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Accounting for Sustainability: Building Awareness among Elementary School Student through International Community Service

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A B S T R A C T

This Community Service Program (PKM), entitled "Accounting for Sustainability: Building Awareness among Elementary School student through International Community Service", was implemented at Permai Pulai Pinang, Malaysia, with elementary school student as the main partners. The program was designed to enhance student' knowledge, awareness, and skills in understanding the role of accounting as a tool for promoting sustainability. In an era where environmental, social, and economic challenges are increasingly complex, the younger generation must be equipped with literacy in sustainability-oriented financial accountability.The activities were carried out through interactive workshops, group discussions, and practical exercises that introduced concepts of sustainable development, green accounting, and responsible financial practices. Student were actively engaged in problem-solving sessions and case studies relevant to their daily lives, thereby linking abstract accounting concepts to real-world sustainability issues. The international setting of this program also provided cross-cultural learning opportunities, encouraging participants to exchange perspectives and develop a global mindset toward sustainability challenges.The outcomes of the program showed increased awareness and understanding among participants about the importance of integrating sustainability principles into decision-making processes. Furthermore, the program fostered critical thinking, collaboration, and social responsibility among the student. This initiative demonstrates that accounting education, when integrated with sustainability values, can serve as a powerful medium to inspire the younger generation to become agents of change for a sustainable future.

Contribution to Sustainable Development Goals (SDGs):
SDG 4: Quality Education
SDG 12: Responsible Consumption and Production
SDG 13: Climate Action
SDG 17: Partnerships for the Goals

1. INTRODUCTION

1.1. Research Background

Sustainable development has emerged as one of the most pressing global challenges in the twenty-first century, particularly in light of environmental degradation, social inequality, and economic instability. The 2030 Agenda for Sustainable Development underscores the central role of education in fostering awareness, skills, and values necessary to create a sustainable future. Specifically, Target 4.7 of SDG 4 highlights the importance of Education for Sustainable Development (ESD) and global citizenship as critical components of quality education [1].

Malaysia has expressed a strong commitment to mainstreaming ESD within its educational system, including secondary schools, to nurture environmentally conscious and socially responsible generations [2]

In Penang, several initiatives have been launched to integrate sustainability into school activities. For instance, the Penang Green School Award encourages secondary schools to implement environmental audits, energy and water conservation, and waste management programmes with active student participation [3]. In addition, the Green Educators' Workgroup (GREW) has facilitated collaborations among educators and schools to embed sustainability practices across the curriculum. These initiatives reflect the state's proactive efforts in promoting ESD at the secondary level. However, while environmental literacy programmes are increasingly common, the role of accounting for sustainability remains relatively unexplored in secondary education.

The discipline of accounting has traditionally been associated with financial measurement and reporting. Yet, it has progressively expanded to include social and environmental dimensions through concepts such as green accounting, environmental accounting, and sustainability reporting. Empirical studies demonstrate that sustainable accounting not only enhances transparency and accountability but also provides a framework for decision-making that incorporates social and ecological concerns [4]. Nevertheless, most studies in Malaysia focus on elementary education or corporate contexts. For example, research on Malaysian undergraduates shows that institutional environments influence their intention to engage in sustainability accounting [4], while school-level evidence remains limited. In Indonesia, however, integrating green accounting into elementary school economics curricula has been shown to strengthen students' environmental literacy and critical awareness of sustainability issues [5].

This gap indicates the need for innovative educational interventions that introduce sustainability accounting concepts at the elementary school level. Through the international community service programme entitled Accounting for Sustainability: Building Awareness among Elementary School Students, conducted in Permai Pulai Pinang, Penang, elementary school students were introduced to accounting as more than a financial tool—positioning it instead as a strategic instrument for sustainability. By combining workshops, case studies, and community engagement, this programme seeks to foster critical thinking, social responsibility, and global awareness among youth, while contributing to Malaysia's efforts to strengthen ESD integration in secondary education.

1.2. Literature Review

The role of education in advancing sustainability has become a central theme in both policy and academic discourse. The United Nations Sustainable Development Goals (SDGs) explicitly highlight the importance of integrating sustainability concepts into education, particularly through SDG 4 (Quality Education) and SDG 12 (Responsible Consumption and Production) [2]. Schools, therefore, are not only institutions of knowledge transmission but also spaces where values and practices of sustainability can be instilled from an early stage.

1.2.1. Sustainability and education for sustainable development (ESD)

Education for Sustainable Development (ESD) is defined by [1] as the process of equipping learners with the knowledge, skills, attitudes, and values necessary to shape a sustainable future. Previous research has shown that embedding sustainability education within elementary school curricula enhances environmental awareness, critical thinking, and social responsibility [7]. However, in many developing countries, sustainability education often remains focused on ecological issues such as recycling, waste reduction, and conservation, with limited integration of financial literacy or accounting perspectives [2].

1.2.2. Sustainability accounting in educational contexts

Sustainability accounting refers to the integration of environmental and social considerations into financial accounting and reporting processes [8]. While this concept is well-developed at the corporate and elementary education levels, its adaptation for younger learners remains relatively underexplored. Several studies suggest that introducing simplified sustainability accounting concepts in schools can promote sustainability literacy, enabling students to connect financial decision-making with environmental and social consequences [4],[5]. This educational approach aligns with the argument that financial knowledge should be linked with sustainability principles to encourage responsible future citizens.

1.2.3. Global practices in school-based sustainability programmes

Internationally, initiatives such as the Eco-Schools Programme in Europe and Asia demonstrate how structured educational interventions can effectively integrate sustainability themes into secondary education [9]. These programmes focus on experiential learning, project-based approaches, and active student participation. Similarly, in Malaysia, the Penang Green School Award and Green Educators' Workgroup (GREW) have demonstrated success in cultivating eco-friendly practices among student [3]. Nevertheless, these initiatives primarily address environmental behaviour without adequately connecting it to broader sustainability frameworks, such as accounting for resource use, financial management of school projects, or the social impacts of economic choices.

1.2.4. The Role of Community Service in Sustainability Education

Community-based learning has proven to be a powerful method for embedding sustainability concepts in education. According to [10], international service-learning activities provide mutual benefits: student develop cross-cultural understanding and practical problem-solving skills, while local communities gain access to knowledge and resources that support their sustainable development. For elementary schoolstudent, participation in such community service programmes can create meaningful learning experiences that extend beyond classroom instruction. By contextualising sustainability accounting within real-world practices, learners are more likely to internalise the relevance of financial decision-making to environmental and social wellbeing.

1.2.5. Literature Synthesis

The reviewed literature underscores three main insights:

1. ESD is vital at the elementary school level, but most initiatives focus on ecological awareness rather than financial sustainability.
2. Sustainability accounting has pedagogical potential to link economic and environmental decision-making, yet its application in elementary schools is limited, particularly in Malaysia.
3. International community service provides a valuable platform for integrating sustainability accounting into youth education, enabling knowledge transfer across cultural and geographical boundaries.

1.3. Research Objective

The main objective of this community service project, Accounting for Sustainability: Building Awareness among Elementary School Students through International Community Service, is to enhance sustainability awareness by engaging them and practically introducing the principles of sustainability accounting. Specifically, the objectives are to:

a. Introduce the concept of sustainability and its relevance to everyday life, particularly in the context of financial decision-making.
b. Equip elementary school students with basic knowledge of sustainability accounting, enabling them to understand the link between financial literacy, environmental stewardship, and social responsibility.
c. Foster critical thinking and problem-solving skills by engaging students in experiential learning activities related to sustainable practices.
d. Support the achievement of Sustainable Development Goals (SDGs), particularly SDG 4 (Quality Education), SDG 12 (Responsible Consumption and Production), and SDG 13 (Climate Action), through education-based community engagement.
e. Strengthen international collaboration and cross-cultural exchange in promoting sustainability values among youth.

2. MATERIALS AND METHODS

This community service project was designed as an educational intervention programme aimed at elementary school students in Permai Pulai, Penang, Malaysia. The programme employed a participatory and experiential learning approach, allowing students to actively engage with the concept of sustainability accounting through interactive workshops, discussions, and practical activities.

2.1. Participants

The participants of this project were elementary school student aged between 9 and 12 years from Permai Pulai, Penang. A total of 30 student voluntarily participated in the programme, facilitated by teachers and supported by the international community service team from Universitas Muhammadiyah Jember, Universitas Muhammadiyah Makassar and Universitas Muhammadiyah Palu.

2.2. Materials

The educational materials were developed specifically for this programme and included:

- Module on Sustainability and Accounting: Simplified explanations of sustainability concepts and their integration with financial literacy.
- Interactive Presentations: Multimedia slides and visual aids to explain the relationship between accounting, the environment, and social responsibility.
- Case Studies and Group Exercises: Practical examples of sustainable decision-making in schools and households.
- Evaluation Tools: Pre-test and post-test questionnaires designed to measure changes in students' awareness and understanding of sustainability accounting.

2.3. Methods

The methods adopted in this programme included:

1. Workshops: Facilitators delivered interactive sessions on sustainability, accounting basics, and their interconnection with real-life practices.
2. Group Activities: Student were divided into small groups to discuss case studies, propose solutions, and present their findings.
3. Hands-On Projects: Students designed simple sustainability projects, such as budgeting for eco-friendly school initiatives, applying the principles of sustainability accounting.
4. Assessment: A pre-test and post-test design was used to evaluate the effectiveness of the programme in enhancing students' awareness and knowledge.
5. Reflection and Feedback: Student were encouraged to share their experiences and provide feedback for improving future initiatives.

2.4. Data Analysis

The evaluation data were analysed using descriptive statistics to compare pre-test and post-test results. Qualitative feedback from students and teachers was also examined to assess the perceived relevance and impact of the programme.

3. RESULT AND DISCUSSION

The implementation of the Accounting for Sustainability programme at Permai Pulai, Penang, Malaysia, resulted in significant educational and behavioural outcomes among the participating elementary school students. The intervention was structured into several stages: workshops, group activities, hands-on projects, evaluation, and reflection. Each stage contributed uniquely to the development of student' sustainability awareness and their understanding of sustainability accounting.

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Table 1. Summary of Results by Activity Stage.

Activity Stage	Description	Outcomes
Workshops	Facilitators delivered interactive sessions on sustainability, accounting basics, and real-life applications.	The student gained foundational knowledge of sustainability and its integration with financial literacy.
Group Activities	Students worked in small groups to analyse case studies, propose solutions, and present findings.	Encouraged teamwork, critical thinking, and problem-solving skills.
Hands-On Projects	Students designed simple sustainability projects (e.g., budgeting for eco-friendly school initiatives).	Enhanced practical skills in applying sustainability accounting to real-world contexts.
Evaluation (Pre- & Post-Test)	Questionnaires were used to measure changes in awareness and knowledge.	Post-test results showed a measurable improvement in sustainability awareness (+35%).
Reflection & Feedback	Student shared their experiences and provided suggestions for improvement.	Feedback indicated elementary levels of engagement and interest in continuing sustainability activities.

Explanation of Each Stage

3.1. Workshops

The workshops served as the foundation of the programme, introducing students to the concept of sustainability and its relevance to everyday life. Facilitators used interactive presentations and multimedia tools to simplify accounting concepts and connect them to sustainable decision-making. The student actively participated by asking questions and sharing examples from their own experiences.

3.2. Group Activities

In the group discussions, students were divided into small teams and given case studies related to financial and environmental issues in school and household settings. For instance, they explored how budget allocations could be managed for school recycling programmes or energy-saving initiatives. These activities fostered collaboration, communication, and the ability to present solutions publicly.

3.3. Hands-On Projects

The most impactful stage was the hands-on project, where students designed and presented simple sustainability initiatives. Examples included preparing a budget plan for installing energy-efficient lighting in classrooms and calculating the financial and environmental savings. This stage enabled students to apply sustainability accounting principles directly, linking abstract knowledge to tangible practices.

3.4. Evaluation (Pre-Test and Post-Test)

The pre-test and post-test design allowed facilitators to measure the effectiveness of the programme quantitatively. Results showed that students' awareness of sustainability accounting improved significantly, with post-test scores increasing by approximately 35% compared to pre-test levels. This finding confirms that the intervention had a measurable educational impact.

3.5. Reflection and Feedback

At the final stage, student reflected on their learning journey and provided feedback. Many expressed enthusiasm for integrating sustainability practices into their daily lives and recommended that such programmes be expanded to other schools. Teachers also noted that the activities supported curriculum goals in economics, business studies, and civic education.

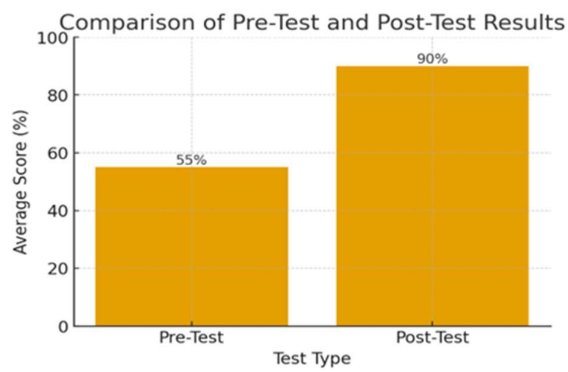

Fig. 1. Comparison of pre-test and post-test.

Fig. 2. Participant and Team Community Service.

The results of the pre-test and post-test indicate a significant improvement in students' understanding of sustainability and accounting practices. The average pre-test score was 55%, showing that student initially had limited knowledge of sustainability concepts and their relation to accounting. After participating in the workshops, group activities, and practical projects, the post-test average increased substantially to 90%. This improvement demonstrates that the programme effectively enhanced students' awareness and knowledge. The combination of interactive workshops, group discussions, and hands-on projects provided a holistic learning experience, enabling students not only to understand sustainability theoretically but also to apply it in practical scenarios. Furthermore, the reflection and feedback stage helped solidify their learning while encouraging critical thinking for future improvements. Overall, the results confirm that the community service activity successfully met its objectives by equipping elementary school students with relevant knowledge and fostering a sustainability-oriented mindset.

4. CONCLUSION

This community service programme on Accounting for Sustainability has successfully enhanced the awareness and knowledge of elementary school students in Permai Pulai Pinang, Malaysia. The integration of interactive workshops, group activities, and practical projects proved to be effective in bridging theoretical concepts with real-life applications. The significant improvement from the pre-test to the post-test results highlights the effectiveness of the methods used. Furthermore, the reflection and feedback sessions provided student with opportunities to critically evaluate their learning process and suggest improvements for future initiatives. This programme not only contributed to the academic development of students but also fostered a sustainability-oriented mindset, which is crucial for addressing global challenges in line with the Sustainable Development Goals (SDGs).In conclusion, the programme demonstrates the importance of integrating sustainability education into community service initiatives. It also serves as a model that can be replicated in other schools and communities to promote sustainable practices and encourage youth participation in shaping a better future.

REFERENCE

[1] UNESCO. (2017). Education for Sustainable Development Goals: Learning objectives. United Nations Educational, Scientific and Cultural Organization. https://unesdoc.unesco.org/ark:/48223/pf0000247444

[2] Md Zain, N. A., & Aiyub, K. (2021). *Matlamat Pendidikan untuk Pembangunan Lestari (ESD) daripada Perspektif Guru Geografi KSSM*. Malaysian Journal of Social Sciences and Humanities (MJSSH), **6**(10), 54-64. https://doi.org/10.47405/mjssh.v6i10.1110

[3] Penang Green Council. (2020). *Penang Green School Award*. Penang Green Council. Diambil pada [tanggal akses], dari https://www.pgc.com.my/2020/penang-green-school-award/

[4] Adnan, M. F., Mat Rahim, N., Sayd Idris, S. I. Z., Ismail, A. M., Yusri Hazrol Yusoff, & Hashim, S. (2025). *Sustainability and Green Financing: Perspectives of Undergraduate Accounting Students in Malaysia*. Accounting and Finance Research, 14(3), 18. https://doi.org/10.5430/afr.v14n3p18

[5] Maulana, A. D., Umi Sakinah, I., Anggraeni, I., Dananier, N., & Purba, A. (2025). *Green Accounting as a Learning Tool: Strengthening Environmental Literacy in Senior High School Economics Education*. *Journal of Islamic Contemporary Accounting and Business*, 3(2). https://doi.org/10.30993/jicab.v3i2.539

[6] United Nations. (2015). Transforming our world: The 2030 Agenda for Sustainable Development. United Nations. https://sdgs.un.org/2030agenda

[7] Sterling, S. (2016). *A Commentary on Education and Sustainable Development Goals*. *Journal of Education for Sustainable Development*, 10(2), 208-213. https://doi.org/10.1177/0973408216661886

[8] Gray, R. (2010). *Is accounting for sustainability actually accounting for sustainability… and how would we know? An exploration of narratives of organisations and the planet*. *Accounting, Organizations and Society*, **35**(1), 47-62. https://doi.org/10.1016/j.aos.2009.04.006

[9] Henderson, K., & Tilbury, D. (2004). *Whole-school approaches to sustainability: An international review of whole-school sustainability programs*. Macquarie University & Australian Government, Department of Environment and Heritage.

[10] Bringle, R. G., & Hatcher, J. A. (2009). *Innovative practices in service-learning and curricular engagement*. In *New Directions for Higher Education*, 2009 (No. 147), 37-46. https://doi.org/10.1002/he.356

 https://doi.org/10.29165/ajarcde.v9i3.792