

Integrating Education on Sustainability into Teacher's Education

Alicia Jiménez⁵⁷ and Michele Martin⁵⁸



Introduction

The Seychelles National Institute of Education (NIE)⁵⁹ is a post-secondary institution responsible for the training and development of primary- and secondary-school teachers. The NIE administers pre-service and in-service programmes on a variety of subjects, and offers two mandatory⁶⁰ courses in environmental education for sustainability, as part of the pre-service teacher education programme. Professor Michele Martin is one of faculty members in charge of the two courses, both of which use the Earth Charter as a central part of the course curriculum. A crosscutting theme developed in both courses, related to sustainability, is the interconnection between social and ecological problems and their solutions.

⁵⁷ Earth Charter Centre for Education for Sustainable Development at UPEACE, Costa Rica

⁵⁸ Seychelles Institute of Education, Seychelles

⁵⁹ The NIE is located in the Seychelles Islands, an archipelago on the Indian Ocean, northeast of Madagascar. The NIE does not offer a degree in education (in fact, there are not any universities in the Seychelles) yet does offer pre- and in-service training for the nation's primary- and secondary-school teachers.

⁶⁰ These courses were made mandatory in 2003, and had been offered as optional/elective since 1990.

The Seychelles National Institute of Education (NIE) is a post-secondary institution responsible for the training and development of primary- and secondary-school teachers. The NIE administers pre-service and in-service programmes on a variety of subjects, and offers two mandatory courses in environmental education for sustainability, as part of the pre-service teacher education programme. Professor Michele Martin is one of faculty members in charge of the two courses, both of which use the Earth Charter as a central part of the course curriculum. A crosscutting theme developed in both courses, related to sustainability, is the interconnection between social and ecological problems and their solutions.

The two courses are: NEED01 Environmental Education: Principles and Practice, and NEED02 – Issues in Environmental Education. The objective of NEED01 is to introduce the principles and practices of environmental education, mostly through group work in the classroom using experiential learning methods and hands-on activities. The objective of NEED02 is to provide an opportunity for students to plan and implement an independently designed community service project, thereby putting theory into practice.

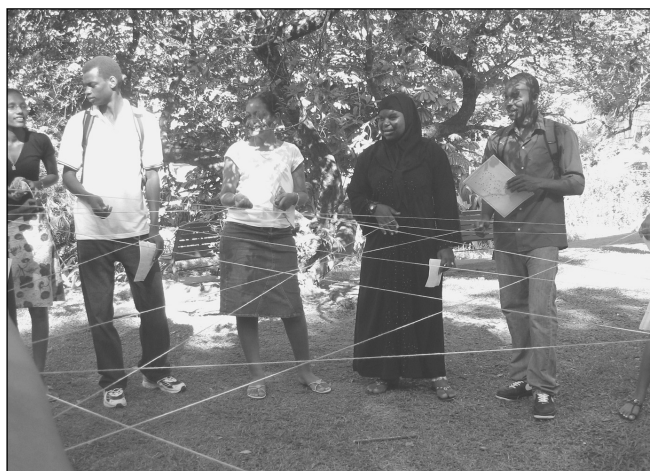
Both courses are offered three-hours per week for nine weeks. The participants are student teachers, mostly young women between the ages of nineteen and twenty-one years old. Approximately 120 students from a variety of disciplines take these courses each year.

Methodological aspects

Course objectives and the role of the Earth Charter

In the NEED01 course the focus is on environmental concepts and principles (with reference to international charters and treaties), local environmental education policy, resources for teaching and learning, and in-classroom teaching strategies. Much of the focus is on pedagogy, emphasizing student-centred and experiential learning.

The Earth Charter plays an important role in this course. It is used as a tool to help the students understand the connections between environmental and social issues, and the need for environmental education to incorporate these connections. Michele notes that because the courses are mandatory, that not all students enrolled are particularly interested in environmental issues. Instead, many are more interested in humanitarian issues, such as poverty reduction, and human and gender rights. However, the Earth Charter provides an entry point to pursue their passions for social issues, and then to start understanding that ecological and socio-cultural problems are interrelated.



Activities in course NEED01.

The class spends one three-hour lesson discussing and reflecting on the Earth Charter. They use different methods to analyze and internalize the Earth Charter; one of the most common is to summarize one of the principles and present it to the rest of the class in the form of a drama, song, poem or drawing. (See Box 4). This has been a very effective process and the Earth Charter's aspirations serve as a framework for defining environmental education. During their teaching practicum, NEED01 students must also integrate environmental education into one of the lessons they teach, and are asked to relate this to the vision of the Earth Charter.

Box 4: The Earth Charter, interpreted by class DPT3A**Preamble**

The protection of the environment is everybody's business.

The earth is a home for all living things.

One mistake from us can destroy us all.

Together we can overcome the challenges that may arise.

It's our duty to protect the environment in any way we can!

Respect and Care for Life

Every form of life is precious.

Accept them and prevent them from harm.

Promote peace and harmony in the community.

Give opportunities to fulfill our rights.

Preserve our environment for the future.

Ecology is Life

Let us protect it, safeguard it.

Do not abuse its resources.

The future generations need it.

Educate them and live longer.

Social and Economic Justice

We all have the right to life.

Water, clean air, food, shelter, and safe sanitation are what we need for healthy living.

We, human beings, let's unite with power to bring reality to our human needs.

Democracy, Non-violence and Peace

Boom!

That must be the sound of a bomb.

It's violence time!!! Run everybody!

Oh dearest Peace,

Save our souls from violence.

Come and help us

live in justice and harmony.

The NEED02 course is more action-oriented; the class explores local socio-ecological problems through community service-learning approaches. The students used to receive a standard set of local issues to choose from – such as waste, deforestation, habitat loss – but the course has been redesigned so that students now

choose their own area of interest. The projects students have chosen focus on a range of ecological, social and cultural issues. The Earth Charter is used as a basis for the actions of students' community service projects, which are framed in terms of how they work towards fulfilling the vision of the Earth Charter. Students select and then research a local problem (issue), identifying the relevant part(s) of the Earth Charter to which their project corresponds. In their final report, students must explain the relationship between their project and the Earth Charter.

Description of teaching and learning style

In the NEED01 course, the content and issues discussed are mostly set by the NIE. Student participation is promoted through hands-on learning, group work, field trips and learning and teaching games.

In NEED02, students are more involved in deciding on which issues to focus. In the third week of class, students choose their group members and then each group selects a different socio-ecological issue to explore. After deciding on what issue to focus, the students practice pedagogical approaches in their research and discussions, such as a problem-solving focused community service-learning method. In addition to identifying and researching their issue, groups are responsible for deciding on possible actions they could take to address or help solve their issue or problem, and then evaluate and report on their work.



NIE Clean up campaign - Course NEED02.

This problem-solving method is very helpful to enhance the students' experience with an experiential learning process. The NEED02 students go through the process of planning and implementing a service learning project so that later, as teachers, they will know how it works and how they might use this approach with their own students. Throughout the learning process, students have opportunities to share what they are learning and doing during the course with each other and their course teachers.

An important thing to take into account when using hands-on and community service-learning methods is that there is a tendency to focus solely on local issues. In her courses, Michele deals with this tendency by making efforts to make deliberate linkages to local issues' global context and to bring what is happening in other countries into the classroom.

In addition to using the community service-learning method, Michele Martin combines a variety of teaching strategies and methods in her classes – group work, discussions, field trips, games and visual arts. The following are descriptions of some of the techniques that Michele uses in her teaching.

Visual brainstorming

This exercise helps to address the meanings and connections of different concepts. For example, Michele uses it to help students analyze the wide range of potential meanings of the term 'environment.' Students come up to the classroom blackboard and use coloured chalk to create a drawing of what the word brought to mind. The result is a rich visual image that provokes critical discussion on what students included and what was left out – often more effective than using words.

Role play

This activity simulates a type of 'council of all beings' that focuses on a specific environmental issue. Students choose a variety of human and non-human roles to express their feelings, and the challenging situations they face in real-life.

Field trips

It's important to go outside. In NEED01 students spend a couple of sessions focusing on learning outside the classroom; sometimes it's simply to go outside under a tree to present group-work, and sometimes it's more involved, such as exploring their nearby environment. Students have undertaken environmental audits of the school's grounds, explored the living things found within the school compound, toured the environmental education resources available in their library and at the environmental education unit at the Ministry of Education next door, and have visited the local dump site. For the teachers, using the UNESCO/UNEP CD *Teaching for a Sustainable Future* has proven to be very helpful to plan and implement these types of activities.



Field trip NEED02 course.

Sometimes the students participate in choosing which places to visit (these can coincide with their research projects), and sometimes the teacher decides, especially when students are not familiar with the local area, and when certain field trips would be of particular benefit to their teacher formation process. In NEED01, students complete one full-day trip, either to visit another island, or to visit a natural area on the main island (where NIE is located). In NEED02, students also tend to go on additional field trips on their own, often to advance their research projects.

Games

Students are introduced to games, such as those from Joseph Cornell's *Sharing Nature with Children*, and "Woolly Thinking" in *Global Teacher, Global Learning* by Graham Pike and David Selby; which, in Michele's opinion, is a particularly excellent resource and relevant to the Earth Charter, for example, GloBingo. She also uses a variety of local resource materials (See Box 5).

Box 5: Education resources produced in Seychelles

Beaver, K. & C. Morel. (2003). Learning for Sustainable Living in Seychelles. Mahe: Nature Seychelles. (available at www.natureseychelles.org)

Martin, M. (2001). *Birds are brilliant! Activity guide for primary teachers*. Seychelles: BirdLife Seychelles.

Martin, M. (2000). *Guide to the wildlife of Cousin Island*. Seychelles: BirdLife Seychelles.

Martin, M. & M. Gara (1999). *Coastal and marine activity book*. Seychelles: Wildlife Clubs of Seychelles.

Martin, M. (1994). *The little green book for schools*. Seychelles: Ministry of Education and Culture.

Seychelles Ministry of Education (1994-present). *Enviro-News: Seychelles' environmental education newsletter*.

Tirant, M. & M. Martin (1996). *Environmental education for sustainable development: activity guide for primary teachers*. Seychelles: UNESCO / Seychelles Ministry of Education and Culture.

Interaction between teacher and learner

Given the methods used in her classes, Michele does not spend much time lecturing. Her role is more like a facilitator of information and of the exchange of ideas and she gives students many opportunities to practice being 'active thinkers.' One way she promotes critical thinking is by asking

students to do critical reflections at the end of each class, whereupon they write about what they liked and learned and didn't like about each session, and why. In this way, students are challenged to think actively and critically, and to express their own beliefs.

There are other ways students are involved in making decisions during the courses. In NEED01 Michele asks for class input on a field trip site and in NEED02 students choose which issue they will research, and which solutions and actions they will take. One example of student decision-making that impacted the course was one group that decided to bring all of their projects together and hold an "environmental festival" at the NIE.

Inclusion and application of values

Although these courses are not explicitly values-driven, values certainly play a key role. The courses focus on pedagogy and are designed to help student teachers learn to integrate environmental, social and economic aspects into their subjects once they get into the school classroom. The courses provide opportunities for students to examine their own values and reflect on what kind of a teacher they hope to become. The courses also provide opportunities for students to think about their passions and to try to bring them into their teaching. The Earth Charter plays a key role in these courses, and getting familiar with the Charter's values and principles allows teacher and students to deepen their understanding and reflection on sustainability.

Evaluation of student performance

The NIE requires that students be assessed based on two major assignments. In NEED01 students are assessed on a lesson they give on teaching practice, and their critical reflections afterwards. The other assignment is a student's portfolio (journal) of critical thinking exercises. In NEED02, students are assessed based on their environmental education portfolio, which includes weekly critical reflections, an environmental autobiography, and a self-evaluation. The other assignment is their group service-learning project; students are assessed on

their project plan, the action they take, and a final report.

Actions and results from the learning process

In 2007, the NEED02 students organized an environmental festival which included displays designed by students to depict and describe what they had learned and achieved in their project, hands-on workshops and a variety show. The Earth Charter was the organizing framework for the projects and the festival. The festival featured six student projects on various topics: invasive plants; medicinal plants (especially natural contraceptives); paper waste; packaging waste; promoting local, homemade drink and food alternatives to store bought (i.e. juices, snacks); and traditional Kreol musical instruments. Students also reported on actions their group had taken, including removing invasive creepers, and organizing a clean up in a particular area to reduce the rat population. The event opened with an exhibition, then workshops, and closed with a variety show that included poems, songs, dances, traditional music, and storytelling – all performed by students. The NEED02 students invited students from other schools to attend the festival, and many schools sent student delegations.

ecological ones; however, the opposite is also true, especially among younger students. The Earth Charter provides a great and unifying vision that has helped her broaden her students' focused interests.

When beginning a process for educating for sustainable development, Michele notes that it is important to be sensitive to, and take into account, each student's interests. She uses the Earth Charter to help students come to the understanding that social and ecological justice issues are deeply intertwined – problems, causes, consequences and solutions. **According to Michele:**

By letting my students start with social justice issues and then work on interconnections, I (and they) have found that they do actually care about environmental issues, and they do want to do something. This realization came out as a fairly strong theme in the NEED02 students' own self-evaluations.

Using integrative approaches to education helps promote holistic-thinking in students and makes the educational experience as inclusive as possible. At the NIE there is a continual learning process to keep improving teaching practices, and students' feedback is of great importance to that process.

Lessons learned

One of the limiting factors in promoting Education for Sustainable Development has been that while teachers are often asked to include aspects of sustainability in their classes, many of them have not been trained to do so. The NIE is working to address this situation by including two mandatory courses on environmental education for sustainability in their pre-service and in-service teachers' education programme.

Michele Martin, teacher of the NIE's environmental education for sustainability courses, has found that it is not always easy to address all aspects of sustainability in class because students often have different interests and passions. She has found that many of her students are more passionate about social justice issues than

Contact information:

Michele Martin
Seychelles National Institute of
Education

Email: martinzanlwi@yahoo.com