



Module 3: How Does My School Operate Today?

"If we want our students to flourish, to become agents of change, then we must permit them to love the Land before we ask them to save it." David Sobel

Introduction

In this module, our objective is to clearly explain the path towards making a realistic diagnostic for your school and to find out if its philosophy and vision abide by the concept of a Sustainable School. With these tools, you will be able to help your school utilize sustainability as an integrated concept that includes a study plan, operational practices, and even connections with your community in order to make a positive impact that reaches beyond the walls of your school.

Objectives

By the end, the participant will be able to:

- Understand the concepts of *Sustainable School* and *ecological footprint* as the foundations of education for the 21st century.
- Identify the relationship between our individual actions, the environmental crisis, and climate change.
- Know the tools of analysis for evaluating your school under the concept of sustainability.
- Understand the factors and participants related to the operation of a Sustainable School.

- Apply appropriate tools for performing a diagnostic of the environmental impact generated by operating your school.

Themes

1. *The Proposal for a Sustainable School*
2. *Sustainability and an Actual Model*
3. *Evaluation and Diagnostic Tools*
4. *Implications of Change*
5. *The ecological footprint of your School*

1. Educating with a Purpose

Educators play a very significant role in the life of a child, secondary only to parents. Historically, the educator's job has been and will continue to be the fundamental source of knowledge and culture in our societies. Today, however, the challenge is still greater, since we find ourselves at the threshold of an uncertain future. Facing us is the result of having lived with a limited vision, one in which man, inconsistently, has wasted the resources from our natural world without thinking of the consequences. The future then, is still up in the air for the youth of today, and so, now more than ever, we must offer them



the tools for integrating information and available resources about sustainable development. The school is no exception.

Educating for sustainability, is, after all, an opportunity to better the economic, environmental, and social conditions for the generations of today and tomorrow.

2. Understanding Sustainability

An Actual Operational Model in Our School

The concept of sustainable school suggests that all the direct and indirect participants of an educational community study and apply learning tools in order to be part of the solution addressing the challenges of the environmental crisis. Inside the classroom, it maintains that the students develop the capacity to listen, express their point of view, analyze the evidence, work in a team, develop critical thoughts, confront real problems, participate in making decisions, and make informed choices. At the same time, the infrastructure and operation of the educational establishment benefit from attaining better efficiency: reduction in the consumption of energy, water, and materials, and at the same time, produce less waste. Also, the curriculum is enriched because integrating sustainability generates ties between the environment, the economy, and our values.

Environmental psychology studies indicate that the people who are more

informed about environmental issues also tend to be the more involved; for that reason, understanding the environmental impact will motivate students to participate. The sustainable model, in turn, promotes a healthy environment from the outside to the inside, with an eye towards the quality of life for each member of the educational community.

Imagine the positive impact that our vision can have in all dimensions of a school:

In our students

- By reintegrating them to nature, they will assimilate their knowledge and be able to participate dynamically through stimulating the senses and learning actively.
- At the same time, they will discover the influence that they have on their environment and learn their role as members of an integrated whole.
- By succeeding in this capacity, a profound sense of being will develop in them, stimulating their cognitive qualities and well-being.

In your school

- Modifying operative standards will permit them to effectively save resources, energy, and supplies in general.
- Developing spaces and integrated landscapes for education and recreation.



- Getting enthusiastic and proactive participation from the students will be reflected in their academics and their immediate surroundings.
- Producing tangible goals that will offer everyone a feeling of authority and common well-being.

On a personal level

- To be guided by the principle of “care-taking:” I take care of myself, I take care of my neighbor (across cultures, distance, and time) and I take care of the environment (near and far). This helps build a feeling of shared responsibility.
- Cultivates at the individual level our values, abilities, and a feeling of confidence and pride in ourselves upon discovering our capacity to contribute.

In your community

- To serve as a link for our initiatives that include parents and other members of the community.
- To be an agent of change that will be reflected outwards with unlimited implications.
- Increasing the consciousness of the community.
- To establish a feeling of renewed confidence in the student body.

This traditional model of operation in the schools doesn't necessarily make

a direct connection between understanding the operational model's environmental impact and the importance of integrating sustainable development in different educational areas. However, thanks to the strengths implemented and framed by the Decade of Education for Sustainable Development established by UNESCO, today more than ever governmental and educational institutions emphasize this model. It will be the job of directors and teachers to instill these ideas in the new generation of students that, connected to the experiences of their world, understand their responsibility as members of a global community.

2.1 Our actions and climate change

It is important that all the members of an educational community understand the great number of relationships that exist between our individual actions and how those are reflected in the environment, both locally and globally. Perhaps we feel powerless in understanding climate change in all its magnitude, however, our everyday decisions, like improper waste disposal, using transportation and energy in an inefficient way, wasting water, or not being a responsible consumer, have very important implications. In reality, this kind of environmental phenomenon, as you will see in the following chapters, is the result of decisions that have upset the balance of our planet. It is urgent to act on a



new vision, so, for this reason, there is a necessity for a new paradigm.

The sustainability model is slowly penetrating the economic, industrial, and social spheres. Terms like ecology, recycling, alternative energy, and renewable resources, are becoming more common every day and have gained increasing significance. Because of this, the educational realm's enormous responsibility should be to adopt and teach this model to the new generations. In order to do this adequately, the present-day situation of your school must be understood, analyzing all the elements that it comprises, and discovering areas of opportunity and development. So, through a realistic strategy that integrates not only the curriculum plan as the operative and that has attainable short, medium, and long-term goals with the capacity to evaluate and provide feedback, we arm ourselves as an educational community towards sustainability.

3. *Evaluation and diagnostic tools*

In some countries that are advanced in the subject of sustainable education, official programs have been developed and are already a part of an operative model in the schools. Beginning with the analysis of the areas of opportunity, specific medium and long-term recommendations can be made. With a theoretical framework that functions as a conceptual map, it is easier to make adequate decisions

with clear objectives. Next, we present to you an example of these models, created by the English education system, which have been adapted to the characteristics of our land.

TO KNOW MORE... concepts of sustainability.

The New Industrial Revolution is an emerging movement, both profitable and commercial, that eliminates waste, utilizes energy from renewable resources and enhances biological and cultural diversity. It promises to be a production system that will satisfy the desire for economic and ecologic abundance, social equity, both short-term and long-term, and to be sustainable for all generations.

Ecological Intelligence is a product or process designed to contain and represent the intelligence of natural systems: nutrient cycles, the interdependence of species and their habitats, abundance, diversity, solar energy, and regeneration.

From the Cradle to the Cradle is an innovative design paradigm, whose purpose is the creation of industrial techniques that are efficient and that do not generate any waste. The material resources and their results are seen as nutrients that are already technical or biological.

The technicals can be recycled or reused without losing quality and the used biologicals as nutrients (compost). In contrast, the actual production model, called *From the Cradle to the Grave*, refers to the system in which a business makes itself responsible for the disposal of goods (waste, burial of toxic wastes, trash, packaging, etc.) but this doesn't necessarily make their components reusable.

To read more... "Cradle to Cradle" by Michael Braungart and William McDonough / North Point Press, 2002

3.1. **The eight doors of sustainability. Framework for sustainable schools:**

Energy and Water

- Opportunity. The growing demand for energy and water



reduces the supply for future generations. Conserving these resources can address this problem and at the same time save money at the establishment.

- Recommendation. That the schools serve as a model of energy efficiency thanks to the careful distribution and conservation of water and light and through projects that highlight the use of alternative energies, utilizing natural light and learning to harvest rain water to educate the students and the community.

Supply and Waste

- Opportunity. The waste and the culture that sustains it, can be tackled through sustainable consumption. Schools can reduce costs and support businesses that maintain ethical practices in their goods and services.
- Recommendation. That the schools be a model of sustainable supply, using goods and services with high environmental and ethical standards from local sources and improving their economy by reusing, repairing, and recycling as many goods as possible.

Buildings and Open Areas

- Opportunity. The design and operation of a school influences its environmental

performance and its capacity for helping students learn a sustainable way of life. An adequately designed property and administration provides a wide variety of learning and recreational resources that increase the well-being and behavior of students.

- Recommendation. That the schools, new and old, adopt characteristics of sustainable design as much as possible. That their open areas permit students to learn about the natural world and sustainable life with projects like wildlife habitats or gardens.

Transportation and Highway Administration

- Opportunity. The rise in the use of automotive vehicles results in more congestion, roadway accidents and pollution, including carbon emissions. Sharing rides and using public or school transport alleviate these problems, in addition to walking and using bicycles, which benefit health and well-being.
- Recommendation. That the schools be a model of sustainable transportation in which vehicles are used only when it is absolutely necessary and where facilities are offered for using less harmful and healthier means of transportation.



Food and Drink

- Opportunity. An unbalanced meal contributes to obesity and poor concentration in students. Foods coming from healthy sources and from ethical practices offer nutritional benefits while protecting the environment and supporting local producers and commerce.
- Recommendation. That the schools be a model towards providing and promoting healthy food and drink from local and sustainable sources, demonstrating a commitment to the environment, and social responsibility for their food supply.

Inclusion and Participation

- Opportunity. School can promote cohesion in the community to provide an inclusive and welcoming atmosphere that values participation and contribution from everyone.
- Recommendation. That the schools be a model of social inclusion, permitting the students to fully participate in school life and instructing them to have long-lasting respect for human rights, liberties, other cultures, and creative expression.

Local Well-being

- Opportunity. Because of their location, facilities, and

extensive networks, schools can act as incubators for learning and transformation within their communities. The local challenges offer relevant opportunities for student learning and a way to strengthen relations with the community.

- Recommendation. That the schools be a model of an exemplary institutional citizenship within their area of influence, enriching their educational mission with activities that improve the environment and the quality of life for their people.

Global Dimension

- Opportunity. The growing interdependence between countries modifies our way of seeing the world, including our own culture. The answer from the schools is to contribute to an international vision and have a dual responsibility to the students based on the appreciation of the impact that their values and behavior towards global changes have.
- Recommendation. That the schools be a model of global citizenship in order to enrich their educational mission through activities that have a positive impact in the lives of people in other parts of the world.



3.2. Making a Survey

A mechanism of self-evaluation will help create a record and produce the actual efforts needed to carry out your objectives. We suggest that you evaluate the following sections:

- The Characteristics of My School: Local context (location, type of establishment, private or public system, socio-economic level, level of integration with the community, style of learning)
 - Plans and/or aspirations for Development.
 - Physical Environment (infrastructure, type of construction, index of open or green areas, operative and maintenance style, etc.)
 - Participants: Anyone who affects or sees him/herself affected during the decision-making process: students, teachers, personnel, system directors, parents, members of the community and also the providers of the goods and services, natural resources and waste disposal that are essential to the operation.
 - Future generations.
 - Health: Utilization of natural light and adequate ventilation as well as the quality of air in closed spaces. Promotion of nutritious food and exercise for staying in shape.
 - Learning: To look for mechanisms so that the themes of sustainability in real life are integrated into the curriculum and are relevant to the students inside and outside the classroom.
- Personal Development and Well-being: The capacity for cultivating values, tools, self-confidence and to contribute positively to society. Areas of opportunity include a healthy lifestyle, physical and emotional security for the students, a pleasant learning environment, active civility, and getting to know the ways and styles of environmental living as an influence and as a professional option.
 - Educational Quality: Program of study; provides opportunities for development of multidisciplinary abilities necessary for confronting the challenges of today's world.
 - Considers a wide range of thinking abilities.
 - Takes advantage of the school's infrastructure, natural areas, the surrounding area and the local community as an educational resource.
 - Offers active learning in the form of hands-on applications.
 - Concept of sustainability immersed in 4 principal subjects: Geography, Natural Sciences, Civility, and Technology.
 - Leadership and Administration: Recognizes the learning opportunity created through the synergy between the curriculum, the



school, and the community, and their potential to improve every aspect of the institution.

This adequately develops leadership capacity between teachers, personnel, and the educational community to promote a systematic focus towards sustainable development and improvement in the school that are concentrated in one or a few of the following concepts:

- Provision of food: from where it is transported (near or far), nutritional value, from natural or industrialized origin or from the school's garden.
- Adequate use of energy and water: energy and water consumption audits, type of lights, lamps, and devices, use of alternative energies, fixing water leaks, adequate use of irrigation, collection of rainwater in tanks.
- Transportation and highway administration: measurement of the use of alternate forms of transportation and promotion of their efficiency (between students, teachers, personnel) through "shared rides," school transportation, bicycles and walks.
- Sales and waste: measurement of use, reuse, and recycling of paper supplies (paper, ink cartridges, batteries, etc.) Maintenance and cleaning supplies (recycling containers, biodegradable components). Measurement of organic and

inorganic wastes and their final destination.

- Infrastructure: sustainable alternatives, light, and natural ventilation.
- Open-air spaces: green areas as a place for recreation and learning.
- Inclusion and participation: each member of the educational community is taken into consideration and can contribute and develop ideas towards sustainability.
- Local well-being: announcements and internal and external campaigns, associations with other institutions, activities to benefit the community.
- Global dimension: relevance of learning and behavior with a positive impact in other parts of the world.

3.3. Interpreting Results and a Master Plan

As soon as you prepare your survey using the evaluation tools and correct set of questions, you will gain a clearer understanding:

1. Grade the accurate performance in the distinct areas of: excellent, good, satisfactory, first stage. To do this, conduct audits and monitoring.
2. Make a note on the evaluation that responds to the following: homework, desired result (if it was achieved or not and why), how it was carried out, the change that was achieved and the evidence.



3. Identify the more important priorities for development.
4. Maintain a record of the new practices so that they can be converted into routine procedures. Obtaining these results permits you to compare the practices from before so that it's reflected in a tangible form of savings and benefits for the entire educational community.

After elaborating a plan with well-described objectives for the short, medium, and long-term, it is essential to define it for the people who will participate and furthermore, to include in this the adequate communication tools so that this new vision can be shared with all the members of the school. It is stimulating, furthermore, to know that there are numerous external means that offer support for projects of this nature.

Having a list of priorities to develop, it is important to place them in a realistic context, keeping in mind the level of participation of each person involved, with goals and clear tasks and measurable objectives. Try to answer the following questions:
What changes can be made without incurring costs?
What changes can be made within the school's budget?
How can I obtain funds, donations, or sponsorships?
What public or private organizations can offer support?
How can I organize campaigns?

In what way can I publicize the results in order to maintain the incentive of the participants and beneficiaries?

4. Implications of Change

All changes imply effort, commitment, and discipline. To see areas of opportunity as an advantage for improving the future of the educational community through adequate incentive, from the measurement of the results and of a level of proactive communication that generates continuous interest from the participants, are skills that develop with distributed leadership in the different levels of a school. As long as the participation of leaders and project members increases, optimism for converting them into agents of change towards sustainability will also increase. Countless positive examples of schools that have carried out projects with initial limitations and successful ending results exist.

5. The "Ecological Footprint" of your School

The ecological footprint is a tool designed to measure the impact that individually or as a whole we have on planet Earth. For each person, a quantity of Land exists (measured in hectares) necessary to sustain our patterns of consuming energy, food, goods, and also to absorb our wastes and CO₂. Keeping in mind that the earth's surface is finite, and that we share the planet with plants and animals that also require a space to



survive. There are areas over our land's surface that are not habitable, which reduces the total quantity. According to the World Wildlife Fund, the number of human beings that actually inhabit the planet is approximately 6.3 billion. Earth has 11,300 million hectares of productive land. If we divide these numbers, each human being would correspond to 1.8 hectares (the surface of about two soccer fields). This doesn't even take into account other living beings. If every living being on Earth had the same patterns of consumption that people living in developed cities had, we would need approximately 7 planets to satisfy our needs!

The impact that an organism has on the Earth, like the impact a school has, can be measured in tandem with the number of energy-producing fuels and water that it needs to live and also to its consumption necessities of other goods and the form in which we dispose of them. If you use this measuring tool, you will clearly understand the ecological footprint of your school, and in this way, you will gain a better stimulus for reducing it, by way of a modification in its operational practices.

To utilize this methodology, it's necessary to answer a detailed questionnaire that requires the following information:

- Number of students and school personnel.
- Surface area and construction areas.

- General consumption of electric energy, water, gas, and gasoline.
- Consumption of food and bottled drinks.
- School transportation, excursions, and vehicles.
- Consumed good (paper articles).
- Quantity of produced waste and recycled material.

You can find an automatic calculator on the Internet that will help you calculate this formula and that will present the results very clearly. Go to the page:

www.epa.vic.gov.au/ecologicalfootprint/calculators/school/introduction.asp

In conclusion, you can announce the results to your school's community with the objective to initiate improvement projects in different areas.

If you'd like to obtain more information, we suggest the following links:

In Spanish:

www.vidasustentable.org/educadores/B-reducir-huella-del-centro.asp

In English:

www.earthday.net/footprint/index.asp
www.footprintnetwork.org

GLOSSARY



Climate change – Any significant and long-lasting change that a region’s average climate experiences.

Recently, this change has been attributed to human activity.

Nutrient cycle – This is the process of using, transforming, moving, and re-using inorganic and organic molecules through the physical and biological environment. It includes the carbon cycle, nitrogen, oxygen, and water.

CO₂ – Carbon dioxide. Chemical component in the form of a gas that exists in the atmosphere and is produced by animals and plants during respiration and generated by the combustion of fossil fuels.

Global community – Term used to describe all the inhabitants on Earth.

Environmental crisis – The deterioration and destruction of the environment due to factors that are connected to human activity. It encompasses various problems: contamination of the air, water, and land, endangered species, climate change, etc.

Ecology – From the greek “oikos” (household), and “logos” (study of). It is the scientific study of the distribution and abundance of life and the interaction between organisms and their environment.

Alternative energies – Energy sources that are alternatives to using fossil fuels and that have minimal to no environmental impact. Among them: geothermic, solar, wind, bio-mass, oceanic.

NGO – Non-governmental organization. Entity composed of

volunteers and workers with the objective of helping in diverse areas at local as well as international areas of operation

Recycle – To reintroduce waste materials to the production cycle.

Renewable resources – These are the natural resources that are reproduced regularly or faster than their rate of consumption. Some examples: geotherm, water, wood, and bio-mass that should be administered with caution so as not to exceed the environment’s capacity for providing them again. None of the derivatives of fossil fuels are renewable.

Sustainability – The duration of being able to coexist with another ecological system indefinitely, without either system being damaged.

UNESCO – the United Nations Educational, Scientific and Cultural Organization.