very high level of practice enables them to become responsible and energy efficient individuals who actively engage in the wise and practical use of various forms of energy, including chemical, electrical, and thermal energy. Through these strong conservation practices, the students are able to properly perform and sustain activities that help conserve different forms of energy, reflecting their genuine commitment to translating knowledge into action and thereby contributing positively to energy sustainability and environmental protection.

Furthermore, the study established that there was a significant relationship between energy conservation awareness and energy conservation practices among the senior high school students of Commissioner Luis R. Asis National High School. This finding suggests that improving the energy conservation awareness of individuals, making information more accessible to them, and educating the public, particularly the students, will consequently result in higher levels of energy conservation practices. The relationship affirms the notion that knowledge serves as a strong foundation for behavior, and that informed individuals are more likely to engage in sustainable actions that benefit both the environment and society at large.

In light of these conclusions, several recommendations are advanced to sustain and further enhance the observed outcomes. The students may continue to strengthen and sustain their level of awareness through continuous active learning and meaningful engagement in energy related activities, deepening their understanding of the long-term effects of energy misuse on the environment, economy, and society. They may also apply what they have learned in school by consistently practicing the wise and practical use of chemical, electrical, and thermal energy in their daily routines, while participating in various energy conservation, efficiency, and sustainability programs, activities, and campaigns within their homes, schools, and communities. Teachers, on the other hand, may continuously integrate energy conservation concepts into their lessons and classroom activities, design participative activities aligned with energy conservation awareness, serve as role models in the proper practice of energy conservation both inside and outside the classroom, and consistently monitor and remind students to observe energy efficient behaviors during school activities to reinforce positive habits. School administrators may likewise support and institutionalize energy conservation efforts within the school community by implementing school-wide energy conservation programs, policies, and campaigns, and by providing adequate facilities, resources, and equipment that promote energy efficiency. Policymakers and community stakeholders may coordinate with barangays and the school community to strictly promote ordinances that help conserve energy and protect the environment, thereby improving the level of awareness and

practices not only among students but also within the wider community, while collaborating with schools through community-based programs, incentives, and awareness campaigns to sustain students' energy saving practices beyond the school setting.

Finally, the significant relationship established between energy conservation awareness and practices affirms that being equipped with sufficient knowledge about energy conservation eventually leads to the consistent application of conservation practices. Future researchers may therefore expand the scope of this study by exploring other variables such as attitudes toward energy conservation, access to energy efficient technologies, and socio-economic factors that may influence students' energy conservation practices. They may also employ additional data gathering methods such as interviews or seminars to further enrich the investigation. Taken as a whole, the study underscores that the cultivation of awareness and the consistent practice of energy conservation among students are essential pillars in nurturing a generation of environmentally responsible citizens committed to the sustainable use of energy resources.

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