

Education for sustainable development



**ASSIGN
BUSTER**

A sustainable society is one that is far-seeing enough, flexible enough, and wise enough not to undermine either its physical or its social systems of support. (Donella Meadows)

What should people learn? And how could they be taught?

There is no real shortage of curriculum materials, lesson plans, and classroom activities for teachers wishing to educate for sustainable development. This section makes reference to a sample of the resources on the internet that embody its recommendations. It aims to provide some anchor points that should enable teachers to evaluate such material, use it more constructively, and increasingly plan and produce their own materials based on the needs of their pupils and community.

Overcoming nature and society dualism (science and ICT)

Modern societies alienated people from the rest of nature as industrialization and urbanization separated them from the land. One cause of this alienation is the division of academic knowledge (and school subjects) into those concerned with the ‘natural’ world (the natural sciences) and those concerned with the social world (the social sciences). Such dualism encourages the belief that the bio-physical world of ecological relations is separate from society and social relations. Our own bodies and everything that surrounds them (the environment) is the product of both ecological and social relations and processes. Indeed everything can be regarded as natural or nature in that there is nothing un-natural about people.

Such a philosophical diversion is relevant because primary schools have long celebrated a nature separate from society. The nature walk, the nature table,

<https://assignbuster.com/education-for-sustainable-development/>

the science lesson, the assembly, too often suggest that nature is something separate from society to be contacted, experienced, investigated and manipulated, or worshipped. While mainstream primary education has been guilty of such dualism it is also a feature of progressivism. By suggesting children should be educated ‘ according to nature’ progressive educators idealized or romanticized a nature outside society and similar ideas are current today amongst those environmental educators who advocate ecological or earth education.

The challenge of sustainability is to reconnect the development or evolution of the bio-physical and social worlds with appropriate technology governed by appropriate ethics, laws, institutions and ideas. This requires a primary curriculum that integrates knowledge and school subjects so that pupils can study science and technology in a social context.

Basic ecology, ecological limits and ecological footprints

Children’s awareness of ecological limits is perhaps best developed by practical experience of growing crops or talking to gardeners and farmers. There is a limit to the food, fiber or energy crops that can be grown on a fixed area of land and attempts to increase yields by removing limiting factors (as with artificial fertilizers) may have unintended consequences. Similarly children are likely to understand limits on the use of renewable resources (e. g. over-fishing) through the use of simple simulation games or the analogy to savings in the bank. Living on interest is sustainable but living on capital is not.

Modern lifestyles depend on fossil fuels and productive land and water throughout the world that produces the resources we consume and treats our waste. Our ecological footprint is the area of land and water required for the sustainable production of all the ecological resources and services that enable us to live in the way we do with particular forms of technology and a particular standard of living. The ecological footprint of the average US citizen is over twelve times larger than that of the average Indian.

Other example: watering the plants by flooding and Injection method.

4. 2 Pedagogy

a) Related disciplinary holistic (Holistic Content)

Holism (from Holos, a Greek word meaning all, whole, and entire, total) is the idea that all the properties of a given system (physical, biological, chemical, social, economic, mental, linguistic, etc.) cannot be determined or explained by its component parts alone. Instead, the system as a whole determines in an important way how the parts behave.

Holistic education is a philosophy of education based on the premise (logic) that each person finds identity, meaning, and purpose in life through connections to the community, to the natural world, and to humanitarian values such as compassion and peace. Holistic education aims to call forth from people an intrinsic reverence (honor or respect) for life and a passionate love of learning.

Robin Ann Martin (2003) describes this further by stating, “ At its most general level, what distinguishes holistic education from other forms of education are its goals, its attention to experiential learning, and the <https://assignbuster.com/education-for-sustainable-development/>

significance that it places on relationships and primary human values within the learning environment.”

The key pedagogical goal is to help students intellectually understand and solve problems. Managing sustainable requires students to develop passion for sustainability. Passion for sustainability can be taught using a holistic pedagogy that integrates physical and emotional or spiritual learning. A prototype course design on managing with passion for sustainability is suggested.

b) Values driven

Values are also an integral part of ESD. In other cultures, however, even if values are not taught overtly, they are modeled, explained, analyzed, or discussed i. e. flexibility. In both situations, understanding values is an essential part of understanding your own worldview and other people’s viewpoints.

Understanding your own values, the values of the society you live in, and the values of others around the world is a central part of educating for a sustainable future. Two common techniques are useful to the values component of ESD

Values clarification

values analysis

In ESD, values have different roles in the curriculum. In some ESD efforts, pupils adopt certain values as a direct result of instruction or modeling of accepted values. In other cultures, studying the relationship between society

and the environment leads pupils to adopt values derived from their studies.

Three types of values are very important and those are

- Curiosity values
- Shared values
- Content values

Objectives of values can be summarized as

To develop an understanding of values in education strategies

To consider the relation between values and personal behavior affecting the achievement of sustainable futures

To develop skills for using values clarification and values analysis in teaching

To reflect on your futures awareness, commitment and actions

c) Critical Thinking and problem solving

Education systems everywhere will need to include a focus on the causes, consequences and solutions to climate change, if the necessary changes in society are to be effected in time. Addressing the causes and the consequences of climate change requires content and methodologies that will build capacity in society for

Mitigation (relief)

Adaptation (Variable adjustment)

Transformability (Applied to function)

More over following points are notable,

All levels and forms of existing educational and teaching and learning programmes need to be reviewed and re-oriented to address the causes and consequences of climate change.

Climate change requires educators to include new content into education, training and public awareness programmes.

Creativity, problem solving and social transformation skills need to be developed.

Positive, participatory action and solution-centered approaches to education and learning need to be developed.

d) Multi-method (word art, drama, debate, life experiences. LINKING ENVIRONMENT AND DEVELOPMENT

The multi-method approach is necessary because we need

- To link environment and development by exploring the global implications of weakening ecological webs
- To study the phenomenon of deforestation (as an example of non-systematic thinking): its causes and effects
- To consider the web of factors leading to activities which cause deforestation
- To reflect on the different roles involved in the making of decisions about activities with significant environmental impacts (such as logging, mining etc)

Examples of Issues for Multi-method: Deforestation, Green House Gases, Health, Recycling, Luxuries, Promoting simple life, Deforestation, Tissue

paper, Sewage water vegetation, Professional exposure to Pollution, Energy storage and sustainability (Mobile battery, UPS, Black leather etc) and health problems. Solar Cell sustainability etc

SESSION 3: CLIMATE CHANGE

Aims

- To explore the science of climate change
- To increase participants knowledge and understanding of the commonly used terms and figures used in discussions about climate change
- To highlight the major challenges involved in combating climate change
- To highlight climate change as a global justice issue
- To brainstorm positive responses to the challenges of climate change.

Session Outline

Energizer

PowerPoint presentation

Group discussion

Mind-map drawing

Materials Needed

- Power Point presentation, ' Climate Change: The Numbers'
- Numbers from the presentation written on separate scraps of paper
- Flipchart paper

<https://assignbuster.com/education-for-sustainable-development/>

- Markers
- Blu-tac (pressure-sensitive adhesive, commonly used to attach papers to walls or other surfaces)
- Post-it notes
- Laptop and data projector
- Broadband connection (for closing activity only)
- For Alternative World Café Activity you will need tables, chairs, paper tablecloths, crayons, post-its, flipchart paper, markers- and coffee!

ACTIVITIES

Suggested Warm-Up exercise: Outrageous Lies (non conventional lies)

There is a lot of misinformation about climate change in the media, sometimes even there are outrageous lies! This exercise encourages participants to think creatively and will warm them up to contribute their guesses to the slide show.

- Divide the participants into smaller groups of 4-5
- Give them each an ordinary object such as a stick, a glass, a piece of chalk.
- Each person in the group must talk about the object for one full minute before passing it to the next person.
- When this is finished, bring the whole group back together.

- Have a selection of objects, including the ones used in the smaller groups.
- Invite the participants to pick any one object and tell an outrageous lie about it. They may be slow to start but once they get going they will have fun linking their lies about the objects together.
- Keep going until you feel the group has warmed up.

Activity 1: Climate Change: the Numbers

The presentation is intended to make the science of climate change more accessible and understandable. It comprises a series of numbers that have a specific relevance to climate change. It begins with an image of a confused-looking George Bush, signifying the confusion that many of us feel when confronted with the jargon (meaningless talk or writing) and statistics of climate science. This confusion can lead to inaction so it is important to have a basic scientific understanding of climate change. Our learning should also be accompanied by a critical appraisal (decision analysis) of the sources of information on the issues.

1. Hand out the scraps of paper with the numbers written on them to participants. (Make 2 or 3 copies of each number if your group is larger.) Explain that the presentation will be based on all the numbers that the participants have. They could be measurements of time, of greenhouse gases, they could be dates or deadlines. The purpose of this is to involve the participants in the presentation and to make the facts more memorable.
2. Ask them to think about the special number they have received. What might it signify? How might it be relevant to climate change?

3. The slides move from historical reasons for climate change through to current challenges, carbon emission limits and deadlines. As you go through the slides ask for suggestions for what each number might be. (They will probably have no idea at first but gain in confidence as the presentation proceeds.)

4. The presentation finishes with a different US President- Barack Obama and his positive ‘ yes we can’ mantra (spiritual transformation). This leads to the next activity.

5. Before moving to the next activity finish the presentation by asking for feedback from participants. What facts did they know before? What was new? What was most surprising/ troubling/outraging?

Activity 2: Brainstorm in groups

It is important not to feel overwhelmed by the enormity of the challenge of climate change. ESD empowers learners to take action on issues they feel are important.

1. Ask the group to form smaller groups of 3-4.
2. Give each group a flipchart page, markers.
3. Ask each group to create a mind-map the theme of ‘ Yes we can!’ or positive responses to the challenge of climate change. Ask them to think about what changes they can make to their own lives to respond to the issues about which they have just learned.

4. When they are finished ask each group to feedback to the whole group and post the mind-maps on the wall as a continual reminder.

Mind-maps: A diagram used to represent words, ideas, tasks, or other items linked to and arranged around a central key word or idea.

Activity 2: Alternative Activity

Mini World Café conversation on adaptation for and mitigation against climate change. (This will take at least an hour and a half.)

The aim of World Café is to make the most of the collective knowledge and ideas of the people in the group. The group talks at their tables about the issue, responding to one or two well-thought-out questions.

1. Form groups of four.
2. Rearrange the tables in the room to create table clusters, as in a café.
3. Place a flipchart paper on each table along with some markers and crayons (stick of colored wax, charcoal, chalk, or other materials used for writing) and post-it notes.
4. Briefly explain the World Café concept.

(Through both our research and the decade of practice that followed its emergence, we have come to view the World Café as a conversational process based on a set of integrated design principles that reveal a deeper living network pattern through which we co-evolve our collective future)

5. Ask for one person in each group to volunteer to be a table host. A table host stays at their table and welcomes new people to it. The other members of the group are ambassadors and will move from table to table.

6. Before starting clarifies the question with the group to make sure everyone understands it. Have a question prepared that is relevant to your group.

E. g. How can we as M. A Education students in UE and affiliated Colleges & Schools raise awareness among our peers of climate change? What are the first steps we must take to make a change? How do we proceed from here?

7. When everyone is clear about the question and the process, begin the first 20 minutes of conversation. Give the group notice 5 minutes from the end of the first round. Give them 5 minutes break and then start the second round.

8. After every round the ambassadors are asked to leave their conversation and move to any other table to join in the discussion there or start a new discussion.

9. All the time the ambassadors and/or table hosts must record the conversations on the flip chart paper. Key ideas or moments of inspiration can be captured on the post it notes and stuck on the wall for everyone to see.

10. Do this 3 times if possible. In the 3rd round ask the groups, whatever back to the whole group.

11. Give 15 minutes at the end for this feedback and discussion.

12. If possible pick out points from the feedback that could become actions. Assign responsibility for those actions to group members. Table they are at, to summaries the discussion at that table into some key points. These will be posted on the wall and fed

e) Participatory decision making

Some experts have argued that links between sustainable development and gender pertain primarily in traditional contexts and at the local level, while major (global) environmental threats have little connection with gender relations and equality. However, this argument may partially stem from a lack of research and data on the links between gender equality and sustainable development at the global level.

For example, two of the main global environmental threats that face us today are the depletion of the ozone layer and climate change. Both of these threats stem largely from consumption and production patterns related to industrialization and the dominant processes of economic globalization. Change requires reexamining the ways in which trade, industry, development and other economic policies are pursued.

In this sense, global environmental threats are a question of macroeconomic policies and governance. Other Gender Briefs in this series have demonstrated that enhancing attention to gender equality will bring greater accountability and focus on social justice. While more research is required to determine the precise nature of this link, it can be argued that greater gender equality in decision making positions and the adoption of social

justice criteria for macroeconomic policy will also enhance attention to sustainable development, including a sustainable global environment.

The goal regarding sustainable environment and development policy is therefore:

Closer investigation of the links between policy that promotes sustainable environmental development and policy that promotes gender equality; and using these links as the basis for promoting a more sustainable development agenda, in both human and environmental terms

Progress towards the above goals can also be aided by promoting equal participation of men and women in the highest environmental, macroeconomic and development policy-making positions.

f) Locally relevant; Global Issues, Languages and Culture

The Maldives is an archipelago of 1, 200 islands of which 200 are inhabited. In the past, the Maldives had been exposed to moderate levels of natural disasters and had an ad hoc emergency response system until the tsunami of 2004.

The Indian Ocean Tsunami of 26 December 2004, the worst natural disaster in the history of the Maldives, affected the entire country. All but nine islands were flooded and 13 islands were totally evacuated. The disaster claimed 82 lives, left 26 people missing and displaced over 15, 000 people (about 5. 5 per cent of the population).

In line with the national disaster preparedness policies, the Ministry of Education of Maldives aims to establish a disaster preparedness policy for island schools.

Schools as Gateways for Education for Natural Disaster Preparedness

The Maldives has a young population; close to 45 per cent of the population is less than 18 years old with a great majority enrolled in schools. According to the 2005 official statistics, there were 102, 073 students enrolled in 334 schools across the Maldives and 5, 616 teachers teaching students in those schools. Thus, more than 40 per cent of the total population (270, 101) is directly engaged in the schools on any given school day.

In addition, schools have a strong bond with the community through the active engagement of the Parent-Teacher Associations (PTAs) in school affairs.

Moreover, with the very limited public infrastructure on the islands, schools are not only a place for the students: they also serve as the islands' multi-purpose convention centers where community activities, meetings and public events are held.

Identifying Priorities

Initial consultative meetings were held with the officials of the Ministry of Education. It was decided that the first step towards disaster preparedness education through schools would be to formulate a disaster preparedness policy for schools.

Lessons Learned

A low probability of hazard occurrence yet high vulnerability due to the geographical, topographical and socio-economic factors of the islands exposes the Maldives to a moderate level of risk overall. Hence, it is critical that specific policies and measures are implemented to reduce the level of vulnerability in order to avoid a disproportionate scale of losses and damage.

The most important lesson learned from the consultations and feedback for material development was that education for disaster preparedness is an endless process that requires a constant collaborative effort from all parties concerned. The project team had discussions with officials from the government sector, NGOs, island

chiefs, school administrators and teachers. Meetings at the islands were conducted in a relaxed environment at a time and a place convenient to the respondents.

Maldivian have strong religious faith. This may be the reason why some respondents argued that a natural disaster is an act of God and however much we try, we cannot prepare for it. It was difficult to convince them that in preparing for disasters, people may be acting with the will of God rather than against it. Others are still in denial of disasters and believe that a large-scale disaster such as the tsunami will not happen again. Thus, educational initiatives should address not only how people should prepare for natural disasters but also why they should be prepared for them.

4. 3 Schools and Learning

a) Co-Learning & Self Learning Together

The learning involves knowledge, skills, attitudes and habits of mind that make it possible to live with in nature.

Develop a shared understating of sustainability and Education for Sustainability (EfS) with in institutional community

Provide a shared professional development experience to develop a shared vocabulary and understanding that can be used to create change

Lead change in curriculum and instruction by developing units

Provide professional development as per indicators

Encouragement and support to student -led initiatives

CelebrateWhat is EfS Quote

Social Links

b) The Learning Classroom-Action Steps

In the learning classroom, curriculum and instructional methodologies produce authentic and engaged learning.

Document and map the Operational curriculum for the whole school/district

Design/document units using assessment tools

Map the vertical and lateral operating curriculum and assessments on a web based curriculum mapping or curriculum documentation tool

<https://assignbuster.com/education-for-sustainable-development/>

Continuously read the feedback and improve practices overtime

Fully integrate the EfS Standards and performance indicators in to the curriculum Scope and Sequence in the appropriate disciplines and grade levels

Integrate the physical plant changes directly in to curricular innovations

Celebrate

c) Schools that Learn-Action Steps

Collaboratively develop a strategic plan for EfS with goals, measurable indicators and timelines

Align performance assessment and incentives with the strategic plan

Dedicate and align time, resources, funding and deeper professional development (for example: Content, Instruction, Curriculum development and assessment) to the strategic plan

Communicate the strategic plan to whole school community and set expectations

Develop participatory and leadership vision

Sustain vertical and lateral curriculum integration along with organized learning assessment

Reflective journal

Celebrate

d) Communities that Learn-Action step

Identify & develop authentic learning opportunities for students in the community.

Identify & develop relationships with the key stakeholders as resources to the school/district.

Identify community needs and develop the way a school can be an authentic resource to other schools & to the community.

Identify & develop authentic ways for sustainability

Monitor the success

Celebrate

e) Physical Plant, Procurement and

Investments-Action Steps:

Conduct a baseline assessment of building materials, maintenance products and how the school community travels to and from schools.

Set goals to source locally or regionally, reclaimed or recycled sustainably harvested, non toxic materials.

Set goals to increase the mode of sustainable mode of transportation.

Track progress overtime

Ensure reuse and recycling of materials as a fundamental function in school environment

Conduct an energy audit and take steps to promote renewable resources of energy

Promote institutional farming/relationship for food etc. avoid packaging

Celebrate

4. 4 Whole School Approach for ESD & Action Learning in ESD

A whole-school approach to ESD calls for sustainable development to be integrated throughout the formal sector curriculum in a holistic manner, rather than being taught on a stand alone basis. This philosophy supports the notion that ESD is education for sustainable development rather than education about sustainable development. In practice, this approach means that a school will incorporate teaching and learning for sustainable development not only through aspects of the curriculum, but also through sustainable school operations such as integrated governance, stakeholder and community involvement, long-term planning, and sustainability monitoring and evaluation. Whole-school approaches also advocate for active and participatory learning, a hallmark of ESD, and call for the entire school, including students, educators and administrators, to be actively engaged in working towards a sustainable school with ESD fully integrated into the curriculum as the driving factor.

Statements of Different Countries about Decade of ESD:

UNESCO: ESD should be interdisciplinary, holistic and participatory, with learning for sustainable development embedded in the whole curriculum, not as a separate subject

<https://assignbuster.com/education-for-sustainable-development/>

Australia: A cross-disciplinary studies and integration of sustainable development in key learning areas that provide opportunities for participation and action

Finland: Sustainable development must be included in all subjects and that the entire operational culture of a school must support learning for sustainable development

The United Kingdom: The integration of sustainable development throughout the curriculum and through the management and operations of school facilities, such as transport, food and buildings

These approaches provide students, teachers, and other staff members with opportunities to be active participants in the learning process.

The whole-school approach: from pilot projects to systemic change : An example of a successful pilot project is the Australian Sustainable Schools Initiative (AuSSI), which is a partnership between the Australian Government, States and Territories that aims to support schools and their communities in becoming sustainable through a whole-system and whole-school approach to sustainability. AuSSI promotes the active engagement of stakeholders in programme development and management, including students, teachers, administrators, and communities. AuSSI started as a pilot initiative in 2001 and recently received government endorsement to expand and consolidate beyond the pilot stage in several States and Territories. Over 2, 000 schools now participate in the Initiative, providing a potential model for other jurisdictions on how to expand beyond the pilot stage.

The International Eco-Schools Programme also takes a holistic, participatory approach to learning for sustainability. The aim of the Programme is to engage students through classroom study, school and community action to raise their awareness of sustainable development issues. Eco-Schools provide an integrated system for the environmental management of schools and involve all stakeholders in this process. After a period of participation, each school participating in the Programme is assessed; successful schools are awarded a 'Green Flag', a recognized eco-label for environmental education and performance. Initially a European programme, Eco-Schools are now represented in almost all European Union Member States, various countries in Central and Eastern Europe, and some pilot projects in Japan and other parts of the world.

Key challenges and opportunities

Time and resource constraints are identified by teachers and school administrators as common barriers to ESD implementation.

Leadership challenges from local government authorities and a consequent lack of institutional support for implementation of ESD in schools.

Studies show gaps in appropriate pedagogy and curriculum development in teacher training, the absence of a positive vision, and a general lack of conviction that individual teacher efforts will really make a difference.

A whole-school approach to ESD presents a significant opportunity for the formal education sector. Not only can it enhance the environmental performance of schools as institutions, but it can raise the quality of education and build a more sustainable future by imparting the values and

<https://assignbuster.com/education-for-sustainable-development/>

tools that today's children and youth will need to build and maintain more sustainable societies. Commitment to change is required from all stakeholders, from grassroots activists to educators to policymakers. Only by working together at all levels can we ensure that ESD moves beyond the realm of pilot projects and individual case studies to a more system-wide catalyst for change.

4. 6 Excursions, School trips and SWOT analysis for ESD

It can be used to gauge the degree of “ fit” between the organization's strategies and its environment, and to suggest ways in which the organization can profit from strengths and opportunities and shield itself against weaknesses and threats (Adams, 2005). However, SWOT has come under criticism recently. Because it is so simple, both students and managers have a tendency to use it without a great deal of thought, so that the results are often useless. Another problem is that SWOT, having been conceived in simpler times, does not cope very well with some of the subtler (Difficult to understand) aspects of modern strategic theory, such as trade-offs (De Witt and Meyer, 1998).

Strengths: To determine an organization's strong points. This should be from both internal and external customers. Strengths arise from the resources and competencies available to the firm.

Weaknesses: To determine an organization's weaknesses. This should be not only from its own point of view, but also more importantly, from those of the customers. Although it may be difficult for an organization to acknowledge its weaknesses, it is best to handle the bitter reality without procrastination.

A weakness is a “ limitation or deficiency in one or more resources or competencies relative to competitors that impedes a firm’s effective performance”

Opportunities: After all, opportunities are everywhere, such as the changes in technology, government policy, social patterns, and