

# Bridging the Gap: Advancing Teachers' Awareness of the Sustainable Development Goals (SDGs) and Education for Sustainable Development (ESD) in Liberia

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## Abstract

### ➤ *Background:*

The United Nations Sustainable Development Goals (SDGs) and Education for Sustainable Development (ESD) provides a global framework for fostering knowledge, skills, values, and actions that promote sustainability. Teachers play a pivotal role in implementing these frameworks. However, awareness and integration of SDGs and ESD among Liberian teachers remain unexplored.

### ➤ *Aim*

This study assessed levels of awareness, integration, perceived barriers, and support needs related to the SDGs and ESD among teachers in Liberia.

### ➤ *Methods*

A cross-sectional online survey was conducted among 102 teachers in Liberia from September 22 to November 1, 2025. The structured questionnaire included demographics, awareness of SDGs and ESD, integration practices, barriers, and training needs. Descriptive statistics were used for analysis.

### ➤ *Results*

Most respondents had heard of the SDGs, but fewer were familiar with ESD. Confidence in explaining ESD concepts was low. While some teachers integrated SDG-related themes into lessons, barriers such as lack of training, teaching resources/materials, support from school leadership, and curriculum overload were commonly reported. Teachers overwhelmingly expressed willingness to receive training and identified workshops/continuous professional development, teaching materials, practical teaching guides/lesson plans, in-school coaching/mentoring, and peer collaboration as essential supports.

### ➤ *Limitations*

The online method excluded teachers without internet access, especially in rural areas. Self-reports may be subject to bias.

### ➤ *Conclusions*

Liberian teachers demonstrate an emerging awareness of the SDGs but a limited understanding of ESD. Systematic professional development and institutional support are critical to bridging the gap between awareness and practice.

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## I. INTRODUCTION

According to UN Secretary-General Ban Ki-moon (2007), “*We hold the future in our hands. Together, we must ensure that our grandchildren will not ask why we failed to do the right thing.*” These words from former United Nations Secretary-General Ban Ki-moon capture the essence of the global commitment that inspired the Sustainable Development Goals (SDGs). Adopted in September 2015 by all 193 United Nations (UN) member states, the SDGs, also referred to as the Global Goals, form the centerpiece of the 2030 Agenda for Sustainable Development. They represent a universal framework designed to eradicate poverty, protect the planet, and promote peace, prosperity, and partnership for all people by 2030 (United Nations, 2015). These objectives/goals, in order from SDG-1 to SDG-17, include: No Poverty, Zero Hunger, Good Health and Well-Being, Quality Education, Gender Equality, Clean Water, and Sanitation, Affordable and Clean Energy, Decent Work and Economic Growth, Industry, Innovation, and Infrastructure, Reduced Inequalities, Sustainable Cities and Communities, Responsible Consumption and Production, Climate Action, Life Below Water, Life on Land, Peace, Justice, and Strong Institutions and Partnerships for The Goals.

Building upon the progress and limitations of the Millennium Development Goals (MDGs), the SDGs emerged from the 2012 United Nations Conference on Sustainable Development (Rio+20). They were developed through an inclusive global consultation process involving governments, civil society, and millions of citizens. The 17 goals are interconnected and address pressing global challenges, including inequality, quality education, health, gender equity, economic growth, climate change, and environmental protection. Unlike their predecessors, the SDGs apply universally, acknowledging that sustainable development is a shared responsibility of both developed and developing nations.

The SDGs are grounded in the principles of universality, inclusivity, and interdependence, recognizing that progress in one goal area contributes to advancement in others. Achieving them requires coordinated action among governments, the private sector, civil society, and individuals.

As a global blueprint for sustainable transformation, the SDGs aim to create a peaceful, just, and equitable world for present and future generations.

Education is a fundamental right and a powerful tool for achieving the Sustainable Development Goals (SDGs). SDG 4 on Quality Education is widely recognized as a

“foundational” goal because progress in education catalyzes achievements across other goals. In particular, target 4.7 explicitly underscores the transformative power of education by calling on all nations to ensure that learners acquire the knowledge, skills, values, and attitudes necessary to promote sustainable development. This encompasses not only awareness of environmental protection but also respect for human rights, promotion of gender equality, fostering global citizenship, and appreciation of cultural diversity (United Nations, 2015; UNESCO, 2020).

The world cannot escape poverty without education. If all students in low-income countries were to leave school, 171 million people could be lifted out of poverty (UNESCO, 2023). Hunger can be eradicated and nutrition improved if all mothers in low-income countries have secondary education; 12 million children will be saved from stunting (UNESCO, 2013). If all girls have secondary education, there will be 64% fewer early marriages and 59% fewer early pregnancies (UNESCO, 2013). These are illustrations and empirical facts that juxtapose the significance of education, as outlined in SDG-4, quality education for all, in achieving the SDGs.

## II. EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

A better world for everyone today and tomorrow means making choices that promote equality, protect the environment, and ensure prosperity for future generations. Education is the answer and holds the key. ESD is a framework for learning how to live sustainably and to preserve the planet for future generations. ESD enables one to live what they learn and learn while they live. Achieving this vision demands more than expanding school access or raising literacy rates. ESD is a framework for learning how to live sustainably and to preserve the planet for future generations. It requires a reorientation of education systems toward Education for Sustainable Development (ESD). UNESCO defines education for Sustainable Development (ESD) as an educational approach that empowers learners to make informed decisions and responsible actions for environmental integrity, economic viability, and social justice for present and future generations (UNESCO, 2018). It plays a critical role in achieving the Sustainable Development Goals (SDGs) by integrating sustainability issues—such as climate change, biodiversity, peace, and social equity—into teaching and learning. ESD promotes cognitive, socio-emotional, and behavioral competencies essential for building a sustainable and equitable world.

It equips learners with competencies for critical and systemic thinking, problem-solving, future-oriented

decision-making, and collective action (UNESCO, 2017). Rather than rote memorization or exam-driven instruction, ESD emphasizes participatory learning, community engagement, and contextual problem-solving.

➤ *Global Policy Frameworks and Implementation*

The United Nations Decade of Education for Sustainable Development (2005–2014) encouraged countries to embed ESD principles into formal education systems (UNESCO, 2018). Nearly all reporting countries have incorporated these principles into their education policies and curricula, emphasizing core themes such as cultural diversity, peace, human rights, and environmental sustainability. However, scholars note that the vague conceptualization of ESD has led to fragmented and inconsistent policy implementation (Sterling, 2004; Hume & Berry, 2015). Policies often exist in isolation from educational planning, budgeting, and teacher training, resulting in limited local impact (Benavot, 2014). As a result, ESD integration has sometimes been reduced to superficial awareness initiatives rather than transformative educational reforms.

➤ *Curriculum Integration and Pedagogical Transformation*

Curriculum reorientation is a key pillar of ESD implementation (UNESCO, 2017). Analyses of national curricula reveal increasing inclusion of sustainability concepts, though often under different labels (Amadio, 2013). The Global Education Monitoring Report (2016) found that more than half of the surveyed countries integrated sustainability topics into primary and secondary education. Context-specific applications of ESD, such as multicultural education in Australia and peace education in Sri Lanka, demonstrate how ESD can align with national priorities (Benavot, 2014).

Beyond curricular content, ESD emphasizes innovative, student-centered pedagogies that promote creativity, problem-solving, and critical thinking. However, the interdisciplinary nature of ESD presents challenges in assessment and curricular coherence (Amadio, 2013). The transformative potential of ESD lies not merely in teaching sustainability topics, but in fostering pedagogical approaches that enable learners to act on sustainability principles

However, despite widespread policy adoption, challenges persist. Scholars such as Sterling (2004) and Benavot (2014) note that vague definitions and fragmented policy approaches have often hindered effective implementation. In many contexts, ESD remains detached from core education planning, teacher training, and resource allocation, resulting in limited integration at the local level (Hume & Berry, 2015). This disconnect underscores the need for more systemic and context-

responsive approaches that link global sustainability goals to local classroom realities.

➤ *Teacher Capacity and Professional Development*

Teacher quality remains one of the strongest predictors of student achievement (Hattie, 2009; Darling-Hammond, 1999). Therefore, integrating ESD into teacher education is essential. Despite progress, global data indicate that as of 2013, only 8% of countries had incorporated ESD into their teacher training programs (GEMR, 2016). This limited inclusion hampers teachers' ability to deliver ESD effectively (Amadio, 2013; Bourn, Hunt, & Bamber, 2017). As UNESCO (2020) stresses in its *ESD for 2030 Roadmap*, teachers are central to this agenda: they are the mediators who interpret policies, design classroom practices, and model sustainable values for students. Without teachers who are aware, confident, and supported, the lofty ambitions of SDG 4.7 risk remaining abstract global commitments with little traction at the classroom level.

Practical teacher training must emphasize experiential and inquiry-based pedagogies. Research shows that active learning strategies, such as debates, group projects, and community service, produce stronger transformative outcomes than content instruction alone (Laurie, Nonoyama-Tarumi, McKeown, & Hopkins, 2016). These methods foster collaboration, global awareness, and civic engagement, aligning classroom experiences with the broader goals of sustainable development.

➤ *Educational and Social Impacts of ESD*

Empirical evidence strongly supports the positive effects of ESD on learning outcomes. A Stanford University's review of over 120 studies found that environmental and sustainability education enhances academic performance, critical thinking, and problem-solving skills, with 90% of studies reported improved student outcomes (Aikens, 2020). Similarly, cross-country studies show that ESD programs enhance communication, creativity, and employability, preparing students to meet future global challenges (Laurie et al., 2016).

Beyond academic outcomes, ESD improves well-being and social cohesion. Green learning environments contribute to reduced stress and enhanced resilience among students (Chawla, Keena, Pevec, & Stanley, 2014). Moreover, ESD encourages community engagement and peaceful coexistence through intercultural understanding and conflict resolution skills (UNESCO, 2014). By cultivating empathy, leadership, and civic responsibility, ESD nurtures active global citizens equipped to contribute meaningfully to sustainable societies.

➤ *Challenges and the Path Forward*

Despite international advocacy, gaps remain between ESD policy formulation and classroom implementation. Insufficient teacher training, resource constraints, and

unclear competency frameworks continue to limit progress (Bourn et al., 2017). UNESCO's *ESD for 2030* framework and the *Greening Education Partnership* seek to bridge this gap by promoting whole-institution approaches that "green" every dimension of education, from curriculum to infrastructure. The success of ESD ultimately depends on the integration of coherent policies, institutional leadership, and local ownership. Sustainable education transformation requires collaboration among educators, policymakers, and communities to translate global aspirations into contextually relevant practices.

➤ *ESD Competencies for Students*

As discussed earlier, according to UNESCO, "Education for Sustainable Development (ESD) empowers people to change the way they think and work towards a sustainable future". UNESCO has highlighted several key competencies and learning objectives associated with teaching ESD. These competencies include System, Anticipatory, Normative, Strategic, Collaborative, Critical Thinking, Integrative Problem-Solving, and Self-Awareness.

➤ *ESD Pedagogy*

Pedagogies associated with ESD stimulate students to ask questions, analyze, think critically, and make decisions. Such pedagogies transition from teacher-centered to student-centered lessons and from rote memorization to participatory learning. The different key pedagogies that encompass ESD can be summarized as follows:

- *Place-based Learning*
- *Experiential Learning (learning by doing)*



Fig 1 Experiential Learning is Based on Kolb's Theory and Encompasses a 4-Step Learning Cycle. The Learning Process Consists of Four Steps: Experience, Reflection, Thought, and Action.

- *Project-Based Learning*
- *Case Study*

➤ *Educational Context and Challenges in Liberia*

Liberia's education system has been shaped by multiple challenges, including post-conflict reconstruction, limited infrastructure, and uneven teacher capacity (World Bank, 2023). The Education Sector Plan (ESP) 2022/23–2026/27 emphasizes the importance of enhancing the quality and relevance of teaching and learning, as well as strengthening the teaching force in underserved and remote areas. It acknowledges challenges such as teacher shortages, lack of teaching and learning materials, and difficult working conditions in remote schools (Bridge Liberia, 2023; Ministry of Education, Liberia, 2022). The Education Sector Analysis (ESA) 2021 highlights institutional inefficiencies, underinvestment, and gaps in continuous professional development (UNESCO IIEP, 2022; World Bank, 2023).

Moreover, the coordination mechanisms within Liberia's education sector, including the Education Sector Development Committee (ESDC) and the Local Education Group (LEG), have at times been inactive or inconsistently engaged, thereby undermining alignment between donor support and national planning (Liberia ITAP Report, 2023). These governance gaps pose additional challenges to the embedding of novel educational reforms, such as ESD.

Despite these systemic constraints, Liberia has committed to aligning national education policy with global targets under SDG 4 (Bridge Liberia, 2023). However, there remains insufficient empirical evidence on how Liberian teachers comprehend, internalize, and practice ESD and SDG principles. Without such understanding, lofty policy commitments risk remaining inert at the classroom level.

The absence of reliable data on Liberian teachers' awareness, integration, and application of SDG and ESD concepts constitutes a critical gap in both national and international literature. This gap hampers efforts to design context-appropriate professional development, curriculum interventions, and institutional support mechanisms that could enable transformative sustainability education in Liberia and similar contexts.

This paper examines awareness, integration, and challenges regarding the Sustainable Development Goals (SDGs) and Education for Sustainable Development (ESD) among Liberian teachers. By analyzing teachers' demographic profiles, levels of knowledge, pedagogical practices, and access to training and resources, the study seeks to identify gaps and opportunities for enhancing ESD in Liberia's education system. The ultimate goal is to generate actionable insights for policymakers, teacher education institutions, and development partners, empowering teachers as key agents in bridging the gap between global aspirations and classroom realities, thereby advancing Liberia's progress toward the 2030 Agenda.

### III. METHODOLOGY

This study adopted a descriptive survey design with a mixed-methods orientation, suitable for exploring teachers’ perceptions, awareness, and practices related to the Sustainable Development Goals (SDGs) and Education for Sustainable Development (ESD). The design enabled both quantitative and qualitative insights by combining closed-ended and open-ended questions within a single instrument.

➤ *Population and Sampling*

The target population comprised teachers across Liberia, representing public, private, community, and faith-based schools at different levels of instruction (early childhood, primary, junior, and senior secondary, and TVET). Inclusion was limited to teachers actively teaching during the 2024/2025 academic year.

A purposive and convenience sampling approach was used to reach a broad range of teachers with varying experiences and qualifications. The online nature of the survey enabled teachers from diverse regions with internet access to participate, offering a realistic snapshot of SDG and ESD awareness across the country.

➤ *Instrument*

Data were collected using a structured questionnaire titled “*Bridging the Gap: Advancing SDGs and ESD Awareness Among Teachers in Liberia.*”

The tool contained five sections:

- Demographic information (e.g., gender, age, qualification, experience, school type, and county);
- Awareness of SDGs and ESD;
- Classroom integration and practices;

- Training, support, and resources; and
- Beliefs and recommendations.

Items included Likert-scale, multiple-choice, and open-ended questions, enabling quantifiable measures of awareness and practice alongside narrative insights on challenges and recommendations.

➤ *Data Collection Procedure*

Data collection occurred between September 22 and November 1, 2025, through a Google Form shared on social media platforms, email lists, and teacher group networks. This online approach allowed voluntary participation from teachers across Liberia with available internet access.

Completed responses were compiled in Microsoft Excel and analyzed using SPSS (version 28). Descriptive statistics such as frequencies and percentages summarized demographic characteristics, awareness levels, and practice patterns. Qualitative responses were analyzed thematically using inductive coding to identify recurring ideas related to barriers, supports, and teachers’ recommendations for strengthening SDG and ESD implementation. Integrating both strands of data enhanced the reliability and contextual depth of the findings.

➤ *Ethical Considerations*

Participation was voluntary and anonymous. Informed consent was obtained through a digital confirmation option (“I consent/Continue”) embedded in the Google Form. Respondents were informed of the study’s purpose, confidentiality safeguards, and their right to withdraw at any time. Data were securely stored and reported only in aggregate form to maintain privacy and ethical integrity.

### IV. RESULTS

Table 1. Sex of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	38	37.3	37.3	37.3
	male	64	62.7	62.7	100.0
	Total	102	100.0	100.0	

Table 2 Ages of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20 - 29	36	35.3	35.3	35.3
	30 - 39	47	46.1	46.1	81.4
	40 - 49	16	15.7	15.7	97.1
	50+	3	2.9	2.9	100.0
	Total	102	100.0	100.0	

Table 3 Education Level

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid High School	13	12.7	12.7	12.7
Teacher Training Certificate	61	59.8	59.8	72.5
Bachelor's degree	25	24.5	24.5	97.1
Master and above	3	2.9	2.9	100.0
Total	102	100.0	100.0	

Table 4 Years of Teaching Experience

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0 - 5	36	35.3	35.3	35.3
6 - 10	33	32.4	32.4	67.6
11 - 15	19	18.6	18.6	86.3
16 - 20	10	9.8	9.8	96.1
21+	4	3.9	3.9	100.0
Total	102	100.0	100.0	

Table 5 School Type

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Public	62	60.8	60.8	60.8
Private	25	24.5	24.5	85.3
Faith-based	15	14.7	14.7	100.0
Total	102	100.0	100.0	

Table 6 School Location

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Montserrado	44	43.1	43.1	43.1
Margibi	19	18.6	18.6	61.8
Grand Bassa	12	11.8	11.8	73.5
Bomi	13	12.7	12.7	86.3
Sinoe	9	8.8	8.8	95.1
Rivercess	4	3.9	3.9	99.0
Lofa	1	1.0	1.0	100.0
Total	102	100.0	100.0	

Table 7 Grade Level Respondents Teach

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid ECE/Pre-Primary	12	11.8	11.8	11.8
Primary	60	58.8	58.8	70.6
Junior Secondary	14	13.7	13.7	84.3
Senior Secondary	15	14.7	14.7	99.0
TVET/Other	1	1.0	1.0	100.0
Total	102	100.0	100.0	

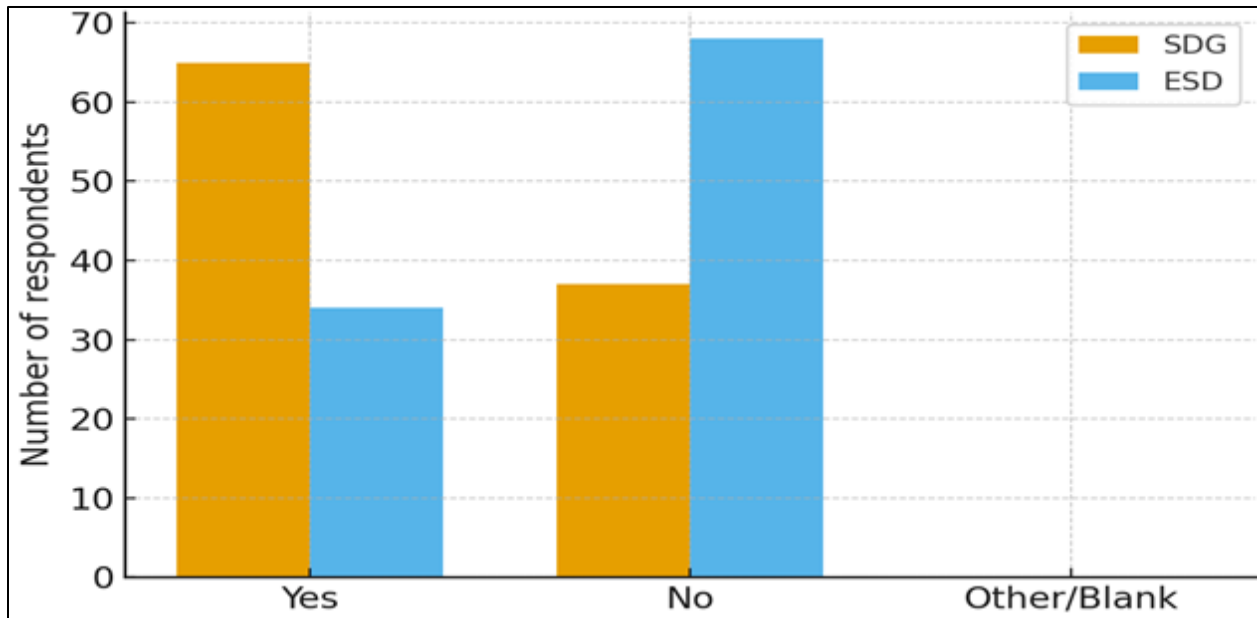


Fig 2 Awareness of SDGs and ESD (N=102)



Fig 3 Top Methods Used to Integrate SDG/ESD

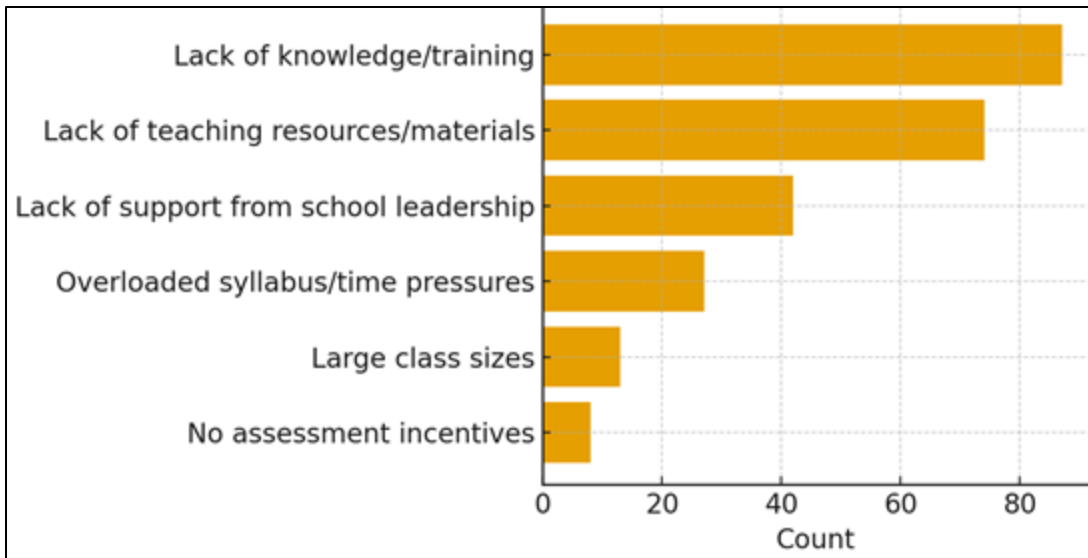


Fig 4 Top Barriers Preventing SDG/ESD Integration

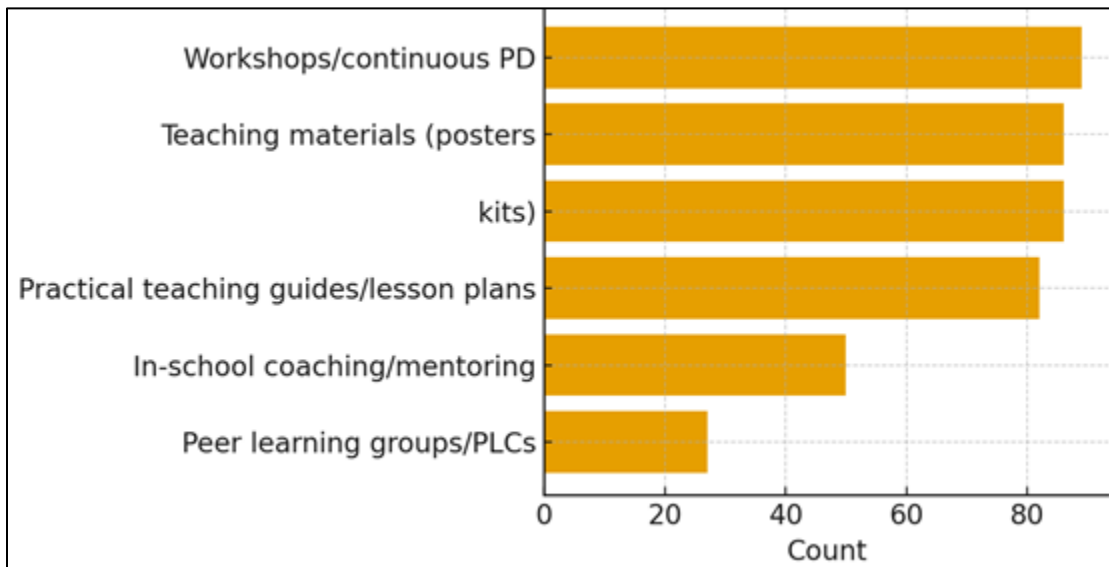


Fig 5 Top Supports Needed to Integrate SDG/ESD

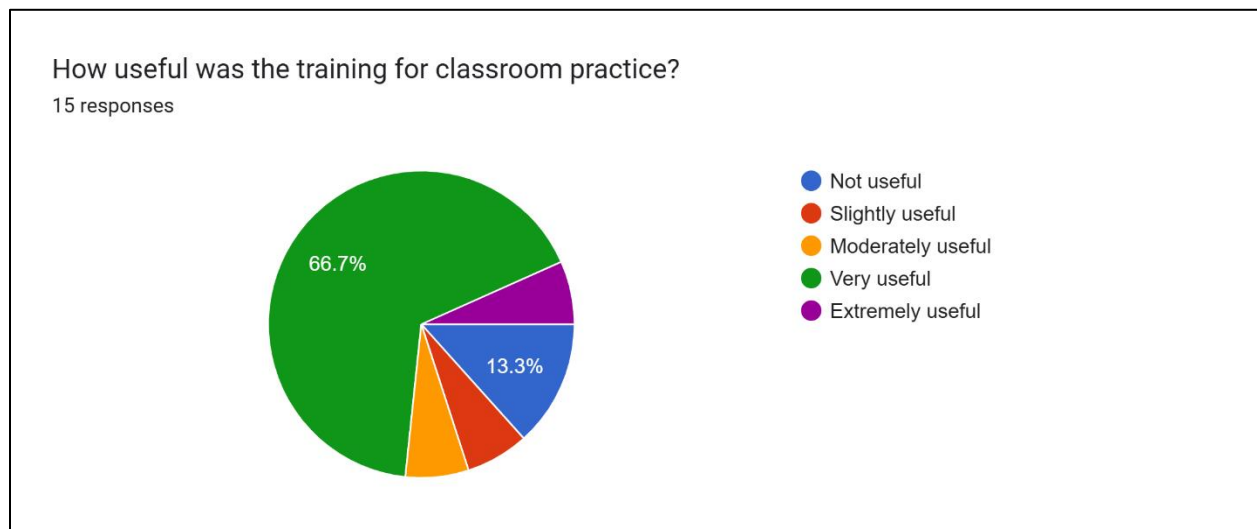


Fig 6: 15 respondents who have participated in training

Table 2: Key Priority Areas Identified by Teachers from the Open-Ended Questions

Theme	Frequency Mentioned	Representative Responses	Summary Interpretation
<b>Teacher Training &amp; Capacity Building</b>	93% (n=95)	“Train teachers,” “Conduct regular workshops,” “Provide in-person training on SDGs and ESD,” “Integrate ESD into teacher education programs.”	Teachers overwhelmingly emphasized the need for continuous professional development on SDGs/ESD through workshops, peer learning, and mentorship.
<b>Provision of Teaching &amp; Learning Materials</b>	82% (n=84)	“Provide teaching resources,” “Supply textbooks and lesson plans,” “Make available posters, charts, and contextualized materials.”	Respondents highlighted the lack of localized and practical resources for SDG/ESD instruction.
<b>Curriculum Integration</b>	65% (n=66)	“Include SDG/ESD in national curriculum,” “Integrate into teacher training program,” “MOE should make it compulsory.”	Teachers called for the formal inclusion of SDG/ESD concepts in both pre-service and in-service curricula to ensure national consistency.
<b>Motivation and Incentives</b>	47% (n=48)	“Increase teachers’ salaries,” “Provide small incentives,” “Pay teachers regularly.”	Respondents linked motivation and compensation to improved teaching quality and engagement with SDG/ESD content.
<b>Monitoring, Coaching &amp; Follow-Up</b>	41% (n=42)	“Send monitors to schools,” “Observe teachers and give feedback,” “Provide ongoing support.”	Teachers valued structured supervision and post-training follow-up to reinforce classroom implementation.
<b>Awareness Creation</b>	33% (n=34)	“Provide awareness in schools,” “Create campaigns on SDGs,” “Use flyers and community engagement.”	Respondents requested wider awareness through school programs, radio, and community sensitization.
<b>Community and NGO Support</b>	22% (n=22)	“Involve local NGOs,” “Engage communities,” “Support from partners.”	Teachers suggested stronger partnerships with NGOs and communities to sustain SDG/ESD efforts.

## V. DISCUSSIONS

The findings indicate that the teaching workforce in the study is relatively young and predominantly male, reflecting a gender imbalance consistent with national trends in the Liberian education sector. This imbalance has implications for gender equity within the teaching profession and for modeling inclusive values in schools. The concentration of younger teachers presents opportunities for long-term investment in sustainability-focused professional development, as they are often more receptive to new ideas and pedagogies.

The results also suggest that most teachers possess basic pedagogical qualifications, though only a small proportion hold advanced degrees. This points to a potential limitation in teachers’ exposure to global education frameworks such as the Sustainable Development Goals (SDGs) and Education for Sustainable Development (ESD). With many teachers in the early stages of their careers, there is a need for ongoing professional learning that deepens understanding of sustainability issues and connects them to classroom practice.

Only a few respondents had participated in SDG or ESD-related training, revealing a clear capacity and awareness gap. This finding suggests that national and local education strategies have yet to fully operationalize SDG Target 4.7, which emphasizes equipping all learners and educators with knowledge and skills to promote sustainable development. Strengthening partnerships among the Ministry of Education, teacher training institutions, and development partners is therefore crucial to expand access to relevant professional learning opportunities.

Thematic analysis of open-ended responses highlights several key priorities expressed by teachers. Training and capacity building emerged as the most pressing need, underscoring the importance of equipping teachers with conceptual and practical understanding of SDGs and ESD. Respondents also identified the lack of appropriate teaching and learning materials as a barrier, calling for locally relevant and contextualized resources. Teachers further emphasized the need for formal integration of ESD and SDG concepts into the national curriculum and pre-service teacher education programs to ensure consistent implementation.

Other priorities included the importance of motivation and incentives, ongoing monitoring and coaching, awareness creation, and stronger collaboration with communities and NGOs. These findings reinforce the view that effective ESD implementation requires not only teacher knowledge and skills but also supportive working conditions, institutional follow-up, and community engagement.

Overall, the study reveals that while awareness of sustainability education is emerging among Liberian teachers, its practical implementation remains limited. Addressing the identified gaps will require a coordinated policy framework that embeds ESD into teacher education, strengthens in-service professional learning, and provides adequate instructional resources. Through these measures, Liberia can advance progress toward SDG 4 on quality education and contribute meaningfully to the broader 2030 Agenda for Sustainable Development.

## VI. CONCLUSION AND RECOMMENDATION

The study explored teachers' awareness and perspectives on the Sustainable Development Goals (SDGs) and Education for Sustainable Development (ESD) in Liberia. The findings show that although teachers generally acknowledge the importance of sustainability education, their practical engagement remains limited due to inadequate training, lack of materials, and insufficient institutional support. The need for structured capacity building, curriculum integration, and professional motivation was consistently emphasized.

Advancing SDG and ESD awareness among Liberian teachers requires a coherent and well-supported national approach. Integrating sustainability concepts into both pre-service and in-service teacher education, supported by locally relevant teaching resources, can enhance classroom implementation. Regular workshops, mentoring, and monitoring systems are necessary to sustain teacher competence and accountability. In addition, collaboration with NGOs and community stakeholders should be strengthened to foster shared responsibility for sustainable education outcomes. Addressing these areas, Liberia can bridge the gap between awareness and practice, positioning its education system as a key driver in achieving SDG 4 and the broader 2030 Sustainable Development Agenda.

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