What is Education for Sustainable Development?

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(Based on UNESCO Global Schools advocacy materials)

According to UNESCO, Education for Sustainable Development (ESD) is defined as education that empowers learners to make informed decisions and take responsible actions for environmental integrity, economic viability and a just society for present and future generations.

ESD is a key driver and facilitator contributing to the achievement of the 17 UN Sustainable Development Goals (SDG) and the Education 2030 Sustainable Development Agenda (Education 2030) as a whole and includes integrating a wide range of sustainable development issues such as climate change and biodiversity, socioeconomic inequality, peaceful societies and more into teaching and learning.

UNESCO highlights several key competencies and learning objectives associated with teaching ESD. The learning goals are broken into cognitive, socio-emotional and behavioral domains, and are elaborated for each SDG goal. The movement for sustainable development begins in the classroom, and local grassroots work is equally as important as national policies.

The challenge for educators is realising these ESD connections and to understand how to incorporate innovative pedagogies on the SDGs and encourage student actions, while maintaining time for assessment and other system requirements.

Without national policy for teachers, limited awareness and experience prevents ESD topics from being integrated effectively in the classroom.

Pedagogy

Active learning pedagogy, such as group work, debates, classroom discussions and inquiry-based learning is essential for student success in ESD learning.

A study by Round Square Schools identified learning activities that had the highest number of statistically significant correlations with global competence learning outcomes as:

1. Volunteering in the community.
2. Participating in events celebrating cultural diversity.
3. Learning how cultural background influences individual perspectives.
4. Participating in classroom discussions about world events.
5. Learning to solve conflicts (Round Square Schools, n.d.).

ESD improves student achievement

There is compelling evidence linking Environmental Education, ESD and Climate Change Education (CCE) to increased student academic performance. The impacts of Education 2030 have been demonstrated across a variety of countries and schools. A literature review of over 14 comprehensive studies in multiple contexts found that there is a substantial amount of evidence that links Education 2030 with positive academic achievements (Aikens). A Stanford University review of approximately 120 peer-reviewed studies found that environmental education improves academic performance, enhances critical thinking skills and develops life skills. Ninety per cent of the studies reviewed saw increased skills for students and 86 per cent saw positive changes in students.

Learning environments

The learning environment in which children study produces significant results in children's capacity to learn and absorb new information. Being exposed to an outdoor, green space is believed to increase cognitive development and memory retention.

Improved skill retention

According to the [Journal of Education for Sustainable Development](), students from 14 countries showed stronger critical thinking skills, deeper understanding of the topics under study and better research skills by learning through ESD. In addition, one country (Latvia) reports that students are better prepared for the job market. Students also demonstrated excellent communication, writing and mathematical skills, problem-solving skills and abilities in forming and defending their opinions. University professors also state that ESD school graduates enter university over-prepared for post-secondary studies, that ESD students contribute to creativity and character education and that student attendance rates increase in ESD schools.

Sustainable development understanding

ESD better prepares students to have the knowledge and skills necessary to care for and better address sustainable development issues that will arise in the future. This pertains to educating today's students for an uncertain future to learn how to face the complexity of future challenges to global sustainability. ESD provides students with opportunities to observe the complex connections between local and global issues, analyse systems and find appropriate solutions through engaged and focused inquiry. The more practice students have in facing today's real-world issues, the more likely they will be able to address the problems they face in the future.

Student engagment

ESD helps students, schools and stakeholders connect to their respective communities while increasing student engagement, collaboration and awareness about community issues and the surrounding network. When students engage in local issues, they learn about their community and become more engaged directly with community members. This can also help community members become more involved in the school and strengthen ties between local businesses, organisations, communities, universities, local governments and more.

Healthy students

Mental health in students is an ever-important issue. The COVID-19 pandemic and anxiety over world events can have an impact on students' mental health. A [study]() published by Science Direct showed that green schoolyards can reduce stress and promote protective factors for resilience in students. The study found that the natural environment helped students escape stress, focus, and more. Using nature as a learning environment is one of the elements of ESD.

Peaceful communities

ESD helps promote peaceful communities by increasing knowledge, sensitivity and conflict resolution skills. According to [UNESCO](), "Integrated schools have been found to positively influence minority group identity, improve attitudes towards inclusion, and drive a sense of forgiveness". Education and textbooks tend to be filled with propaganda or misinformation, but when we change the narrative for discussing conflict, making it a more sensitive approach, it can make a positive impact on students' understanding of conflicts and resolution.

Becoming better citizens

ESD curriculum encourages students to be better citizens through lessons on leadership education, enhancing socio-emotional skills and helping students become the leaders of tomorrow as informed global citizens. These soft skills include self-esteem, autonomy, character development, maturity, empowerment, verbal communication, leadership, poise and the ability to collaborate with others. When developing these skills in students, ESD ensures students can apply these concepts to solving global challenges beyond the classroom.

These two articles (below) explain the benefits of environmental education. Although an interdisciplinary approach to ESD spanning the economic, social and environmental domains, these resources provide more background on the tangible academic and life-long benefits for students when teaching ESD and the SDGs.

1. [Stanford analysis reveals wide array of benefits from environmental education]().

2. [Benefits of environmental education](#).

ESD competencies for students

[UNESCO has highlighted](#) a number of key competencies and learning objectives associated with teaching ESD. Key competencies include systems thinking, critical thinking, self-awareness and integrated problem-solving. The learning goals are broken into socio-emotional, behavioral, and cognitive domains, and are elaborated for each goal.

Eight competencies that are important when teaching ESD:

1. Systems competency.
2. Anticipatory competency.
3. Normative competency.
4. Strategic competency.
5. Collaboration competency.
6. Critical thinking competency.
7. Integrative problem solving competency.
8. Self-awareness competency.

[UNESCO has identified](#) 10 key aspects that support quality education related to the individual learner and to systems of education. Five of these aspects are at the level of the learner, including:

- Seeking out the learner.
- Acknowledging the learner's knowledge and experience.
- Making content relevant.
- Using many teaching and learning processes.
- Enhancing the learning environment.

Pedagogies associated with ESD stimulate students to ask questions, analyse, think critically and make decisions. Such pedagogies move from teacher-centred to student centred lessons and from rote memorisation to participatory learning.

A central plank of ESD is to encourage Global Citizenship Education at all levels.

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- A learner-centred approach.
- Action-oriented learning.
- Transformative learning.

Pedagogy includes social emotional skills and place-based learning

Place-based learning is one of the main pedagogical frameworks that educators reference when teaching ESD and the SDGs. Place-based learning connects students to the space in which they are learning. The purpose is to help students engage with their school community and their local communities. This includes engaging with their local culture, history or their physical environment.

Educators can make learning more place-based by:

1. Taking students outside during the lesson.
2. Using the local community and the school environment as the environment. Discuss community heroes, write letters to your local minister of environment, take pictures of different aspects of pollution or upcycle trash and paper waste from other classrooms into beautiful flower pots, origami etc.
3. Be aware of local events occurring in the community and discuss them in the classroom. You could discuss events such as forest fires, elections or even cultural celebrations. [For example](#), "In Aotearoa New Zealand, place-based education has a special role in connecting students with local Mori knowledge, histories, skills, techniques, and tikanga (values and customs)".
4. Facilitate community volunteering projects for students.

Place-based learning can also be linked to curriculum standards:

1. **Data science standards and technology standards.** Place-based education can also help students learn how to use digital technologies. [SDGs Today used open source mapping](#) to allow students and schools to map their school

locations. This data is then used to communicate with local ministries and organizations the distance to school locations. You can also use GIS and digital storytelling to learn about geography, science, sustainability and the urban landscape. [ArcGIS's lesson gallery](#) has a variety of lessons that bring place into the classroom.

2. **Research standards.** Place-based learning can meet research standards by giving opportunities for community research projects. One Global Schools Advocate tasked his students with an inquiry-based project where the students would ask local community members about waste management. Guided by a worksheet, the students went out into the community and asked local leaders and community members their thoughts and habits when it came to waste management (SDG 12). Upon returning to the classroom, the students had to contextualize and write-up community recommendations. The students learned survey, interview, data analysis, and writing skills.

Experiential learning is based on the theory synthesised by Kolb, and encompasses a four-step learning cycle. The learning process follows four steps:

1. **Experience.** This step starts with the learner having a specific experience. It often requires the learner to take an action. They are "learning by doing". This can be a new experience or a reiteration of an experience that they have already had, with the ability to reflect and look at it in a new light.
2. **Reflect.** This next step allows the learned to reflect and review the experience that they just had.
3. **Think.** Learners are then asked to draw conclusions about the learning experience they had. This stage often leads to new ideas.
4. **Act.** The last stage allows learners to act upon what they have learned. This step allows them to actively apply their learning in new ways through active experimentation.

If this theory could be summarised, it is best summarised as learning by doing. It involves having an experience in order to be able to reflect and reshape views. Experiential learning could be community volunteering, internships, Model UN, role-playing games and simulations, field trips and more. This is greatly connected to ESD because learning by doing allows students to connect to their local communities, apply critical thinking and problem solving to specific situations and practice anticipatory competencies where they reflect and think about the future.

It is also important to have an open classroom environment for discussion and reflection. Here are some [suggested activities for structured reflection](#) and [strategies to help students "keep talking" continuously](#) in the classroom.

Lesson planning

- Students learn about the importance of education for girls in order to achieve sustainable development and improve human wellbeing.

Now, let's think about how we could write this learning objective in multiple bullets in order to embrace the ESD competencies (systems thinking, strategic thinking, normative competency, anticipatory competency, critical thinking competency and more). See the revised learning objectives below:

- Students will apply critical thinking when learning about girls' access to education.
- Students will reflect on their values and understand others' perspectives around girl's education.
- Students will use critical thinking and problem-solving skills to highlight the importance of gender equality and girls' access to education.
- Students will explore the interconnection between girls' access to education and other UN SDGs.

Monitoring and Evaluation

One of the essential parts of integrating ESD and the SDGs in your school is to evaluate the outcomes and outputs of your incredible and important work in your school community! Monitoring and Evaluation (M&E) will help you gather data on what you have accomplished and then you can use this data to re-evaluate your activities.

Monitor the CHANGE

The key part that we want to stress about M&E is that you want to monitor the *change* in behaviour, knowledge or attitudes. This means that you need to understand your school community before and after the activity. Conducting a survey or an evaluation after the activity makes it more difficult to understand your impact, so that's why you need to plan ahead. If you only give teachers an evaluation after doing a workshop on sustainability, it is possible that these teachers had already taken a training course elsewhere. Therefore, they were relying on their prior knowledge. The same applies to students. If you only survey students or ask them a question after doing a lesson, you won't know if you have increased their knowledge or had a significant change in their values or actions.

Choose specific INDICATORS

Quantitative data can be obtained through indicators. These indicators will inform how successful you were at integrating ESD through an activity. Additionally, these indicators should also contain very specific goals. For example:

1. Change in correct answers on an exam.
   Example: After a geography lesson on clean water, more students will be able to answer 10 knowledge-based questions correctly about the importance of clean water.
2. Number of students that complete the assignment correctly.
   Example: At the end of the year, 100 per cent of the students will have presented calculations on migration patterns across African countries.
3. Number of student projects completed.
   Example: In May, 50 students across the school will have drawn posters on the importance of protecting endangered animals.
4.
   Number of classrooms.
   Example: By next year, 80 per cent of classrooms will have recycling bins.

Make a PLAN

It is crucial to make sure that your goals are time-bound. You need to know when you are completing your activity and when you want to assess your school community or your students. Create due dates for tasks and goal completion and make sure you know how you will be carrying out your evaluation. Will you be giving your students a pre- and post-exam? Will you be having teachers fill out a survey giving their feedback to you about practices in the school related to clean energy? Will you go around and count how many recycling bins are in the classrooms before and after your recycling campaign?

Keep MODIFYING

Monitoring and Evaluation is not straightforward and takes many trials and errors to create the perfect M&E plan. Yet, it is also one of the most important steps. You want to ensure you can learn from each experience to perfect it. However, if you didn't do a survey before an activity - don't worry! If you don't know how to evaluate a program perfectly - don't worry! And if you forgot to add one specific question to a form - don't worry! This is meant as a learning process for you and your school community. The [Global Schools Advocacy] team will also be able to help you in this process.

Encourage school leadership to prioritize SDG

During your Advocacy term, encourage school leadership to prioritise SDG by:

Creating a shared vision

- To fully be successful at integrating ESD and the SDGs in the school community, there is a great need to synthesise the school mission statement, school governance, school leadership, extracurricular activities, curriculum and lesson plans.
- To be successful at implementing ESD, school leadership should strive to create a shared vision, a culture with collective and shared responsibilities, an open and collaborative school that seeks out local partnerships and a school where sustainability issues are incorporated in the whole-school and not added on and fragmented. School leadership should also consider how to approach changing behaviors of learners in an environment that fosters critical thinking (Scott 2013).

Leading by example

- Empirical research carried out in Belgian schools revealed that actions at the school governance and organisational level played a significant role in mitigating and navigating the gap between ESD policy and practical implementation of ESD. This study also concluded that effective communication, shared leadership and school culture were critically important in this context (Boeve-de Pauw and Van Petegem 2011b).
- School leadership needs to take the lead, as school-wide vision and culture are critical to integrating ESD across the curriculum. A school-wide idea, leadership focus, school structure, and teamwork can all contribute to integrating ESD in schools.
- School leadership should also make an effort to train themselves on ESD competencies and participate in professional development workshops in this topic area.

Removing barriers to change

- School leadership should make sure that they are not creating barriers for teachers and students in schools if they are serious about incorporating ESD and sustainable practices in their school communities. A study of curbside vs. drop-off recycling programs showed that behavior change is less likely when there are barriers to an intended behavior. The most convenient behaviour was taken, regardless of knowledge, attitudes, and beliefs about recycling (Guagnano et al., 1995; Schultz and Oskamp, 1996).
- Barriers to actions can influence whether a behaviour is accomplished. It is advised that school leadership changes the physical and/or social environment to make sustainable behaviours less difficult. School leadership can also promote these behaviours as more socially valued to the community by leading by example and creating shared values with their communities and teachers (Scott 2013).
- ESD implementation school-wide can be based on political decisions taken at the school political level. Promoting attitude change for administration boards and leadership can greatly impact the progress towards sustainable development and behaviour.
- A school evaluation revealed that attempts to implement ESD in selected eco-schools had weak and negative effects on students' perceptions where the school leadership and school organization did not support the implementation of ESD or use their policy-making capabilities to reduce negative effects (Boeve-de Pauw and Van Petegem, 2011).

Supporting Teachers and Staff

- If teachers create groups, networks, peer-groups or committees, they are more likely to adopt the social behaviors made by that group. School leadership can facilitate this by creating time for teachers to lesson plan, meet or attend a workshop together to learn about a specific topic. School leadership can also facilitate an ESD or sustainability committee in schools. Teachers working together can create a social identity and adopt the values and behaviours of a particular group.
- Psychology shows us that we are more likely to respond to a request for action and change/influence our behavior if that request for action comes from someone we know and that is close to us (Boster, Rodríguez, Cruz, & Marshall, 1995). School leadership should seek to have close relationships with staff if they want to encourage behaviour change.
- One of the most consistent findings in social sciences is the degree to which human behaviour is influenced by its immediate physical and social context. These factors are frequently not adequately considered when designing behavior change programs, including ESD programs (e.g., McKenzie-Mohr, 2000).
- A study of people in EcoTeams (groups of six to 10 neighbors and friends who already knew each other) who came together to work on environmental behaviour in households, found that social influence from past interactions helped contribute to long-term behaviour change, even two years after the study (Arbuthnott).

What school leaders can do

If you are a school leader, one of the most important aspects for schools is to create a school vision that encompasses the relevant education for sustainable development topics that are prominent in the local community. This can be as simple as creating a new mission statement, or bringing everyone together for a meeting to discuss the three pillars that are the most important within the ESD framework for their particular school.

While ESD might not be explicitly stated in your lesson plans, school activities or curriculum, UNESCO gives the following ideas to use as the most common starting points for understanding what is already in your school community:

1. Look at your institution's vision and mission statement.
2. Look at institutional initiatives such as waste management, recycling and more.
3. Look at community activities such as volunteer projects, food drives, education and training, etc.
4. Look at field trips to human rights museums, charity events hosted by the school that benefit students with disabilities, etc.

Once you understand what exists and your school's priorities, it will become easier to create relevant lesson plans and activities that are applicable to the vision of your school.

Schools joining the Advocacy movement

Some Advocates in training might have questions on how to involve the rest of their school in the program. Firstly, we encourage you to:

- Gather other ESD Leader Teachers in your school and carry out the Global Schools Workshop.
- Inspire other teachers and school leadership through your activity as a Global Schools Advocate.

- Share your success with other teachers in your school.

·Secondly, your school and fellow teachers can also:

- Sign the Global Schools Pledge on the website.
- Sign up for the Global Schools newsletter on the website.
- Join the Global Schools Educators Forum on Facebook (if your school has already signed the pledge).
- Take additional courses on the SDG Academy website about the SDGs and sustainable development.
- Apply to the next cohort of Global Schools Advocates.

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