



Student Perceptions of Seiso Day: Enhancing Cleanliness Habits and Sustainability at Tubod College

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Abstract

Background and Aims: Grounded in Albert Bandura's Social Learning Theory, this study examines how student participation in SEISO Day influences discipline, hygiene practices, and environmental awareness at Tubod College. Structured school-based cleanliness programs are believed to shape positive behaviors through observation and shared responsibility. This study aims to explore students' perceptions of SEISO Day, identify gaps in its implementation, and propose a framework for a sustainable, long-term SEISO Day program.

Methodology: A qualitative phenomenological design was employed, involving 20 students from different year levels selected through purposive sampling. Data were collected using semi-structured interviews and open-ended questionnaires. Thematic analysis was conducted to identify patterns in students' experiences and behavioral changes.

Results: Findings reveal that SEISO Day promotes cooperation, teamwork, and environmental stewardship. Students reported improved discipline, responsibility, and resilience despite challenges such as limited resources. Peer modeling and collective participation contributed to positive habit formation; however, sustaining long-term engagement remains difficult without consistent institutional support.

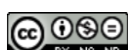
Conclusion: SEISO Day is an effective initiative for enhancing social skills, accountability, and cleanliness practices. To ensure sustainability, the program should be institutionalized through structured scheduling, increased faculty involvement, and adequate provision of cleaning resources. The findings provide empirical support for establishing SEISO Day as a long-term strategy for promoting discipline and environmental responsibility.

Keywords: Cleanliness Habits, Discipline, Environmental Awareness, SEISO Day, Social Learning Theory, Student Participation

Introduction

Educational institutions have one of the most important roles to offer a healthy, safe, and clean environment that helps in effective learning and disciplined actions. The orderly school environment is not only a hygiene issue, but a pedagogical resource that helps in accountability and respect for the shared spaces. To do so, most institutions have applied the Japanese 5S Framework: Seiri (Sort), Seiton (Set in order), Seiso (Shine/Clean), Seiketsu (Standardize), and Shitsuke (Sustain). Particularly, Seiso is the methodical cleaning of the working place where any trash is eliminated, and all the tools and places are in the best possible condition. This philosophy is implemented at Tubod College with the system known as Seiso Day, an effort to shift out of the old methods of the cleanup drives, to incorporate the maintenance aspect of the student character.

Seiso Day implementation relates, in theory, to the Social Learning Theory by Bandura (1977), and according to this theory, people can develop positive habits through shared responsibility, social modeling, and observing others. In recent research by Ulum et al (2017) and Falhah (2025), it has been proposed that the establishment of school communities working with the community in structured





cleaning leads to the growth of increased environmental awareness and a collective sense of responsibility in the students. Nevertheless, there are socio-environmental challenges in the adoption of such international standards in the Philippine higher education setting. Being researchers, we find ourselves in the Tubod College community, and we feel that there is a disconnection as the institutional Seiso Day is enacted, the shift in a planned event to a personal habit, which would be self-sustaining, is difficult to reach.

Although the overall advantages of school cleanliness have been extensively documented, there is a huge gap in knowledge regarding the student experience as the key contributor to the sustainability of a program. The existing literature tends to emphasize the administrative results, and not the perceptions at the user-level, which determine whether a habit is maintained or not. Within Tubod College, the local barriers present to the students are extreme heat, heavy academic loads, and the lack of regular access to cleaning materials, which pose a threat to the effectiveness of the 5S philosophy. It is through this perceived burden that many such programs are not made sustainable by relying on a top-down mandate without responding to the perceived burdens. Thus, the proposed study claims that student perceptions are the missing link in the policymaking process; without examining the socio-environmental forces behind program adherence, any piece of a so-called Sustainability Program will be merely hypothetical.

Objectives

This is a qualitative research study that assesses the effectiveness of the seiso day in influencing the behaviors of Tubod College students in terms of discipline and cleanliness using the Social Learning Theory advanced by Bandura. It tries to determine socio-environmental constraints like lack of resources and climate to close the gap that exists between institutional requirements and student lives. Finally, the study gives an empirical foundation for how to convert Seiso Day into a sustainable and long-term institutional program, as opposed to a periodic one.

Literature review

The literature review below provides a synthesis of local and global studies to situate the discussion about disciplinary and hygiene practices in the light of the students' perception of the structured cleanliness programs, like SEISO Day. The review is divided into three thematic pillars as follows: (1) The Operationalization of SEISO/5S Programs, (2) Factors Influencing Cleanliness Habits, and (3) The Relationship between Environment and Student Discipline.

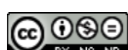
Thematic Synthesis of SEISO and Cleanliness Initiatives

The existing literature is one that has always accepted structured cleanliness programs as an effective means of instilling responsibility and positive student behaviors. Ulum et al. (2017) state that organized cleaning, be it in the form of competition monitoring contests or community sustainable assignments, greatly enhances environmental awareness and student involvement.

However, a comparative analysis of these studies suggests a dilemma of sustainability. Although Gatarin (2020) discovered that the moment of participation was secured by an approach to competition, the research also revealed that there is a loss of viability when the possibility of constant motivation and external enforcement is eliminated. Likewise, 90 percent of the students in the Ulum et al (2017) study did acquire better environmental knowledge, but the results indicate that the awareness does not automatically evolve into long-term habituation, unless the institutional support is provided in the end. This poses that although SEISO offers a working method, it is usually an external demand as opposed to an internalized routine, a gap into which the research aims to delve in the context of Tubod College.

Synthesis of Cleanliness Habit Formation

The establishment of hygienic behaviors is becoming increasingly associated with the institutional culture and values-based cleaning practices. Falhah (2025) proves that the 5S philosophy (Seiri, Seiton, Seiso, Seiketsu, Shitsuke) serves as a moral sink, enhancing student discipline and cleanliness with the help of organized action research. This agrees with the wider view of the environmental education community that interactive engagement of practical activity is more effective compared to theoretical education only (Ulum et al., 2017).





Regardless of these positive results, the literature available pays much attention to the mechanical application of these habits in Madrasahs or primary schools. The gap in the scholarly perspectives on the way in which college-aged students are exposed to socio-environmental challenges that are unique (academic burnout and lack of resources) and perceive these practices is significantly insufficient. Comparing the success of the so-called direct practical tasks with the problem of institutional consistency, this review reveals the necessity of a study that would provide greater priority to the voice of the student in the design of the program.

Perceptions of Environment and Discipline

One last theme in the literature that comes out is the relationship between the perceived cleanliness of the school and the degree of school discipline. Critical baseline is provided by Reyes (2024), who demonstrates that the school cleanliness is statistically average, but students are not satisfied (49.2%). This gap implies that student perception of the surroundings is a stronger motivator of discipline than the physical cleanliness of the campus.

The research given is a continuation of the findings by Reyes (2024); however, the authors conduct a qualitative investigation into the reasons why students feel in a particular way about their environment, as opposed to a quantitative survey of satisfaction. With the assistance of the Social Learning Theory presented by Bandura, this study goes beyond the list-like advantages of cleaning and investigates how social modelling of being disciplined on such occasions as SEISO Day may help close the chasm between what the institution requires and what individuals ought to adopt so that it becomes sustainable.

Conceptual Framework

The present research is based on the postulates of Social Learning Theory and Behaviorism, which underline that learning behavior is observed and acquired through imitation, reinforcement, and repetition of structured experiences. These theoretical visions endorse the fact that structured school-based programs influence the habits and character growth of the students in the long run. The study focuses on the use of SEISO Day, a cleaning program at a school that is based on the Japanese philosophy of 5S (Seiri, Seiton, Seiso, Seiketsu, and Shitsuke). In the 5S model, Seiso (cleanliness) encourages a clean and orderly environment, and Shitsuke (discipline) encourages good practices through constant formation of a habit. By regularly engaging in organized and group cleaning exercises, students are subjected to role models, peer pressure, and supervised control. In line with Social Learning Theory, the students watch the responsible practices of the teachers and peers and emulate them, which they later internalize through reinforcement and repetition. Instead of describing the research quantitatively, i.e., by using terms like independent and dependent variables, the conceptualization of this qualitative research involves the implementation of SEISO Day as the Influencing Factor and habits and discipline among students as the Perceived Outcomes. The framework presupposes that active participation in organized cleaning activities would lead to responsibility, accountability, respect towards common spaces, and self-control.

Moreover, the school environment, per se, is a behavioral regulator. An organized and clean environment supports good behavior and makes students appreciate order and discipline. By continuing to practice SEISO Day, the students are supposed to have a better hygienic routine, self-discipline, and collective responsibility.

Thus, the conceptual framework shows that SEISO Day, as an organized and value-driven school-based initiative based on the 5S philosophy, influences shaping the discipline and cleanliness habits of the students. This model proves that the development of behavior is achieved by means of observation, participation, reinforcement, and environment structuring, and the behavior development results in positive behavioral consequences in higher education.



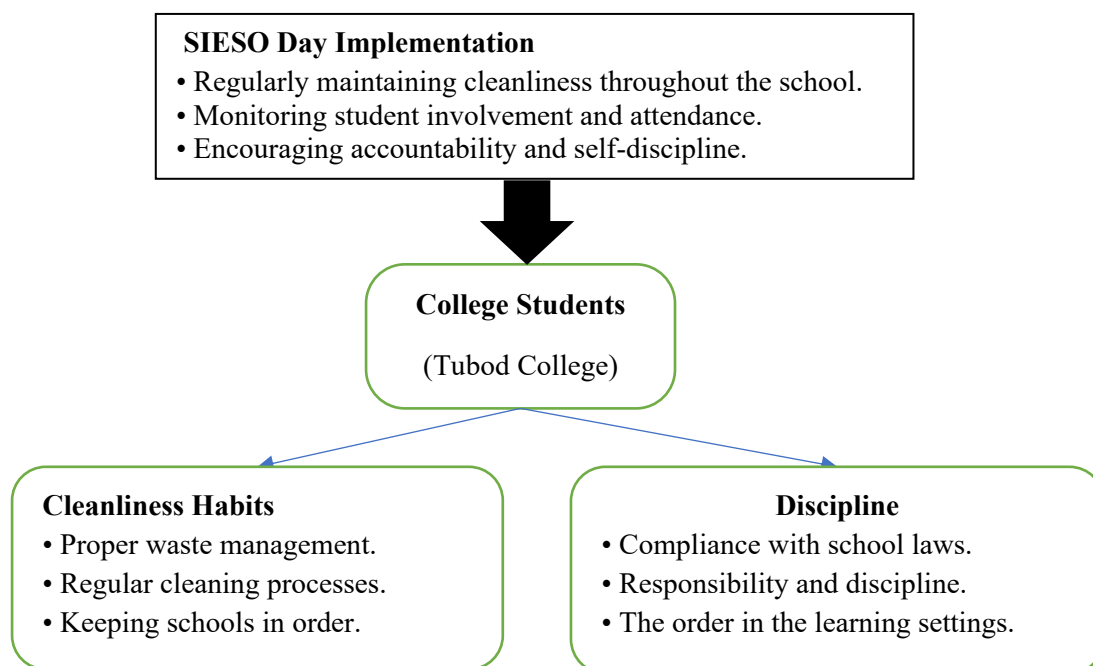


Figure 1. Schematic Diagram of Conceptual Framework

Methodology

This section presents the research design, the locale is given, the selection of the participants, and the systematic approach to the data collection and analysis. This chapter provides the scientific rigor of research by explaining the qualitative framework and ethical protection to examine the student perceptions towards SEISO Day in Tubod College.

Research Design. This study utilizes a descriptive qualitative research design where the researcher addresses the research question in the study by understanding the behavioral perceptions of the students on the SEISO Day initiative. The qualitative approach is specifically appropriate in this research because it enables the researcher to fully engage in the exploration of the lived experiences, attitudes, and beliefs of the participants in a natural environment. In contrast to quantitative methods, which aim to generalize using numerical data, this design puts more emphasis on the voice of the student and therefore identifies the subtlety of how 5S practices affect personal discipline and hygiene.

Research Locale. The fieldwork was done within the Tubod College located in the municipality of Tubod, Lanao del Norte. This location was chosen intentionally as SEISO Day has been formally included in the list of the annual campus-wide discipline- and character-building measures of the institution. The college offers a definite environmental area in which the 5S System Seiri, Seiton, Seiso, Seiketsu, and Shitsuke are currently operationalized, and it is a good closed system to study.

Research Participants. The sampling methods used were purposeful sampling, whereby the sampled participants were selected to be able to give information-based, data-rich cases. The selection criteria were (1) being a current student of Tubod College, (2) taking part in at least two SEISO Day events. This will make sure that the respondents are the first hand, relevant experience to make relevant reflections on the impact of the program. In line with the principles of qualitative research, the final sample size will be referred to, as at the stage of interviews, when no more new themes or information were obtained about the program through additional respondents. This will make sure that the results have depth and credibility without having to generalize by using the statistical method.

Data Collection Procedures. To ensure systematic and reliable data collection, several procedures were adhered to. The formal letter requesting the authorization to implement the study was directed to the Office of the College Dean. Following the approval, the researcher collaborated with the students who were selected to conduct face-to-face interviews. Interviews were conducted in a very relaxed and comfortable environment to encourage open and direct discussion.



Before the actual interview, study objectives, the policy of confidentiality, and the right of the participants to withdraw at any time were explained comprehensively to them before the actual interview. Participating was strictly optional. The interviews were audio taped with the consent of the participants and transcribed verbatim to be analyzed.

Research Instruments. The following were the research instruments used in the study:

1. *Semi-Structured Interview Guide* A semi-structured interview guide was compiled to provide detailed data on the perception of students towards SEISO Day. The guide applied uniformity in questioning but gave the flexibility in letting the participants talk about their cleanliness patterns as well as opinions and perceptions on cleanliness habits and discipline.

2. *Questionnaires* A researcher-made questionnaire used in interviews was complemented by a questionnaire designed by the researcher. Relevant research, literature, and internet resources were used to ensure that the instrument was developed to ensure validity and reliability. It was further categorized into two parts:

(a) Profile of the respondents, which involved year level and frequency of attending SEISO Day events, and

(b) Perception on Conducting SEISO Day, which was used to study the student perception on how the day was conducted and their influence on the action of responsibility, discipline, and hygiene practices.

3. *Audio Recording Devices* Consent was gained to record audio through audio recording devices to make sure that the data was transcribed and analyzed properly. These tapes provided a backup of the notes made by the researcher and gave credibility to the data.

Ethical Considerations. The study was very much in line with the ethics of research. The aim of the study, the involvement of the participants, and their right to quit at any point without penalty were explained to them. Participation was entirely optional. The confidentiality and anonymity were ensured by not using names or any other details that could identify him or her. All the information accumulated was utilized in academic research. During the research, the researcher was honest, unbiased, and respected the rights, privacy, and dignity of every participant.

Data Analysis. The collected data were analyzed through thematic analysis. Transcripts of interviews and questionnaire responses were also analyzed and coded to identify common ideas, trends, and views about SEISO Day. Subsequently, the new themes were classified and cross-examined to determine the influence of SEISO Day on the hygiene habits and disciplinary behavior of the students of Tubod College. With the help of this method, it was easy to understand the visions and experiences of students in a clear and systematic way.

Results

In this part, the findings of the study regarding the views of students with regard to the conduct of the SEISO Day and its impact on their discipline and hygiene behavior at Tubod College are presented and analyzed. According to the research questions, the data will be organized into the following key themes: (1) Students Experiences with the participation in SEISO Day; (2) the effect of SEISO Day on the cleanliness habits of students; (3) the effect of SEISO Day on the discipline and responsibility habits of students; (4) the challenges during the participation in the SEISO Day; and (5) students recommendations about improving and sustaining SEISO Day. The proposed SEISO Day Sustainability Program of Tubod College is informed by these findings.

1. How do students describe their experiences participating in SEISO Day at Tubod College?





Figure 2. Students' Experiences During SEISO Day

Figure 2 presents the primary experiences that the students underwent during their participation in SEISO Day. It has been shown that cooperation and teamwork were the most prevalent among responders.

As the students recounted in cleaning activities, they engaged in active collaboration with peers, the accomplishment of tasks, and mutual support. Based on the figure, SEISO Day provided students with an opportunity to collaborate with each other to meet a common goal, which enhanced group responsibility and cooperative behavior.

2. How do the lived experiences and social interactions of students during SEISO Day facilitate the internalization of cleanliness habits at Tubod College?



Figure 3. Influence of SEISO Day on Students' Cleanliness Habits

Figure 3 presents the effect of SEISO Day on the hygiene behavior of the students. The results indicate that the engagement of the students was the source of positive hygiene-related behaviors. Usually, garbage segregation, litter picking, materials sorting, and proper disposal of garbage are common practices. The chart shows that the awareness of the students on cleanliness increased both outside the classroom and in the open world.

3. How does SEISO Day affect students' discipline and sense of responsibility?

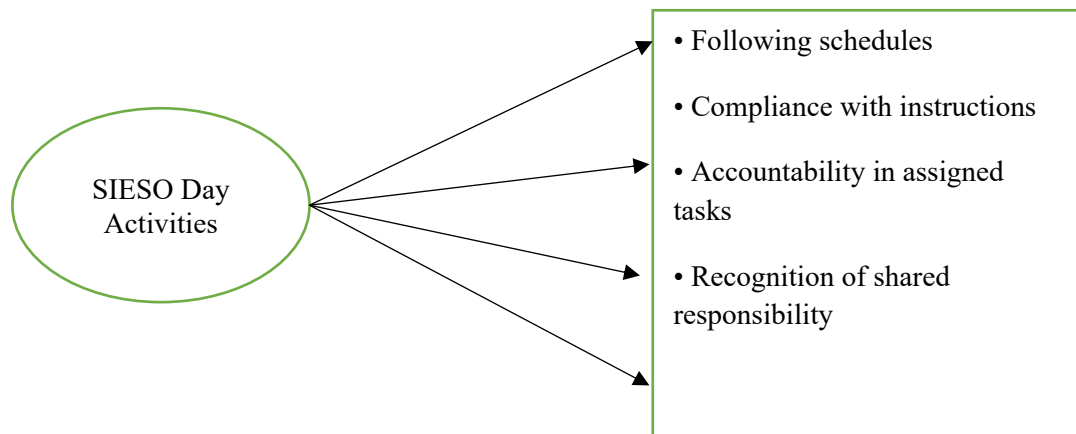


Figure 4. Effect of SEISO Day on Students' Discipline and Responsibility

Figure 4 demonstrates the effects of SEISO Day on the accountability and discipline of the students. The results indicate higher schedule compliance, instruction compliance, and responsibility in tasks.

Through organized cleaning exercises, according to the figure, the pupils will learn to be self-disciplined and build the concept that it is a communal task to keep the environment clean.

4. What challenges do students encounter during SEISO Day activities?

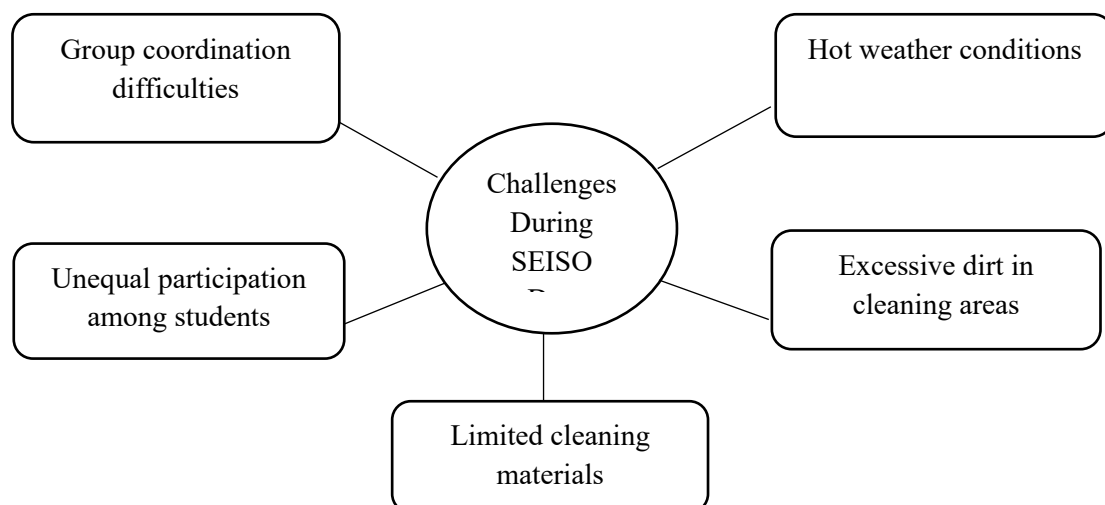


Figure 5. Challenges Encountered by Students During SEISO Day

Figure 5 presents the challenges encountered by students during SEISO Day. The most common challenges mentioned are unfavorable weather, particularly high temperatures, and excess supply of soil.

5. What recommendations can students provide to improve and sustain the SEISO Day program?

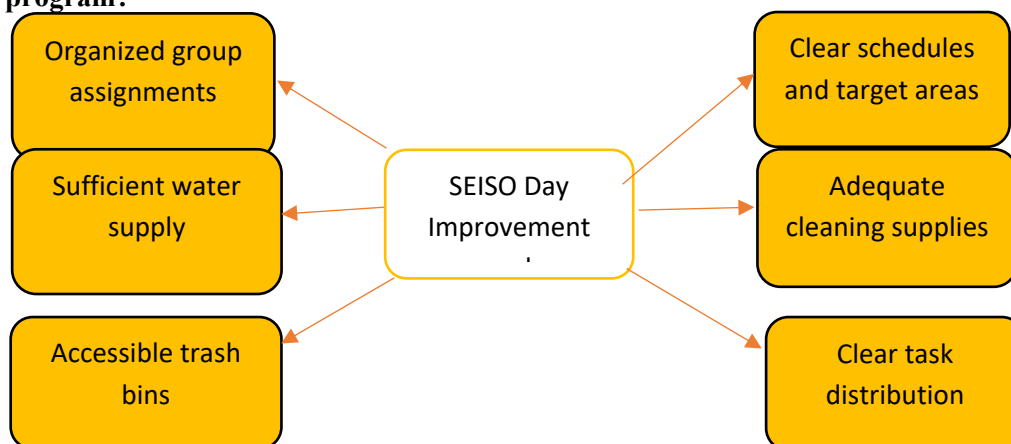


Figure 6. Students' Recommendations for Improving and Sustaining SEISO Day

The proposals by the students to improve and sustain SEISO Day are highlighted in Figure 5. The results indicate that students had more specific areas of emphasis in cleaning, better organization of groups, and the allocation of tasks. To enhance the efficiency and sustainability of the activity, the figure also highlights the need to have sufficient cleaning material, water, trash cans, which are readily available, and clearly laid out schedules.

Discussion

This study investigated the effects of SEISO Day on students' discipline, cleaning practices, and environmental consciousness at Tubod College, based on Albert Bandura's Social Learning Theory. The results validate that organized environmental activities promote behavioral change via social engagement, observation, and repetitive practice. This corroborates Bandura's (1977) claim that behavior is acquired through social modeling and reinforcement, especially in cooperative settings.

The results indicate that SEISO Day fosters collaboration and collective accountability among students, hence enhancing pro-social and pro-environmental behaviors. This corresponds with prior studies demonstrating that interactive environmental education programs markedly affect students' attitudes and behaviors about sustainability. Handayani and Widodo (2024) discovered that student involvement in environmental programs significantly enhances pro-environmental behavior, underscoring the critical role of active participation in fostering environmental responsibility. Wals and van Koppen (2020) asserted that participatory learning environments foster collective responsibility and environmental citizenship.

The findings indicate that organized initiatives like SEISO Day enhance students' hygienic behaviors, particularly in trash segregation and environmental upkeep. The findings align with Duijster et al. (2022), who indicated that systematic sanitation and hygiene treatments markedly enhance cleanliness practices in educational environments. Furthermore, including environmental activities in daily routines reinforces enduring behavioral change, as evidenced by Nurwidodo et al. (2020), who discovered that eco-school programs improve environmental literacy and awareness among children.

Nonetheless, the results suggest that whereas organized activities enhance awareness, maintaining enduring behavioral change poses a difficulty. Tolhane et al. (2025) assert that cleanliness competitions alone do not substantially maintain environmental awareness unless incorporated into



ongoing practices and institutional frameworks. Recent studies indicate that environmental education programs frequently lack long-term effectiveness without sustained institutional support, curriculum integration, and teacher engagement.

The research additionally revealed that SEISO Day plays a crucial role in fostering discipline and accountability in kids. Organized activities with explicit expectations, designated roles, and supervised tasks promote accountability and self-regulation. This aligns with research indicating that organized school-based programs improve discipline by reinforcing behavioral standards through consistent involvement and supervised practice (Wals & van Koppen, 2020; Bustamante-Mora et al., 2025).

Notwithstanding its advantages, some hurdles were recognized, including environmental factors, resource constraints, and coordination difficulties. The findings align with current literature, which indicates that environmental education programs frequently encounter obstacles such as insufficient funding, poor planning, and little institutional backing. Confronting these issues is crucial to guarantee program efficacy and longevity.

Moreover, students' suggestions highlight the necessity of institutionalizing SEISO Day by systematic planning, policy endorsement, and resource distribution. Research corroborates this perspective, indicating that the incorporation of environmental education into educational systems improves sustainability results and student involvement. Ekasari (2024) emphasized that integrating waste management and cleanliness practices into educational institutions enhances environmental awareness and learning environments. Likewise, participatory environmental initiatives have demonstrated the capacity to promote enduring behavioral change when underpinned by institutional frameworks (Prada da Silva et al., 2025).

The results substantiate that SEISO Day is a potent intervention for fostering discipline, cleanliness, and environmental consciousness. Nonetheless, its enduring effectiveness hinges on converting it from an intermittent activity into a systematic and institutionalized program bolstered by policies, resources, and ongoing engagement. These findings enhance the existing research highlighting the significance of experiential and interactive methods in environmental education.

Knowledge Contribution

This study adds to the body of knowledge as it offers empirical findings regarding the effectiveness of structured cleanliness programs in affecting the habits and sustainability consciousness of the students. It is based on behaviorist and social learning theories that can be used to understand that repeated practice and peer modeling can encourage responsible behavior. Moreover, the results can be used to reinforce the institutional policies, improve student-based programs, and foster long-term environmental responsibility.



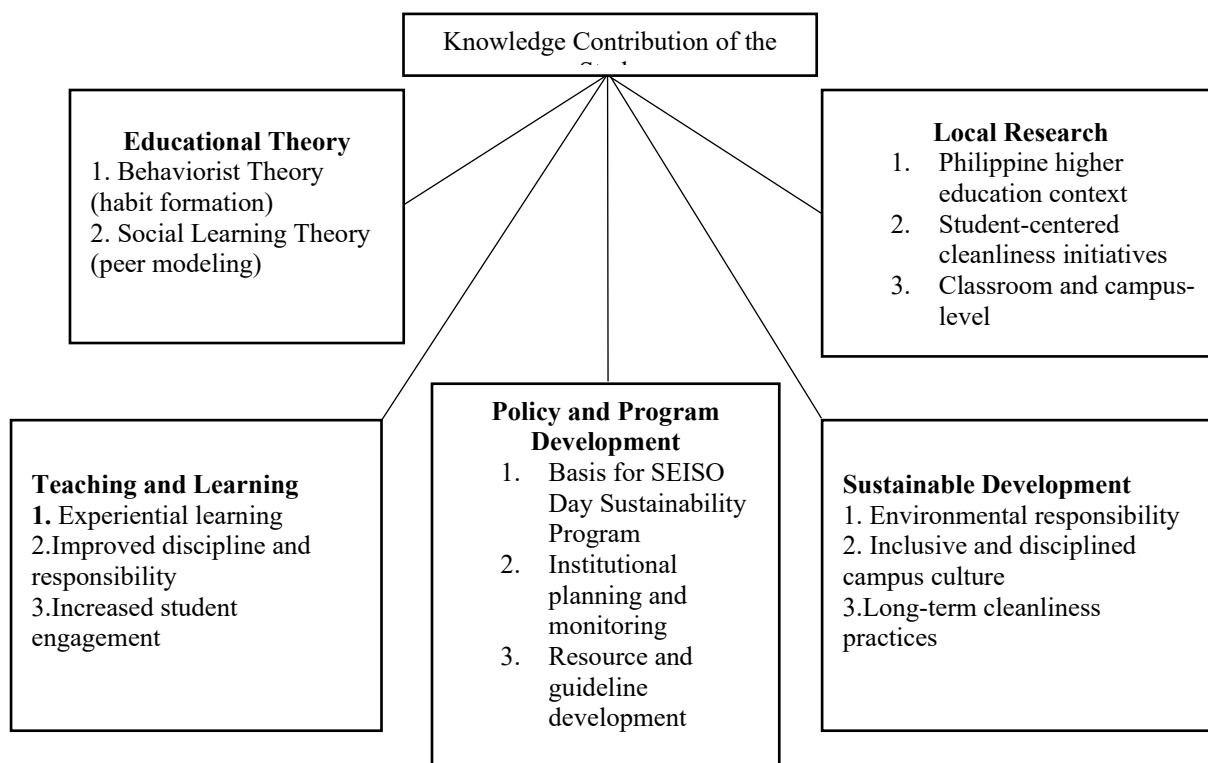


Figure 7 Knowledge Contribution

Recommendation

Based on the findings of the study, the following recommendations are proposed to enhance the effectiveness and sustainability of SEISO Day.

1. For School Administrators: School administrators should institutionalize SEISO Day so that cleaning materials, safety gears, trash bins, and a steady supply of water are always available. There should be clear policies concerning group organization, assignment of tasks, and scheduling. It is suggested that regular monitoring and evaluation mechanisms should be maintained to maintain student response and offer instant solutions to implementation difficulties.

2. For Teachers: Teachers should be proactive in SEISO Day by mentoring students, exemplifying correct hygiene and discipline, and encouraging teamwork. It should focus on clear instructions and fair distribution of the tasks to encourage cooperation and accountability. Observation and encouragement are essential in reinforcing good behavior by the teachers.

3. For Students: Students will be asked to make active contributions to SEISO Day by ensuring that they complete their tasks and keep the classroom and the surrounding area neat and orderly. To enhance collective accountability and responsibility, peer collaboration, support, and constructive feedback should be exercised.

4. For Program Improvement: To make SEISO Day sustainable in the long run, it is suggested to keep on refining it. This involves improved planning, instructions, preparation, and integration of the student feedback. The necessary institutional commitment and adequate funding are necessary to sustain the effectiveness of the program.

5. For Future Researchers: Future research is recommended to compare the 5S-based institutions and traditional schools to see their difference in campus culture and discipline. Longitudinal research



can be able to investigate the maintenance or degradation of the cleanliness practices once the students leave school. More studies can also be done to determine socio-economic and cultural beliefs towards manual labor and community participation as determinants of student involvement in cleanliness programs.

Conclusion

This paper explored the perceptions of students regarding SEISO Day and how it has contributed to the improvement of cleanliness practices, discipline, and sustainability at Tubod College. The results showed that SEISO Day is a good intervention in schools because it encourages responsibility, teamwork, and environmental awareness based on shared and daily cleaning operations. Under the Social Learning Theory and the 5S philosophy, the results of the study showed that positive behaviors can be acquired when the students watch their peers and teachers model the discipline and accountability.

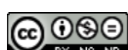
Although the study was effective, other obstacles that existed included logistical and environmental issues like a lack of cleaning materials, hot weather, water shortage, and organizational issues. But instead of deterring the involvement, such challenges only demonstrated the resilience and problem-solving skills of students in the presence of institutional support and clear structure.

In general, SEISO Day was viewed as not only something that should be done, but an important exercise that helps to promote positive behavior and sustainability of the campus when it is adequately planned and supported.

Above all, the findings also expressed substantial empirical reasoning for developing a SEISO Day Sustainability Program, to ensure that the initiative goes beyond short-term compliance to an institutional practice that is long-term.

References

- Bandura, A. (1977). *Social learning theory*. Prentice Hall.
https://books.google.com/books/about/Social_Learning_Theory.html?id=HFokAQAAMAAJ
- Bustamante-Mora, A., Cárdenas-Rodríguez, M., & Torres-Castillo, A. (2025). Environmental conditions and their impact on student performance. *Sustainability*, 17(3), Article 1071.
<https://doi.org/10.3390/su17031071>
- Duijster, D., Monse, B., Marquez, M., Pakes, U., Stauf, N., & Benzian, H. (2022). Impact of packaged interventions for operation and maintenance on usability and cleanliness of toilets in public schools in the Philippines: A cluster-randomized controlled trial. *BMC Public Health*, 22(1), Article 1608. <https://doi.org/10.1186/s12889-022-13936-9>
- Ekasari, T., & Sya'diah, S. D. (2024). Future-ready learning through clean practices and green behavior: Linking education, waste management, and health goals. *QCU The Star: Journal of Science, Engineering, and Information Technology*, 2(1).
<https://www.ejournals.ph/article.php?id=27163>
- Falhah, A., & Himmawan, D. (2025). Community service with activities to instill environmental awareness and maintain school cleanliness. *ENGAGEMENT: Jurnal Pengabdian Masyarakat*, 4(1), 70–76. <https://engagement.pdfaii.org/index.php/i/article/view/139>
- Gatarin, R. J. (2020). *Cleanliness practices and student participation in school-based environmental programs*. *International Journal of Educational Management and Development Studies*, 1(2), 45–56.
- Handayani, J. A., & Widodo, A. (2024). The impact of student participation in environmental education programs on pro-environmental behavior. *Jurnal Cakrawala Pendas*, 10(2), 215–223. <https://doi.org/10.31949/jcp.v10i2.8475>
- Nurwidodo, N., Amin, M., Ibrohim, I., & Sueb, S. (2020). The role of the eco-school program (Adiwiyata) towards environmental literacy of high school students. *European Journal of Educational Research*, 9(3), 1089–1103. <https://doi.org/10.12973/eu-jer.9.3.1089>





- Prada da Silva, D. F., da Silva, J. B., Barbosa, M. O., Ribeiro, N., & Menezes, I. (2025). Promoting environmental citizenship using participatory school-based community profiling on water (mis)uses. *ECNU Review of Education*, 8(1), 79–111. <https://doi.org/10.1177/20965311241264829>
- Reyes, M. F., Escobal, J., Empron, A., Crispolon, A., Toca, J. M., Sepria, R., & Fuguso, K. (2024). Perceptions and impact of students' satisfaction on cleanliness in school environments. *International Journal of Multidisciplinary Research and Growth Evaluation*, 5(3), 877–885. https://www.allmultidisciplinaryjournal.com/uploads/archives/20240717145724_C-24-96.1.pdf
- Tolhani, M., Sutisno, A. N., & Rahayu, F. S. (2025). Evaluating the impact of classroom cleanliness competitions on primary students' environmental awareness. *Dinamika Jurnal Ilmiah Pendidikan Dasar*, 17(2), 98–108. <https://doi.org/10.30595/dinamika.v17i2.27198>
- Ulum, B., Nurrohman, Ambarita, E., & Gaos, Y. S. (2017). Energy and exergy analysis of Mount Salak geothermal power plant unit 1–2–3. *International Journal of Technology*, 8(7), 1217–1228. <https://doi.org/10.14716/ijtech.v8i7.740>
- Wals, A. E. J., & van Koppen, C. S. A. (2020). Analysing the state of student participation in two Eco-Schools using Engeström's second-generation activity systems model. *Environmental Education Research*, 26(1), 24–42. <https://doi.org/10.1080/13504622.2020.1779186>

