Teachers' Guide
for Education for
Sustainable
Development
in the Caribbean

UNESCO

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Although in recent years Latin American and Caribbean countries have significantly strengthened their economic indicators, they have not progressed at a rate that will ensure attaining - by 2105 - *the Millenium Development Goals*. Across the region, it is still possible to find populations with markedly unequal opportunities to access education, remain in school, and do well. This, points to the need for improving the design of public policies and implementing specific actions in this area if we are to attain a quality education for all. The region must make the leap that entails going from equal opportunity in terms of access to education, to equal opportunity in terms of receiving a good quality education and showing solid learning achievements.

Education must effectively empower all people to make responsible and informed decisions, both individually and collectively, thus preparing them to successfully deal with present and future challenges and to commit their active participation in the construction of common future for all.

The Regional Bureau for Education in Latin America and the Caribbean (UNESCO Santiago) has played an important role building awareness and rallying all actors concerned around education for sustainable development. To further this end, the Organisation is promoting changes with the potential to enhance the quality of life of present and future generations through the reconciliation of economic growth, social development and the protection of our natural environment. Clearly, education is the key instrument to bring about the social change required to make us aware and supportive of the objectives of Education for Sustainable Development at an individual and collective level. This why the United Nations Organisation has proclaimed the Decade of Education for Sustainable Development, an initiative that opens a new window of opportunity for placing education at the very centre of debate, and identifying solutions that may ensure a sustainable future for all.

The publication *"Teachers' Guide for Education for Sustainable Development in the Caribbean"* is geared towards regional teacher-trainers and teachers active at every level of education. Its purpose is twofold: contribute to the integration of education for sustainable development into teaching practices through education initiatives, originally implemented in the Caribbean that may be feasible to replicate in the various classrooms, schools and communities; promote reflection, discussion and creation of innovative practices that involve all teachers in Decade activities and contribute to the making of sustainable societies.

This document illustrates how different wills can come together moved by a desire to materialise common projects. Thus, this effort represents the work of regional specialists working in close cooperation with UNESCO Regional Bureau for Education in Latin America and the Caribbean, as well as the financial support of the Government of Japan.

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While Latin America and the Caribbean have made important strides in the field of education, we must acknowledge the fact that profound equity gaps still affect the regional education systems. In many instances, educational proposals have not only failed to reverse this trend, but in actual practice, have deepened it. Overcoming this state of affairs requires reflecting on the meaning, purpose, content and practice of the type of education being currently imparted to children, youths and adults. Only thus, may education become a tool that will lead to change and the construction of a sustainable future.

Within this framework, United Nations proclaimed the *"Decade of Education for Sustainable Development (2005 – 2014, DESD)* and designated UNESCO as its lead agency. The goal of the Decade is to integrate the values of sustainable development into all aspects of education and learning and into every modality of education, whether formal, non-formal, or informal, with a view to encouraging changes in attitude and behaviour that will create more sustainable and fairer societies through national, regional and global efforts.

In order to meet the Decade objectives and ensure that all children and youth in the region will attain the knowledge, skills and abilities required for a full and active citizenship, the Regional Bureau for Education in Latin America and the Caribbean (UNESCO Santiago), launched the Project *"Promoting Education for Sustainable Development in Latin America and the Caribbean",* of which this publication forms a part.

The book *"Teachers' Guide for Education for Sustainable Development in the Caribbean"* signals the concretion of a joint collaboration effort of high-level researchers of the English-speaking Caribbean, the Regional Bureau for Education in Latin America and the Caribbean (UNESCO Santiago), the UNESCO Cluster in Kingston, and the financial cooperation of the Government of Japan.

This book aims to integrate Education for sustainable development into the classroom practices of teachers, thus promoting the shaping of a fully committed, aware and informed citizenry, capable of creating a new world that is more equitable, environmentally-oriented, and culturally and socially sustainable.

Education for sustainability must embody a commitment to values, principles, attitudes and behaviours and, more specifically, to a clearly understood notion of justice and equity. Naturally, teachers and learning communities are key components in the dissemination of those sustainability principles that will lead to the necessary changes in attitude.

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Presentation

Welcome to Education for Sustainable Development. We hope this book will give you a snapshot of some of the ways through which you could bring in Education for Sustainable Development (ESD) to your classroom, school and community. As the United Nations Decade of Education for Sustainable Development 2005-2014 (http://www.unesco.org/education/desd) progresses, ESD is creating innovative inroads into schools and classrooms in the Caribbean. This book describes some of these approaches to ESD that are presently being explored and undertaken, hoping that they will stimulate and inspire you to join the growing movement for ESD.

Education for Sustainable Development is an approach to teaching and learning "that seeks to empower people of all ages to assume responsibility for creating and enjoying a sustainable future."[1] It "prepares people of all walks of life to plan for, cope with, and find solutions for issues that threaten the sustainability of our planet," and encourages "changes in behaviour that will create a more sustainable future."[2]

This definition may sound rather ambitious and daunting, but in fact, as you will see by reading the chapters in this guide, many teachers in the Caribbean are doing ESD even if they may not call what they do ESD.

ESD is not a completely new educational framework. To put it simply, ESD promotes five types of learning as the basis for fostering sustainable development. These are:

- Learning to know
- Learning to do
- Learning to live together
- Learning to be
- Learning to transform oneself and society.

You may have already heard of the first four types of learning. They are the Four Pillars of Education presented in 1996 by the UNESCO Task Force on Education for the Twenty-first Century. ESD adds one pillar, "learning to transform oneself and society," to meet challenges unforeseen before.

This guide is not meant to be an instructional manual; rather it is designed to provide you with a sense of direction as to how you may be able to start doing ESD from tomorrow. Please relax and start your reading from any of the six chapters that interests you.

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[1] UNESCO, Education for Sustainability—from Rio to Johannesburg: Lessons Learnt from a Decade of Commitment, 2002.

[2] UNESCO, United Nations Decade of Education for Sustainable Development (2005-2014): International Implementation Scheme, 2005.

In Chapter 1, which concerns "Learning to be," Winthrop Wiltshire discusses how a teacher can be an agent for change toward sustainable development. Teachers need to feel good about themselves as well as praise and validate students in order to assist students to be emotionally secure and self-confident, to respect themselves and others, and to take full responsibility for their actions.

Chapter 2 speaks to "Learning to live together." Here, Grace Chapman shares her expertise in enhancing the learning experiences of students with special needs through creative arts, such as drama, dance, music, art and puppetry, toward making the school, community and society an inclusive whole.

Moving outside of a particular discipline is critical in ESD. This does not mean that a new course or subject on sustainable development has to be added to the curriculum; rather it is about integrating and weaving ESD concepts into existing curricula, as Lorna Down describes in Chapter 3 through her experience of "infusing" ESD in the teaching of Literature.

The leap from "knowing" to "transforming society" may not be a simple step, but Anthony Griffith shows us a way as he describes Community Service Learning, a Social Studies method, in Chapter 4. It discusses a process to connect what is being studied in a classroom with a specific activity that meets a clearly identified need in the community.

Sandwatch discussed in Chapter 5 by Gillian Cambers is a specific example of an approach that integrates the five types of learning for sustainable development. In Sandwatch, focussing on the beach environment, students work together to monitor and critically evaluate the problems and conflicts facing their beach environments, then to design and engage in activities to address some of those issues for change.

As you explore innovative activities to bring ESD to your classroom, ICT (information and communication technologies), such as computers and the Internet, can be of great support to grow and develop your project. In Chapter 6, Paul Diamond shares some of the ways in which he utilizes ICT to involve students in activities and expand and sustain a project.

We hope you will enjoy reading the different chapters.

Gillian Cambers; Grace Chapman; Paul Diamond;
Lorna Down; Anthony Griffith; Winthrop Wiltshire, and Ushio Miura.

Chapter

1

Empowering Teachers with Emotional Coping Skills to Promote Sustainable Development

Winthrop Wiltshire

TEACHERS: A KEY IN AND FOR SUSTAINABLE DEVELOPMENT

Development is a holistic process in which a people systematically enhance their capacity to solve their own problems while promoting their cultural, social and economic well-being. Sustainable development occurs when this process is conducted in a manner that can be sustained over the long term.

It is evident that adults, particularly those in decision making positions in government and industry, have a fundamental role to play in determining whether development is sustainable. What is not necessarily that obvious is that every citizen, through his or her individual choices and actions, has a part to play in this determination. In order to have development that is sustainable, all citizens need to function responsibly and with awareness.

It is usually stated that young people are the future. What can be easily overlooked is that they are also the present. Their actions now also contribute to the issue of whether sustainable development is being achieved. When a young person feels emotionally secure and self confident, learns to take full responsibility for his/her actions, respects self and others, trusts his/her own thinking and respects the opinions of others even when different from theirs, and fully respects individuals of different cultures, she or he is likely to behave in socially responsible ways. These socially responsible behaviours are essential to sustainable development. It is very difficult for a young person to feel emotionally secure and self confident if that person is subjected to constant invalidation or other forms of mistreatment whether at home or at school.

Teachers play a key role in the appropriate socialization of young people for sustainable development. It is important that, irrespective of the academic subject matter for which a primary or secondary school teacher is responsible, the teacher's major overall responsibility be seen as the moulding of socially and emotionally well-adjusted individuals. The teacher needs to assist the young students to feel good about themselves; to be emotionally secure and self confident, to respect themselves and others, and to take full responsibility for their actions.

However, it would be difficult for teachers to function in the nurturing and validating manner required for promoting such qualities in young people in their charge, if they themselves do not feel good about themselves and possess these attributes. But it is not unlikely that when they themselves were young, either their own parents or teachers were unaware of this important dimension of their respective roles.

To equip teachers to function effectively for the appropriate socialization of young people, the workshop programme 'Empowering Teachers with Emotional Coping Skills' has been developed, within the context of the UNESCO Participation Programme, in collaboration

with the Trinidad and Tobago National Commission for UNESCO and the Trinidad and Tobago Ministry of Education (see Appendix for the details of the workshop programme). This chapter presents some guiding points formulated through the programme for teachers to understand better their own actions and reactions in and out of the classroom as well as their key role as powerful agents of change.

UNDERSTANDING EMOTIONAL HURTS AND IMPORTANCE OF PRAISE

I believe that the natural state of every child is that she/he loves to learn and is potentially brilliant. Strange as it may seem, there is no problem child. It is never desirable to define a child as his or her inappropriate behaviour. Once you as the teacher negatively label the child, you considerably reduce your ability to exert a positive impact on that child's life. Show me a child who is behaving very disruptively and I can show you a child who has received serious mistreatment, usually at home, but sometimes in the school environment. Such a child through the disruptive behaviour is actually crying out for help. Mistreatment of the young by adults comes in many forms. Serious invalidation of a young person could constitute a hurt.

A teacher recently shared with me in one workshop that she still feels aggrieved by an experience when she was a young student when her teacher called her a monkey. We all are aware that many young persons at home are subjected to much more serious forms of mistreatment by parents who suffer from deep emotional scars themselves. All of us have also experienced hurt in some way as young persons. If we were fortunate enough at the time of the hurt to have been given enough attention and support of adults around us to release the emotional pain resulting from the hurt, then the probability of lasting negative effects from the experience of distress would have been minimized.

That was very often not the case, and many adults are carrying around emotional scars from youth, which are affecting their daily functioning.

When we explore the nature of emotional hurt and its long term effects, not only are we better able to understand our own actions and reactions, but also the actions and reactions of others. Much of the time when we get upset or feel emotional in any given situation, the feeling can be traced to the unaware triggering of some early distress experience encountered in our youth. This phenomenon of the unaware triggering of some early distress experience by a current situation, which has some features similar to the early experience of hurt or discomfort, is known as restimulation. This restimulation usually results in inappropriate behaviour.

A personal experience exemplifies this phenomenon: When I was eight years old, my mother suddenly became very ill and had to be rushed to hospital. I was terrified at the possibility of her death. After several weeks she recovered fully and returned home. As an adult whenever my mother became unwell, I used to be thinking that she was merely craving the attention of her offspring, and that she was not really ill. It was only recently that I became aware of what was happening within me when she showed signs of illness. At a subconscious level, I was feeling the anxiety that I had originally experienced when the initial traumatic event occurred in my childhood.

When we are able to recognize our own emotional baggage, we can more readily function from our centre, and additionally not become restimulated by the behaviour of others resulting from their emotional baggage, however inappropriate that behaviour might be.

Young people thrive on praise and validation. Many of them do not receive it at home. Praise and validation tend to have the effect of having the recipients feel good about themselves, and create a positive climate for learning. When the teacher develops a culture of praise and validation, it makes a big difference not only to the individual students but to the general way that the students relate to the teacher. It is possible even to validate a student who is exhibiting the most inappropriate behaviour while still ensuring that the child is held totally responsible for the inappropriate action. It is also desirable to praise the student not only for success but also for effort.

Oppression occurs when one group in society is systematically mistreated by a more dominant group. Internalized oppression occurs when the group that has been subjected to the mistreatment accepts as valid the misinformation about themselves conveyed by their oppressors. Such was the case of the majority population in the Caribbean of African origin whose ancestors were enslaved and were made to feel that their religious beliefs and practices and other customs and values were inferior to those of their oppressors. Many adults exhibiting effects of internalized oppression still talk about someone with 'good hair' or a 'good complexion' to represent children of African descent whose hair texture or skin colour is close to that of their European counterparts. We have all been conditioned by our early socialization. Teachers must examine themselves to see if they carry traces of internalized oppression. When they do, it impacts negatively on their young charges.

RE-THINKING OUR PERSONAL PARADIGMS

Our personal paradigms, our belief systems which we seldom subject to question, play a dominant role in determining how we experience life. It is therefore very useful to examine our paradigms to determine whether or not they are serving in our best interests, and whether we need to change them, because often when we change our personal paradigms, our experience of reality changes. Let us look at three emotional conditions that we daily experience: stress, worry and anger.

Do we have to experience so much stress?

How nice it would be if we could all function without stress in our lives!

One paradigm that many hold to be true is that stress is out there and we very often encounter it. It is useful to recognize that stress results from a feeling of being overwhelmed by the situation being encountered. An alternative paradigm, by which anyone can choose to function, is that challenges are routine and how we approach each challenge will determine whether or not we experience stress in any given situation. This leads to the liberating conclusion that STRESS IS OPTIONAL. Here I am not speaking of the momentary stress that results, for example, from the sudden attack of a ferocious dog. I am speaking about the continuous feeling of being overwhelmed in a given situation. It is empowering to recognize that we can always exercise the choice to remain calm and centred no matter what circumstances we might be encountering.

Why worry?

Another paradigm in a similar vein has to do with the nature of worry. One paradigm which many hold is that worry happens and is normal. An alternative paradigm is that worry is a powerless choice and is totally avoidable. Although many people worry, it is my experience that so many who do worry are not fully aware of precisely what they are doing when they worry.

All we ever have is the present moment. The past is gone forever; the only thing that can be changed about the past is your attitude to it. The future is not yet determined. In the present moment, which is all there is, we have the option of functioning powerfully or powerlessly. You are functioning powerfully when you are maintaining your emotional centre and functioning in a manner that does not disempower anyone else.

In the present moment we make choices continually, but many of these choices are made without awareness. It may be surprising to recognize that every thought is a choice. Situations that we encounter fall into two broad categories, namely: those that we have control over and those that we cannot control. We have absolutely no control for example, on whether or not it will rain on a given day. We have total control on what clothes we choose to wear to go to work, or what tone of voice we use to reprimand a particular student who is disrupting the class.

What follows can be considered as the dynamics of worry: We create a thought of some perceived negative or unwanted outcome. We then focus on that thought in fear and in powerlessness. Worry can therefore be defined as 'wallowing in fear and powerlessness in relation to a perceived negative or unwanted outcome.' One obvious fact is that worry never

has a positive impact on the outcome. If you have a problem and there is a solution, why worry? Worry is always a futile choice. Relaxed concern is different from worry. It enables you to identify and act on factors within your control that might have an impact on the potential outcome. Once these concepts are grasped, then with practice, it is feasible to rid oneself of the powerless habit of worrying.

When you, the teacher, are functioning in this way without stress and worry you are not only doing yourself a favour, you are also in a better position to function in a nurturing validating way towards young people.

Do I have to get angry?

One commonly held paradigm is that other people can get you angry. In actual fact, anger is always a choice, although very often an unaware choice. Anger is usually a reaction to someone else's behaviour. One factor always within your control is your choice of reaction to any situation. One choice is to remain calm and centred even in the face of very inappropriate behaviour by others. A useful tool is to develop the practice of consciously taking a few deep breaths before responding in a situation where hitherto you would have become angry.

Inappropriate behaviour can always be challenged or interrupted without losing your cool.

TEACHER AS CHANGE AGENT

Teachers face many challenges. There is often the problem of overcrowded classrooms and students exhibiting disruptive behaviour. One easy choice is for the teacher merely to rely on her or his authority to maintain order through fear of sanctions. Another option is for the teacher to strive to create a validating nurturing classroom environment, in which every child is treated with complete respect even when that child is behaving inappropriately.

Teachers are powerful agents of change in the lives of young people. Focusing on the moulding of well-adjusted young people whatever the subject matter being taught not only benefits the students, it also makes the job of the teacher easier. Earlier we talked about factors within and outside of one's control. One factor totally within the sphere of control of teachers is their attitude towards each student, even to the ones who give problems. Teachers who function in a nurturing validating way will reap great rewards in terms of class behaviour and student receptivity.

One important point always to remember: BE GENTLE WITH YOURSELF! You can only do your best and no more. It is not possible to save every child who has problems. So resist the temptation to beat up on yourself or to agonize over some action of yours towards any student that on reflection you deemed too harsh, or not validating enough. All you ever have is the present moment. Tomorrow is another day. Choose to do it differently when a similar situation presents itself.

Education for sustainable development has many facets. A critical one which has been treated in this chapter is the importance of nurturing young persons in such a way that they would be predisposed to functioning in socially responsible ways now and in the future when they become adults. Although parents have a key role to play in this regard, teachers of primary and secondary school students have an equally important part to play in producing socially and emotionally healthy young people. Empowering teachers with emotional coping skills is one mechanism for equipping teachers to effectively perform this key task.

Useful questions to ask yourself:

- Why am I choosing worry? What can I do to avoid the outcome that I am fearing?

- Why am I choosing to feel stressed? Is there something that I can change in this situation?

- What is triggering my desire to be angry? What other choices do I have to respond to this situation with integrity? Who can I call on to help me blow off some steam?

- Am I creating a positive nurturing environment in the classroom?

- Am I remembering to validate my students for effort?

- Am I remembering to be gentle with myself?

Appendix

Workshop programme

In the initial two-day workshop which is conducted in a participatory manner, teachers are asked to keep an open mind. They are requested to consider the possible validity of paradigms, which might be different from the ones they usually hold to be true. The nature of stress, worry and anger are explored as well as ways in which feelings have an impact on behaviour. They participate in listening partnerships to learn the technique of nonjudgemental active listening. To emphasize the critical importance of validation, teachers are requested at the end of day one to conduct a homework exercise by validating someone by saying: "John/Jane, one thing I appreciate about you is…" The last exercise in the workshop involves a role playing exercise in which groups of teachers compose and act a classroom scenario. In the follow-up one-day workshop, teachers are invited to discuss how they are functioning differently and what they observe in the behaviour of their students. A review is also done of the themes previously explored.

Specific themes explored in a typical two-day workshop in Trinidad and Tobago included: the true nature of worry and stress; the critical role of choice in the experience of personal reality; the characteristics of the emotionally healthy human; the impact of feelings on behaviour; how early experiences of emotional distress can result in long term emotional scars affecting the use of one's flexible intelligence; the concept of restimulation; the powerful positive effects of validation and conversely the negative effects resulting from invalidation of young people; the power of the teacher in influencing the self image of the child either positively or negatively; oppression and its derivative, internalized oppression, and the effects of the latter on personal attitudes and behaviour; the true essence of the role of the teacher; the critical importance of not labelling a child exhibiting problems as a problem child; the use of the syllabus as a tool and not as a weapon; the distinction between discipline and punishment; the beneficial effects of learning the technique of active listening.

The following gives a summary of selected reports from teachers who participated in the workshop:

Teacher A: Since the workshop session, I have been practicing to remain calm and centred in the midst of potentially upsetting classroom situations. I've also been practicing not to take things personally. I have noticed that my charges really feel at ease and 'at home' when they are with me. This feeling of security is even extended to those who have gone on to another class level. I've also noticed that the members of staff have really made great efforts at fostering the camaraderie among one another.

Teacher B: Since the initial workshop, I focus my attention on shy and withdrawn pupils. I interact with them more and call on them regularly to help out in the classroom. I've noticed that my pupils are more outspoken. I have seen in these particular pupils excellent results in their end of term examination. I am most impressed with one such student who made 100/100 in a Mathematics examination. She scored higher than the boy who always comes first. All my pupils make an extra effort to do something special for me everyday.

Teacher C: I have become more aware of my attitude to different situations, and especially when dealing with others. I think I understand myself a little more and I understand better others who I am in daily contact with. This session was very enlightening. It reminded me of a number of things that I had forgotten. This session has renewed my zest.

Teacher D: I am validating my pupils more often, both on an individual and group basis and I'm worrying less. My students seem to be less stressed and a lot happier. They speak out more. My boys are a lot less disruptive and more overtly caring. A wonderful experience that should be done annually. Very liberating and refreshing. Parents should be given a similar facility.

Chapter

2

Creative Arts Strategies for Educating Children with Special Needs

Grace Chapman

Education for Sustainable Development (ESD) addresses the need for improvement in the quality of education for all children. Its goals include access to quality education for all children, including those with disabilities, that is characterized by interdisciplinary and holistic learning, arising from value-driven, fully participatory and locally relevant teaching methodologies. The focus of this chapter is an innovative approach that employs the full panoply of the creative arts to promote literacy and achieve these ESD goals based on the well established premise that all learning is interrelated, and that innovative application of these teaching strategies can play a vital role in achieving many of the objectives of ESD for students with special needs in the Caribbean.

In the Caribbean, the "inclusion" policy for students with special needs -that any child with a disability is entitled to receive their education in a general school with students who do not have disabilities- is effectuated by default in many areas due to limited access to special education schools. Unfortunately, for the parents who choose to "mainstream" their special needs child, the general education environment is ill suited or not set up resources-wise to accommodate the special needs student, leading to frustration, non-achievement and high dropout rates. Furthermore, many of the special education schools in the Caribbean are experiencing enormous difficulties in providing the desired quality education to their students, and would be hard pressed to achieve the goals of ESD in the present circumstances.

We know that students with special needs receive and process information in a variety of ways (i.e., some are visual learners, some aural, some traditional linear thinkers, while others begin at unorthodox points with kinetic approaches, etc.). As such, it is important to note that creative arts strategies provide multiple pathways for the special needs teacher to manage a diverse classroom by (I) ascertaining how each special needs student learns, (II) helping them discover their unacknowledged capabilities, (III) expanding their strengths and diminishing their weaknesses.

The arts centered approach described here provides methodologies for an enhanced learning environment that enables teachers to provide the enhanced learning experience that can achieve the objectives of ESD in the special needs classroom as well as the integrated general education classroom that includes special needs students. It is based on a series of workshops held by the author at special education and general education schools in several Caribbean countries in 2004 and 2007, including The Dunnattar School in St. Lucia; Every Child Counts Learning Center in Abaco, Bahamas; Eliza Simons Primary School in the Turks & Caicos Islands; and The Linden Center for Handicapped Children (LCHC) in Guyana. The teaching methods discussed in this chapter are set up in three main sections.

I. **Creative Arts in the Classroom:** Drama, Dance, Music, Art, and Puppetry – expanding on Puppetry in particular;

II. **Teaching Strategies in the Classroom:** Projects and activities;

III. **Learning Beyond the Classroom:** Suggestions for promoting learning outside the classroom and greater understanding in the larger community.

CREATIVE ARTS IN THE CLASSROOM

Key Area 1 - DRAMA

For our purposes here, drama can broadly be regarded as (a) the art of composing and/or performing a monologue, or poem; and (b) writing, acting in and/or producing a play, usually involving conflict and emotions exhibited through action and dialogue. This type of activity, in a creative arts context, can make an invaluable contribution to the enhancement of the reading, writing speaking and analytical thinking skills of students in the general education classroom, and especially for children with special needs.

Creative Drama: This is teacher guided drama activity where the emphasis is on the "process," not on young children learning lines and performing before an audience. Students are free to explore and participate in role playing activities alone or with others at their own pace. There is usually no written script that the children have to memorize, therefore they have the freedom of spontaneous play in creating and exploring different roles of people in literature, places and various cultures (e.g., teacher, queen, president, doctor, lawyer, judge, mother). The children are free to embark on ingenious journeys of self discovery and ambition when they assume the roles of these imaginary characters while broadening their understanding of human behavior in the safe, controlled environment of a classroom.

Observing and Participating: Patience should be exhibited towards children who choose to observe rather than physically participate right away in a creative arts activity. These children tend to first "observe and learn" by watching their peers before gaining the confidence to partake in a class activity. For example, a student with autism at the Ptolemy Reid Rehabilitation Center's Elementary School in Guyana was initially hesitant to participate in the dramatization of an Anansi story being read in class. However, after "observing" his peers, he soon joined and took over the role of the lead character. For young children or students with short attention spans, it is preferable for them to participate in short skits or excerpts from long stories.

Teacher-in-Role: Teacher-in-role is drama in education activity in which the teacher assumes the role of a character during role playing activity in the classroom. The story could be the dramatization of a folk tale, poem or fairytale. In role, the teacher "sheds" her teacher image (usually to the delight of the students) and becomes actively involved in the drama by assuming the role of a character. In role, the teacher can (a) take on characters that the children find difficult to play, (b) help guide the plot of drama along to achieve certain objectives, interact, and (c) encourage responses from children who, due to their physical or mental disability, might be too slow in responding to questions from other members of the class. Simple costumes or props (a hat, stick or a mask) could be added to heighten interest in a drama. These improvised scenes can be used as resources for word lists and writing exercises by the students.

Key Area 2 - DANCE

Definitions, styles and function of dance vary in different cultures. Familiar forms include Jazz, Tap, Folk, Street, Jamaican Sca, Hip-Hop, Ballet, Ceremonial, Traditional, Modern, Experimental and other dances. These dance styles, while having established movements, should not restrict students from mixing different genres. This is focused physical activity that eases tension, releases aggression and strengthens bones, joints, and muscles. While all students will gain from engaging in movement activities, children with physical disabilities and others who use gestures to communicate would benefit significantly from Dance, Mime and Tableaux. Some of the benefits for children participating in creative physical activities include:

- Discovery of innovative and varied ways to express ideas without being judged (especially for non-verbal students and the physically challenged).

- Improvement in balance, strength, fitness, focus, coordination, and development of fine and large motor skills.

- Exploration of new ways to use their bodies.

- Release of tension, stress and negative energy.

Creative Movement: Creative Movement can be described as nonverbal communication using movements of the body accompanied by music, sounds or/and silence. Possessing many characteristics of dance, the appeal of Creative Movement is its adaptability and accessibility for most children with a wide range of disabilities. For some children, creative movement is less judgmental than other art forms, allowing more freedom of expression

and experimentation, hence greater participation. Mime or Pantomime is activity without words with the focus on telling a story through physical movements, e.g., body language and facial expressions, which is ideal for deaf children. Tableaux are frozen images that express ideas, feelings or convey a message. Good for jump starting any number of related dance activities.

Key Area 3 - MUSIC

Music, itself frequently incorporated as an element of drama, is well known to promote concentration and discipline. Technically, it encompasses the sounds and silences in improvised patterns using an array of devices and vocal sounds. The accelerated development of memory and related mental skills of students who embrace this art form and the therapeutic benefits derived on the emotional level are undisputed. Some of the benefits of music related activities in the classroom are indicated below:

- Singing and listening to different kinds of music deepens interest and understanding of diverse cultures, history and traditions.

- Learning to play a musical instrument which requires commitment, practice and discipline encourages the development of these important qualities that can extend to other areas of cognitive and physical development.

- The singing of nursery rhymes aids memorization, broadens vocabulary and enhances language skills. This type of vocalization in rhyme is a key component in the mental imprinting of mathematical tables and understanding of related concepts.

Key Area 4 - ART

The focus of the visual arts is on the creation of works that are primarily visual in nature, primarily drawing, painting and sculpture. Many allied artistic disciplines such as the performing arts and puppetry involve aspects of the visual arts mixed with other types. The areas of the visual arts of interest to us here include not only the familiar ones but others such as handicraft, print making, mask making, collage making and video production. One of the primary benefits of art in the curriculum is the facilitation and encouragement of self expression, especially when packaged with creative arts activities across the entire range of subjects taught in the general and special education classroom. Whenever available, full use should be made of computer programs and educational videos which can be very helpful when teaching children with special needs.

Key Area 5 - PUPPETRY

Puppets are inanimate objects manipulated [brought to life] by a person (puppeteer). Puppets can be symbols or characters that represent humans (including people from history, literature, plays, paintings or short stories), animals, insects, birds, or trees. It is one of a small group of the applied arts that provides a multi-dimensional, holistic learning experience for creators, presenters and viewers alike. When incorporating drama, visual arts, dance and music with its "hands on" qualities, puppetry can be an extremely important part of creative arts instruction in the classroom.

Puppet Design: Quite intentionally, there is tremendous latitude for freedom of expression and creativity in puppet design. While all can borrow from established styles, students should be allowed to experiment and come up with their own ideas. For those with special needs who might feel restricted by a particular disability, puppetry allows freedom to explore their creative sides and challenge accepted stereotypes. Puppet design always incorporates a method of manipulation. This in turn determines the design of the puppet booth. It is important to note that the art of puppetry allows room for mistakes and self discovery, with no puppet ever being labeled as "failing" or having an "incorrect" design. Listed below are some basic ideas on the creation and use of standard puppet types. The special needs teacher is encouraged to seek out web based resources to explore further. (see, e.g., *http://homeschooling.gomilpitas.com/explore/puppets.htm* for tips on creating a wide range of puppet types).

Types of puppets
Some of the more widely used puppet types are indicated below. These puppets can be manipulated from a variety of places, e.g., below, above, behind or in front of the stage or puppet booth.

Paper puppets (finger and hand): Finger puppets are small puppets made of paper that are manipulated by fingers. These are simple to make, e.g., draw, trace or photocopy images from a book or magazine; glue images on pieces of small square pieces paper; cut shapes of objects and attach to fingers using tape or rubber bands.

Paper bag puppets: Decorate small hand-sized paper bags and use vertical and horizontal movement of the hands to simulate movement of the puppets.

Glove/hand Puppets: As the name suggests, glove/hand puppets can be simple or elaborate puppets that fit on the hands like a glove or sock. By moving one's hand, quick and robust actions can be made by the puppet. The designs can vary, and may include puppets with

"moving mouths" which is accomplished with the thumb of the of the puppeteer placed in the lower "jaw" of the puppet and the other four fingers forming the upper part of the puppet's mouth and face. The opening and closing of the puppet's mouth is performed through coordinated motion of the thumb and opposing fingers of the puppeteer.

Rod puppets: These offer great potential for creativity in design and presentation. The rod puppet is held and manipulated by a rod most often from below but sometimes from above. The range of swift and subtle movements possible makes the rod puppet ideal for sketches that depend on precision and timing. A rod puppet may vary in complexity from a simple shape supported on a single stick to a fully articulated figure with moving eyes and mouth. These puppets can be presented in or out of a booth.

Shadow puppets: These are flat, cut-out figures held by a rod or wire against a translucent illuminated screen. Shadow puppets are ideally suited and often used to illustrate a narrated story.

Marionettes: The marionette is a puppet on strings, suspended from a control held by the puppeteer. Its construction can vary from the extremely complex to the very simple; from a figure with any number of moving parts controlled by a multitude of strings to a simple figure with only a few strings. A traditional marionette stage is designed to hide the operators but, because of portability issues, marionettes are increasingly presented on an open stage with the puppeteer in full view of the audience.

Outdoor Puppets: Surveying the Caribbean cultural landscape, one can see elements of "outdoor" puppetry in the Masquerade Bands, Carnivals and Costume festival presentations. The Bull Cow and Mother Sally, two established puppet characters in Guyanese masquerade bands are staple characters in most, if not all, masquerade bands found in the Caribbean. One can also find similar strains in the elaborate costumes worn during annual Carnivals and national celebrations in several Caribbean countries. The annual West Indian Labor Day parade in New York, and similar Caribbean festivals staged in London and Toronto also exhibit "outdoor" puppet styles in their costumes. These styles are considered "variant" or "hybrid" aspects of classic puppet theatre.

Constructing the puppet booth or stage

The puppet booth or stage is the area where the puppets are manipulated during a presentation. The designs can range from the simple to the complex. A "physical" puppet booth is not always necessary. An open space could be used if manipulation of the puppets were being done in full view of an audience. This "open" style of puppetry presentations

has been well presented in classrooms, school productions and professional shows. Examples of simple and inexpensive puppet booth(s) or stage(s) that can be set up by teachers and students in the classroom include:

■ An open space in the class.

■ Cardboard boxes of different sizes, e.g., (I) a shoe box converted into a small puppet booth appropriate for finger puppets, (II) a refrigerator box used as a puppet booth for hand puppets or marionettes (a screen lit from behind could be used in such a setting for a shadow puppet presentation).

■ Desk or tabletop.

■ A simple frame or clothes horse covered in fabric.

Puppet booth and puppets created by teachers who participated in an Arts-in Education workshop during 2007 in St. Lucia (Photo courtesy of Grace Chapman).

Puppetry for the developmentally disabled

Puppetry can be an invaluable tool to assist children in their emotional and social development. This art form has helped "shy" children speak and engage issues they were hesitant to discuss in the absence of the puppets. Children who stammer and are nervous while speaking to a group, for example, could successfully narrate a story with the help of glove puppets, manipulated behind a curtain to eliminate listeners from view. Other children spoke freely while holding the puppet and were not afraid to make mistakes because the "puppet" was speaking and therefore the puppet will "make the mistakes" not the child.

Puppetry for the physically challenged

Because it entails the use of all parts of the body and senses, puppetry can be a tremendous aid in the education of the physically challenged child. If the student is using a wheelchair or a walker, adequate space to move and manipulate the puppet behind the booth should

be incorporated in the design of the puppet booth. The array of skills required ranges from fine motor skills for making/manipulating marionettes or hand and finger puppets to the large motor skills required for the manipulation of the life sized, Japanese Bunraku puppets. Participation can take place on many levels, depending on disability.

Puppetry for the blind or visually impaired

Children who are blind or visually impaired demonstrate more control and express enhanced confidence when performing in a puppet show. They feel comfortable in a familiar space. Smaller booths and puppets tend to work better because the visually impaired child can feel and get a sense of the actors and scenery very quickly, hence movement is more precise. Away from the view of the audience or peers, most blind students can perform without anyone focusing on their disability. They had rehearsed using the puppets in safe, familiar space with set boundaries that hadn't changed. They were guided in voice projection and manipulation of the puppets, and had memorized their lines.

Students at Linden Center for Handicapped Children using sock puppet to role play an insect talking to a flower. (Photo Courtesy of LCHC).

TEACHING STRATEGIES IN THE CLASSROOM

Given that the reorienting of curriculum to address the needs of sustainable development is key to arming young people with the proper knowledge, skills, perspectives and values to pursue lifestyles in a sustainable manner, the special needs teacher is encouraged to use the creative arts to design class projects that provide user friendly and hands-on access to relevant subject matter that address ESD goals. The sample below is science oriented and can be used as a template which can be applied in classrooms that cater to children with

a wide range of disabilities. These creative arts strategies can be used for most subjects in the general curriculum, and are limited only by the imagination of the teacher and the capabilities of the children.

CLASS PROJECT SAMPLE	
Subject	Science
Topic	Insects and their Habitat.
Objectives	Understand the characteristics, activities and importance of insects to the environment.
Content	■ The life cycle of the butterfly; ■ Butterflies, Bees and their importance to pollination and, in turn, pollination's key role in agriculture and the sustainability of the food chain (the focus here is on the insect as pollinator and not on the biology of plant reproduction).
Creative arts strategies	
Art	■ Examine and discuss photographs and drawings of a representative group of insects (dragonfly, ant, dragonfly, beetle, cricket, bee and butterfly); whenever possible (under supervision), have students collect and examine actual samples of insects and compare with drawings/photographs. ■ Use photographs and illustrations to identify and discuss the main physical characteristics of insects, i.e., six legs, three main body parts (head, thorax, and abdomen). ■ Discuss the life cycle of the butterfly and have students prepare diagrams and drawings that illustrate how a butterfly starts out as an egg, hatches into a caterpillar, becomes a pupa and then emerges as a fully-grown adult.
Puppetry arts/drama	■ Create puppet booth with a "garden" setting. ■ Decorate the puppet booth with drawings of leaves, flowers and various insects. ■ Make simple stick, hand or glove puppets representing different insects; group the puppets according to names, colors and sizes. ■ Have these insects meet two at a time in the "garden" (puppet booth) to discuss their lives, similarities and differences.

	- Have a "butterfly" and a "bee" meet in the puppet booth to discuss how they go about pollinating flowers. - A "bee" puppet can discuss and demonstrate how he takes nectar from flowers to the hive to make honey and how that interaction with flowers contributes to pollination. - Use "teacher-in-role" activity to provide answers to key questions in the puppet booth, e.g., students (using puppets) pose questions to the teacher-in-role (insect). A follow up exercise with the roles reversed, i.e., the students, assuming the "role" of insects, will answer the same questions posed earlier to the teacher. - Use a sock puppet to explain how and why some insects live among plants. - Use sock puppets to dramatize the "social" habits of insects, e.g., some live in colonies while others are solitary.
Dance/creative movement/music	Have students mimic typical movements (flying, hopping, crawling, creeping, etc.) of different insects to "bring them to life;" exaggerate movements for dramatic effect.
Drama/playwriting	Students should be assigned to write a short story, poem or monologue from the perspective of their favourite insect. This activity could be jump started by extemporaneous vocalizations in the classroom and the preparation of word lists. As progress is made in assembling the original material, students should be encouraged to transfer this work to the puppet booth or performance of staged readings for the class.

To the fullest extent possible, arrangements should be made for students to go out in the field to observe what they have learned in the classroom. This is important because these kinds of outings expose them to a real world perspective on the classroom subject, and provide an easily grasped context for their responsibilities as it pertains to sustaining the environment. For a project such as this, a trip to the botanical gardens or a nature walk where students can observe butterflies and bees at work pollinating flowering plants can be a wonderful jump-off point to deepen the discussion on the importance of sustainability when we change the environment in the name of human progress.

LEARNING BEYOND THE CLASSROOM

For many children with special needs, limited interactions with individuals in their communities have caused many to develop misconceptions about disabilities. One way to challenge these stereotypes is to encourage the class to participate in a presentation and/or exhibition of their work when classroom projects are completed. Participating in public presentations allows children to interact, share their thoughts, showcase their abilities, and foster awareness and education of adults and peers in the larger community. The final presentation(s) could include "staged-readings" of plays, monologues and poems written by students, a puppet show showcasing their talents, or an exhibition of their works. Since one important emphasis of creative arts teaching methods is on deeper learning through participation, the final presentation needs to be part of the learning process, with the students sharing and being proud of what they have accomplished. All students involved need not take part in a particular presentation but those that are not taking part should make their contributions in other ways such as providing input and feedback in the classroom, and working towards the actualization of any projects on display at an exhibition.

Suggestions for Performances (live or recorded)

- Plays, poems, monologues, songs.

- Dances, pantomime.

- Puppetry shows.

Tips for memorizing lines

- **Adequate time:** Enough time should be given for children to memorize lines and rehearse for a staged presentation. Consideration should be paid to their individual strengths and abilities. Some students with special needs can read independently and memorize pages of dialogue, stage directions and movements in a few minutes while others require much more time.

- **Rehearse:** Rehearsal is a must with other students in the production; this should include listening to live or audio recordings of the text, and readings with any drawings relevant to the text.

- **Markup scripts:** Relevant lines should be highlighted with a marker (different color for each student) making it easier for each child to identify, read and/or learn their lines.

Tips for performing without memorizing lines

- **Mime or dances:** Can be combined with some participants reading a narrative off stage while a student performs a mime/dance which interprets the dance or text.
- **Staged readings:** Students read from a script while sitting or standing in basically one area of the stage. In instances where the objective is on children presenting writing projects that they themselves completed, "staged readings" usually work very well. With rehearsal, these "readings" can be very dramatic with students using a range of facial expressions, gesticulations and vocal tones to bring their written text to life.
- **Paired readings:** Pair the "performer" with a teacher or another student who can "feed' them the lines (e.g., someone stands next to the performer on stage and reads the lines to the performer; the performer then repeats the lines).
- **Puppet show:** When manipulating puppets outside of the audience's view, the student can read or be fed lines during the performance.

Key consideration for puppet booth

Concealment, i.e., how much the student wants to be concealed (not seen by the audience while manipulating a puppet) is a key consideration when contemplating stage/booth design. Concealment is suitable for children who:

- Are shy.
- Find it exciting to "hide."
- Need verbal, emotional or physical assistance from teachers or students during a puppet show.
- Use wheelchairs or have physical disabilities and prefer an audience to focus on the performance.

Putting on an Exhibition

Suggestions for Display

- Drawings, paintings, masks and related art created by students.
- Text of scripts, poems, monologues, stories, songs written or created by students.
- Puppets and puppet booths designed and made by students.
- Musical instruments designed and made for students by students.
- List names of all students (and photographs if possible) who contributed to the exhibition and performances (on and off stage).

Public Relations

Teachers should contact local media (newspapers, radio stations, television stations) early to advertise productions or exhibitions by students. They will usually do this for free. The importance of establishing contact with government, especially local government functionaries from departments such as the Ministry of Education for support cannot be overemphasized. Local non-governmental organizations can also offer valuable help. The Rotary and Lions Clubs are two organizations that have a very good track record of supporting the cause of special needs children in the Caribbean. When establishing contact, a telephone call backed up by a letter or email is always helpful.

What we learn

The public's responses to these types of presentations are most often extremely positive. One outstanding example of this was the experience of this author with special education students in New York City who were presenting a play that they had created as an Arts-in-Education project. They had written a puppet play about peer pressure and created the puppets and a puppet booth for the performance. For this presentation, three students performed inside of the puppet booth. After an extraordinary performance, the three wheelchair bound students came out of the puppet booth to take a bow. There were audible gasps from the audience followed by loud applause. Most of the guests were unaware of the students' physical disabilities until that moment. This singular achievement proved beyond a doubt that, despite their handicaps, these students could and should not be underestimated. Similarly, works produced by special needs students that educate about responsible stewardship of the environment with an eye to the future can be a powerful sensitizing tool for peers and parents alike.

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Chapter

3

Infusing Education for Sustainable Development into the Teaching of Literature

Lorna Down

This chapter aims to show you how to infuse Education for Sustainable Development (ESD) in the teaching of literature. The chapter will include:

- A definition of what is meant by infusing ESD into the curriculum.
- The reason for using the infusion approach.
- An overview of the steps for using this approach.
- Detailed step by step guide for using this approach.

Examples of my use of this approach are also found in Appendix.

DEFINING THE INFUSION APPROACH

To infuse ESD into the curriculum means to integrate, to weave into the existing curriculum, the knowledge, perspectives, values, skills/actions needed to transform society and to sustain the planet.

- Knowledge about sustainable development, that is, knowledge about the environment, economics and society. Students need to learn how human activity affects the environment, what changes are taking place in the environment (e.g. climate change), what can be done to stop, adapt to or reduce the impact of these changes. Students also need to understand the connections between what happens in the physical environment and what happens in the society (economically, socially, culturally). Students also need to become aware of the many issues associated with creating a sustainable world. These include issues related to peace, justice, the reduction of poverty, environmental stewardship, the protection of animal and plant species, biodiversity, energy and water conservation.

- Perspectives. It is important to develop what I call a 'sustainable development' perspective. Students need to be encouraged to critically analyse beliefs and actions from the viewpoint of how sustainable they are and of how beneficial they are to society (both local and global) as a whole.

- Values. At the core of a creating a sustainable society is the creation of values such as respect and care for self, others and the planet. Such values have to be nurtured, taught, examined.

- Skills/Actions. Students need to be enabled to act in accordance with the values and perspectives outlined above. Fundamentally this means preparing students to address the needs in their community/their society by providing them with the tools and opportunity to do so.

These components are based on Rosalyn McKeown's ESD toolkit, available on the Internet at http://www.esdtoolkit.org

To some extent all curriculum includes aspects of these. Teachers, therefore, need to audit their syllabuses to see what gaps and what emphases are missing. Questions such as the following should be asked by the Language Arts Teacher:

- How much knowledge about the physical environment is required in a language arts curriculum? Is any such knowledge required?
- Does the language arts curriculum include the examination of and the development of perspectives and values that will create a just and equitable society, a society that is sustainable?
- To what extent are students encouraged in this curriculum to be aware of the connections between the physical, social, cultural, political and economic aspects of society?

WHY USE THE INFUSION APPROACH?

Many teachers balk at the idea of adding another course to a curriculum that is already full, even one that is as critical as 'sustainable development'. The infusion approach allows us to address sustainability, not by adding another course, but through the teaching of our subject area. Teachers will find that there are sustainability topics that will complement or extend in meaningful ways what exists in their curriculum.

INFUSION APPROACH TO THE TEACHING OF LITERATURE
Overview

Step 1: Planning for infusing ESD into subject area
1.1 See the big picture. Identify objectives for ESD.
1.2 Identify special contribution literature makes to the curriculum.
1.3 Identify objectives of literature.
1.4 Match literature objectives with ESD objectives.
1.5 Identify what ESD content is missing in the literature syllabus.
1.6 Identify general strategies for teaching literature with an ESD focus.

Step 2: Making it Happen
2.1 Explore the term 'sustainable development' with your students.
2.2 Discuss with your students reasons for including an ESD focus in literature.
2.3 Teach with clear ESD focus working with objectives and outcomes identified in planning stage.
  - Introductory Activities.
  - Developmental Activities.
  - Concluding/Reflective/Evaluative Activities.
2.4 Provide opportunity for students to learn about and engage in transforming community in their community. Plan community action project related to lessons.

INFUSION APPROACH: *Step by Step*

STEP 1: Planning for infusing ESD into Literature

In this section, I present literature as a specialist area, as a subject separate from language. In C-SEC examinations, this would be the subject referred to as English B.

1.1 See the big picture, Identify objectives of ESD.

Objectives for an education that addresses sustainable development may be summarized as helping students to understand themselves and others and their relation to the wider natural and social environment. Such an understanding will serve as a basis for building respect for self, others and the earth. The goal is to transform society by producing graduates who have been enabled to do so through having the vision, knowledge and practice of this. Students should learn, therefore, to think critically about and understand major environmental, social and economic issues, and act to create a world where people:

- have sufficient food for a healthy and productive life,
- enjoy a better, safer, and a just world,
- care for and work to restore the state of our planet,
- are caring citizens who exercise their rights and responsibilities locally, nationally and internationally.

Specific objectives in teaching include:

- To develop students' knowledge and awareness of the physical environment (e.g. climate change, global warming, biodiversity).
- To help students care for the physical environment.
- To help students understand the relation between the physical and social environment.
- To develop students' knowledge and understanding of society (e.g key social issues such as justice, equity, peace, poverty eradication).
- To encourage students to care for and respect others.
- To help students identify strategies and take action to address environmental, social and economic problems.

1.2 Identify special contribution literature makes to the curriculum.

I look at what literature offers, what is special about literature and how that can be used to further our goal of a sustainable society. For example, literature builds empathy. Through literature we learn how to 'walk in another's shoes', how to see the world from another person's perspective and how to feel how others feel. Literature provides a space in which we can become the 'other' for a while. Literature also focuses on moral and ethical issues, attitudes and values. These are important 'specials' that Literature has to offer.

1.3 Identify objectives of literature.

To begin, I look at the objectives for teaching literature. These objectives include helping students to recognize the insights, the truths, the lessons that emerge from the novel, short stories or poems studied. At core, it means helping students to understand themselves, others and their world. The objectives also include helping students to appreciate and enjoy literature. To achieve all this will require teaching students to identify and understand the elements of literature (for example, character, plot, setting, theme, structure), literary devices and techniques.

1.4 Match literature objectives with ESD objectives.

Literature objectives include helping students to understand themselves and others as well as the wider natural and social environment. There is often a focus on relationships, values, beliefs, cultures. These objectives match with ESD objectives that call for developing students' knowledge and awareness of the physical and social world.

1.5 Identify what ESD content is missing in the literature syllabus.

What may have often been missing in literature lessons is a focus on the natural/the physical environment (factors affecting its stability) and the interconnections between the physical environment and other aspects of society, i.e. social, economic, political, and cultural. Such knowledge may be seen as fundamental for an education that is addressing sustainable development. For Literature lessons to respond to the ESD objectives mentioned earlier, it requires that students:

a)   Know and understand the elements of literature.
b)   Be able to critically analyse the literature texts.
c)   Learn about the impact of human activity on the physical environment and the changes in human behaviour required to redress the negative impact.
d)   Recognize connections between the natural world and society as a whole.
e)   Learn to empathize, see other perspectives, and be motivated to take action for the common good.
f)   Become involved in an action project.

Some literature texts will explicitly focus on the physical environment, others will not. Where there is no explicit exploration of the physical environment, the teacher then will have to analyse how the physical environment is represented and its relation to the society/community/characters in the text. The absence of or a very limited description of a physical environment is an opportunity to raise questions about its significance or its insignificance.

1.6 Identify general strategies for teaching literature with an ESD focus.

General strategies include using:
a)   technology (DVDs, videos, films, the internet etc),
b)   a systems thinking approach, focus on the connection, the relation between the natural and social world, as represented in the texts, with the help of graphic organizers, venn diagrams, concept maps,
c)   a cross-disciplinary approach, e.g. use material taken from other disciplines on sustainable development issues along with the literature texts,
d)   future-mapping exercises.

Step 2: Making it Happen – Infusing ESD into the Literature Course

2.1 Explore the term 'sustainable development' with your students.

Before entering into discussing ESD in the study of literature, students need to be prepared to start thinking about sustainable development and ESD.

■   Have students comment on definitions from various texts (see references at end of chapter for suggestions).
■   Have students conduct a survey on young people's views on the concept of 'sustainable development'.

Examples of other activities for preparing the classroom context for learning about ESD are:

■   Students write short narratives on an experience that reflects a national challenge and share these.
■   Students make a wish list, itemizing 3 things that they would like changed in their society.
■   Students engage in 'future' exercises, for example, they select headlines in current newspapers. Then they write new headlines based on what they imagine could be changed in 10 years time.
■   Invite teachers/lecturers from other subject areas or practitioners in the field of the environment to make a presentation on sustainability issues e.g. climate change, protection of coral reefs, pollution, waste management.
■   Engage students in critically reading various texts on sustainability issues. Allow them to read these, ask questions, and make comments and annotations on these texts. Such comments and annotations should if possible be re-visited towards the end of the course.
■   Use a DVD, video or film focusing on climate change or general environmental changes in your country or global situation. Follow this with a discussion on the material presented and what needs to be done collectively and individually.

Example - Video

The video 'Earth to Sea' shows the devastating effects on the physical environment in Jamaica because of man-made activities. This has been presented to my students. Students found the video very informative; many of them had not realized the extent to which we were damaging the environment.

2.2 Discuss with your students reasons for including an ESD focus in literature.

Link the activities conducted in Step 2.1 to the background/context of the literature texts being studied. This can be done in a number of ways:

- Make a list of sustainability issues discussed. Ask students to predict what they think the author of any of the books to be studied may reveal about these issues given the author's background (i.e. country, region, period, historical/social/economic/physical issues of the country).
- Select a passage from the literature text. Ask students to write questions, comment/make notes on what the passage reveals about the relation between the natural and social environment or the writer's representation of the natural world.
- Ask students to randomly select a section from the text, identify the major issue and then identify a non-fictional account that speaks to the same issue.

2.3 Teach with clear ESD focus working with objectives and outcomes identified in planning stage.

1. Use the following 2 questions to frame your lessons:

- What do these novels teach us about a) ourselves b) our relationship with each other c) our relationship with the wider natural and social environment.
- How do the writers present these issues and themes?

2. Focus on a major sustainability issue, for example, 'Peace'. See vignette on 'Literature to address violence'. This focus can be extended by using it as a link to other sustainability issues.

3. Review your lesson plan or lesson by including the question: 'to what extent has this lesson provided my students with further insight into the sustainability issues and motivated them to act in ways that are sustainable for the society and the earth.

Here are a number of strategies that may be used for teaching literature with ESD focus for mainly secondary and tertiary students. All the activities can be modified by being made simpler for primary school students or made more complex for tertiary. Please note that reading most if not all of the literature text in class is important for primary and secondary school students. These activities are intended to extend the reading not replace it.

Introductory Activities. These are used to establish the focus of the particular lesson, to connect the text with the event, people and places in the local and global society.

- Music. Play appropriate music to set mood and use as basis for discussion on a particular theme. Ask students how the music makes them feel or what thoughts come to mind when they listen to this music. Experiment with different types of music, compare types. If focusing on 'peace', for example, allow students to make jottings on how/why some types evoke feelings of peace and others do not.
- Songs. Let students respond to meaning conveyed in song. Relate to text.

Example - Songs

Peter Tosh's 'there can be no peace without justice' sets the stage for exploring the relation between peace and justice in society as well as other aspects of society that encourage or discourage peaceful relations in society. I would ask my students to respond to the question: 'what does Tosh say about 'peace' or have us reflect on.

- Photographs. Take photos of various scenes in society or have students take photos or select from newspapers, create a power- point presentation, using these photos, for exploring a sustainability issue in the texts being studied.

Example - Photographs

I will give an example for using photos in teaching Octavia Butler's *Parable of the Sower*. This novel tells the story of a society that is fragmenting, that is in crisis. It is very violent society and it is facing severe environmental and economic problems. In the middle of all this is a young minister's daughter, who, as a result of facing personal tragedy, provides a vision for a new world and leads a group to survive and to transform their lives. Photos taken will be of different scenes in my country. They will be photos showing peaceful situations (if the focus is on 'peace') of people and places. I will ask my students 'what is "right" about these photos' to generate a discussion on what makes for peace and for a good environment. This will lead to reading the text with the perspective of 'what is right about these scenes from the text' and 'what needs to be done to make these scenes right'? (Tip: A deliberate effort to centre on the positive is needed. Otherwise, I have discovered that students get depressed when they both have to live and discuss the negatives in their society).

- Future mapping activities – Have students engage in future mapping activities, e.g. Let them take existing headlines in newspapers and imagine what such headlines could read in 20 years time. Have them do a future map of their lives and share it with others. Create alternative futures for a community.

Developmental Activities - Combine activities or use more than one text.

- Explore the environment in the selected text. Have students after or during reading fill in a concept map (or something similar) to identify the various relations in the text: social, physical and others that they identify (e.g. cultural, political). This can then be used in discussion on the relations in the text.

Extension Have students track changes in the environment as presented in the literature text. Have students observe a particular area in their environment and track the changes taking place there. Let them compare these changes with those taking place in the environment represented in the text. Create a newsletter in which these changes in the students' environment are recorded and discussed and share the newsletter with the wider society.

- Using Rosalyn McKeown's ESD toolkit (available on the Internet; type in "McKeown, ESD toolkit" in Google at http://www.google.com), have students identify in graphic organizers any of the following: Knowledge, Skills, Perspective, Values that emerge or may be needed in the society that is represented in the text being studied. Focus on the reading of a particular passage.

Extension Students create a 'values chart' to show what values need to be in place for survival in a text studied. Test the validity of their 'values chart' by having different members of their community respond to it.

- Have students examine the writer's presentation of character, plot, theme etc in the novel or short studied from a 'sustainable development perspective', for example, have students question what is sustainable in terms of characters' practices.

Extension Create a 'newspaper' detailing the lives of the characters, events, conflicts, using the theme of 'sustainable/unsustainable lives'.

- Use parallel readings. Select non-fiction material that reflect or question issues that arise in the fictional material.
- Have students reflect on what they read – allow for reflection during class sessions by having students make journal entries, write comments and notes on their response/their feelings towards various aspects of the texts.
- Have class make annotations on texts. Students write comments on margins in text which they then share with others. Re-visit such annotations towards the end of the course.
- Have students create a study-guide for any of the texts read, using a 'sustainable development' perspective.

Concluding/Reflective/Evaluative Activities
- Students make presentations on 'the future' as represented in the texts studied.
- Students display of charts, graphic organizers, journal entries with comment sheets to be filled in by class on the topic of 'sustainable development'.
- Students edit and present newspaper, newsletter created by groups in class.
- Students list questions provoked by class discussion and answer these.
- Students identify key quotations from texts read or those that they have composed based on the lesson and share them with class.
- Students listen to music and critique its aptness for the in-class discussion/presentation on text.
- Students identify actions that can be individually undertaken for creating a better world

2.4 Provide opportunity for students to learn about and engage in transforming community in their community. Plan community action project. (See Chapter 4 for further ideas on community action project and Chapter 5 for an example of a community action project.)

Concerns/issues arising from the literature texts and general material on sustainable development set the stage for the community action project. Aim at linking the discussion and exploration of various sustainability issues with the community project. In studying the literature texts, our students are made aware of different perspectives and values –how these are formed and how they influence action. Relate, therefore, the action project to values and attitudes. Help students clarify how the community action helps to change perspectives and values.

- Introduce the idea of community action project by having students reflect on what action they can take to address one of the sustainability issues raised in class.

- To get students to begin thinking about their project, ask them to fill in the **Reflection on Project Form** (Example I).
- Have students fill in the **Action Plan Guide** (Example II). This is intended to help them clarify what they want to do and how to do it. My students were asked to reflect on the concern that they wanted to address. They were encouraged to connect these to their interests, passions and ability. Using the action plan guide students were helped to initiate, develop, and maintain a project in their community for a term.
- **In-class dialogue** – This is a key element in the community action project. The teacher should schedule time in class for students to share their project ideas, progress, and challenges. This can be a bridge between what learning/teaching occurred in the field and what took place in the classroom. My students commented that they found the in-class dialogue most helpful. They wanted it, however, to be formally scheduled as part of the class activity time and they wanted everyone to share their project progress.
- **The reflective log** (Example III) – Allow students to record their feelings about the project, the way the project was introduced and developed in the community. The progress of the project, including the challenges and successes along the way should be noted. As far as possible students should comment on what took place each time they entered the field. The log is intended to record their feelings, their observation, their actions, the step by step process and the outcomes. The log should include as well the feelings and the actions of the other participants.

Example I

Reflection on project form

Name:

PART 1

List some of your strengths.
What are your areas of passion OR what are the sustainability issues that strongly concern you?
What is the real world problem that you want to address in your project?
What organization/institution/community are you planning on working with/in?
Who do you think can work with you in class or outside?
What are some of the questions that you have about addressing the problem?
What knowledge do you need?

PART 2

What does the community, in which you want to work, think about your project?
[Interview a 1 or 2 members of the community to find out].

Example II

Action plan guide

1. Initial feelings about carrying out a project
- How did I feel when I heard that I had to do a project?
- Why did I feel this way?

2. Selecting a Project
- What problems am I very concerned about?
- What problems do I think that I can best tackle?
- What will I need to tackle these problems?
- Which one will I select?
- Why?

3. Making an Action Plan
- Define exactly what the problem is.
- Turn your problem into a question: 'How can we better manage waste in the school environment?'
- Decide exactly what you want to do – measurable objectives
- List steps you will have to take to make it happen
- Decide when, who will be involved, how it will be done
- Consider the following questions:
  a) What relevant knowledge/skills/experience do I already have
  b) What additional ones do I need
  c) Who else needs to be involved?
  d) What difficulties do I foresee?
  e) What strategies will I use to overcome these difficulties
  f) What support or suggestions do I need? Who could help
  g) How will I be able to monitor and evaluate the effectiveness of my project?
- Prepare a timeline.

4. Begin. Put your plan into action. Implement. Critically reflect.
- Critically reflect on your actions daily/weekly. Record your observations and your feelings.
- What was supposed to happen?
- What happened?
- What were the positive and negative factors?
- How do you feel?
- What have you learnt?

5. Identifying, critically reflecting on what was done and learnt
- What were the objectives of the project?
  a) What did you set out to achieve
  b) Were there any unstated objectives?
- What did you achieve
  a) What did the participants experience?
  b) What did you and they accomplish?

- What went well?
  a) Why did this go well?
  b) How can you ensure that future projects go as well?
- What could have gone better
  a) What happened to stop you from achieving more here
  b) What was missing that meant this happened
  c) How can you ensure that future work will go better?
- How satisfied do you feel about the way it went?
  a) How would you rate your satisfaction level on a scale of 1 -10?
  b) What would have made it a 'perfect 10' for you?
- What did you learn?
- What did you learn about learning?
- What theories of learning/education were particularly useful?

Example III

Reflective log

My students recorded their progress, challenges and general feelings about their project. They also commented on the lessons learnt. The student, for example, who carried out a 'literacy for peace' project learnt about the strong relation between a lack of self-esteem and violence. Another student who helped to create a green area in a school discovered how one individual can make a difference and how each one can contribute to the common good. All the students spoke about how change is possible, despite the challenges. Students were encouraged to concentrate on the process of developing a project and even though the final product was important, the emphasis was on the process. The basic stages were set out as follows:

- Before the project.
- Introducing the project.
- Maintaining the project (meeting challenges, overcoming hurdles).
- The product.

Students were also encouraged to take photographs of their work in community, which many did. Others also included tapes of interviews conducted.

Other projects included:
1. Creating a vegetable garden.
2. Working with the homeless.
3. Helping seniors and discovering traditional knowledge.
4. Building awareness of HIV/AIDS with teens in a church community.
5. Values and Attitudes.
6. Making a compost heap.

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Appendix

The Course -Literature and Education for Sustainable Development

In our study of Octavia Butler's 'Parable of the Sower' students explored the representation of the natural environment. They discussed the extent to which Butler's representation reflected the present local and global natural environment and what existing trends may lead to the kind of world that Butler describes. They examined as well the theme of change in the novel and how characters adapted to change and produced their own changes. They came to understand on a deep personal level how man-made activities can alter the physical environment and the devastation that can follow as a result. They were also able to reflect on the web of relations – the circular nature of the connections with the natural and social world.

In another novel, Earl Lovelace's 'The Wine of Astonishment', which deals with a a poor and seemingly powerless community struggling with a government that has banned their important church rituals, students analysed the issue of poverty – the attitudes, the causes, the impact, the politics, the violence, the role of the Church and the ways to change such situations. The natural environment and its link to the social environment were also examined. Lovelace's novel, though it does not focus on the natural environment (like Butler's novel) does raise important questions concerning the use of land, the rural-urban drift, etc. Read alongside this text, were also texts and recent studies conducted on poverty. The DVD ' Life and Debt' providing a global view of the issue of poverty was also shown and extended the analysis of the subject.

Other literature texts studied were Leslie Silko's 'The Ceremony' and Nalo Hopkinson's 'Brown girl in the ring' through which we examined issues such as the physical environment, peace and violence, indigenous traditions and customs.

Some students found the exploration of aspects of these texts depressing. It was, therefore, essential to balance discussion on the negatives with discussion on what can be done to prevent, to adapt in order to improve the quality of life for our world.

An important suggestion made by the students was to include field trips. Given the time constraint, this may be prove difficult but is not impossible. This could perhaps be combined with the activity on 'using photos' as students could on such a trip take many photos of their community and create a photo story.

See also "Literature to Address the Problem of Violence" by Lorna Down, in UNESCO, *Guidelines and Recommendations for Reorienting Teacher Education to Address Sustainability* (Paris: UNESCO, 2005), available on the Internet at
http://unesdoc.unesco.org/images/0014/001433/143370E.pdf.

4

Social Studies and Education for Sustainable Development

Anthony D. Griffith

THE SOCIAL STUDIES CONTEXT

The current thinking in the teaching of Social Studies places much emphasis on active learning, through the study and investigation of significant social issues and concerns. Barth (1993:57) submits, as a basic belief of Social Studies, that "... the proper content of the Social Studies is the persistent and contemporary social ... conflicts, issues and problems..." that affect society   Most writers in Social Studies also argue that the subject is underpinned by a commitment to social and individual development and improvement. This goal, it is argued, can perhaps best be achieved through preparing our young people to examine real and existing social problems, issues and events, with a view to understanding them and examining possible solutions.

Knowledge of the nature of our society and the functioning of our social institutions is clearly important. Yet, perhaps more important than this knowledge is a range of skills and competencies that are required to enable our students to become competent, caring and responsible citizens and decision-makers. These skills equip students for the process of social inquiry which involves the major activities of:

- investigating (an issue or problem),
- deliberating (on causes, points of view, etc),
- problem-solving (proposing a solution),
- serving (a community need),
- acting (on a solution), and
- reflecting (on the action taken).

The process of inquiry is therefore an integral aspect of the teaching and the learning of Social Studies.

Box 1. **The Critical skills to be emphasized in Social Studies.**

- Academic skills – for finding, decoding and organizing information.
- Cognitive/intellectual skills – for analyzing and evaluating information, for reflective thinking and decision-making.
- Social and interpersonal skills – for promoting social harmony, tolerance and respect for others.
- Prosocial attitudes – for promoting social development and progress.
- Civic competencies – for knowing how, and being willing to actively participate in the decision making process in one's community.

Brophy & Alleman (1994 & 1998) argue that the social concerns and issues that are of significance exist *in the community*, outside of the classroom; and they also note that students can best study and investigate these issues in their real-life setting. This also allows students to observe first-hand the impact of these issues on the community. Such learning activities will then be truly authentic in terms of the study of real-life situations and the application of what is learned in class to life, events, issues and concerns beyond the classroom. As further noted in the UNESCO's "Teaching and Learning for a Sustainable Future" (2002): " Experiences outside of the classroom also enhance learning by providing students with opportunities to practice skills of inquiry, values analysis and clarification, and problem-solving in everyday situations."

As students examine and investigate the topics in Social Studies, the teacher challenges them to explore, at their developmental level, such issues as:

- their awareness of the finite nature of many of our resources;
- the need to live in harmony with the environment and with others;
- the value of their cultural heritage and traditions;
- their responsibility and contribution in maintaining what's best for their community;
- the need to be sensitive and caring towards the elderly and the less fortunate in the community;
- understanding values and how these drive behaviour and actions, and can cause conflict;
- respecting the rights of others, and of those with different values;
- strategies for resolving conflicts.

Box 2. Example of an investigation/inquiry activity in Social Studies:

On the topic of 'Water Conservation', the teacher will go beyond mainly or merely defining and explaining the term, and giving examples. The teacher will engage them in a planned activity that would involve observing and monitoring water-use in the school, - or in their home and in the community. On prepared sheets, for example, students would list/record:
- the different uses of water observed,
- the frequency with which taps are turned on,
- whether the amount of water used was adequate or excessive,
- whether a different source/supply of water could have been used,
- how frequently taps were left dripping or running, etc.

The class could then research, suggest and examine ways/practices that could be adopted in order to better conserve the local water supplies.

It is in this context that Social Studies best reflects the principles of education for sustainable development (ESD): doing something to benefit the community through monitoring changes, analysing the results, sharing the findings, and taking action (Cambers, 2007). In fact, one may argue that Social Studies itself was developed on a framework of sustainable principles. This is further reinforced by the fact that many of the topics normally treated in the Social Studies curriculum are, in fact, related to the concept of development and to the notion of sustaining our society and environment. Examples of such topics are:

- resources,
- culture,
- tourism,
- social institutions,
- pollution,
- the physical environment,
- teenage pregnancy,
- child abuse,
- population growth and change,
- values and attitudes,
- industrial activity,
- and so on.

Each of these topics is essentially related to issues of sustainable development.

Sustainable development not only addresses environmental and scientific issues; it is equally concerned with social issues and behaviours, - including values and outlooks, interpersonal relationships and with helping others who are less fortunate.

COMMUNITY SERVICE LEARNING

What is it?

One particularly useful teaching/learning technique employed in Social Studies is that of **community service learning**. Burns (1998) has defined this technique as "...an interdisciplinary instructional strategy that facilitates the development of knowledge and skills, while helping students understand and accept civic and social responsibility." A broader definition is offered below (Box. 3) by the Alliance for Service Learning in Education Reform (ASLER, 1995).

Box 3. "A definition of Community ..."

The Alliance for Service Learning in Education Reform (1993:71) defines CSL as: a method

- by which young people learn and develop through active participation in thoughtfully organized service experiences that meet the actual community needs and that are coordinated in collaboration with the school and community,
- that is integrated into the young person's academic curriculum or provides structured time for a young person to think, talk, or write about what he/she did and saw during the actual service activity,
- that provides young people with opportunities to use newly acquired academic skills and knowledge in real-life situations in their own communities,
- that enhances what is taught in the school by extending student learning beyond the classroom and into the community and helps to foster the development of a sense of caring.

Community service-learning (CSL) focuses on combining what is being studied or taught in class with a specific activity that meets a clearly identified need in the community, - whether this community is within the school compound or outside the school walls. The 'community' to be served could be a single individual, or could be a group or an entire neighbourhood.

The activity itself must be co-ordinated with the topic being studied in class at the time; and it must have clear educational goals that require the application of concepts and skills related to the topic being studied. The activity must also involve tasks that challenge the students both cognitively and developmentally, and engage them in the active construction of their own knowledge.

The students must also be actively involved in the selection, planning and implementation of the activity; and student dialogue is encouraged throughout, as well as in the reflection that takes place before, during and after the service. This reflection will focus on such things as:

- the purpose and benefit of the service to the community,
- the students' sense of civic efficacy
- their personal development,
- what they learned, etc.

Community service-learning is therefore, in effect, a form of experiential learning.

Service learning thus offers a unique opportunity for young people to get involved with their community in a tangible way by integrating service activities with classroom learning. It engages students in the educational process, using what they learn in the classroom to investigate and solve real-life problems. Students not only learn about democracy and citizenship, but they also become active, contributing community members through the service they perform. By providing an outlet for them to apply what they have learned to real-life situations, the activity helps students realize that they can indeed have an impact. It also helps students to build character and to become active participants in the school and the community, as they work with others to create service projects in a variety of areas such as public safety, culture, and disadvantaged groups.[1]

The technique of service learning has the further advantage that it can be applied across all grade levels; and the 'community' involved can be an entire neighbourhood, or school, or a group of persons, or a single individual.

TYPES OF COMMUNITY SERVICE LEARNING

Service-learning activities can fall into three categories. Direct service refers to those activities which require student participants to engage in direct, face-to-face interactions with the recipients of the service; while indirect service involves working, in a supportive role, through or with another individual, group or agency that provides a direct service. The third type of service-learning activity is advocacy in which the students mainly work to raise awareness about an existing need in the community by advertising it in order to motivate community or individual action. The box below also offers an illustration of how a service learning activity provided to a nursing home can be structured as either direct service, indirect service, or advocacy.

[1] It is important to note that CSL is not merely performing a community service. Community service is essentially voluntary, largely extra-curricular and done out of a sense of charity. But CSL is a learning activity linked to what is happening in the classroom or school, and is evaluated as part of the student's classroom work. Community service, as such, ripens into CSL when there is a deliberate connection between the service and explicit classroom activities that are accompanied by periods for reflection on the experience itself.

Box 4. **Examples of the three types of service**

Direct service :
- Advising and helping a community to eliminate sources of stagnant water as breeding grounds for mosquitoes.
- Regularly visiting with residents of a nursing home.*
- Collecting and monitoring water quality in connection with a local water pollution problem.
- Working with the relevant government agency to address a local conservation issue.

Indirect service:
- Collecting canned goods for donation to a homeless shelter.
- Making holiday cards to be delivered for distribution at a nursing home.*
- Assisting in a fund-raising drive to help restore an historic building.

Advocacy:
- Creating and passing out pamphlets publicizing a local hazardous waste-collection site.
- Researching and submitting articles to the local newspaper on the benefits of neighbourhood recycling programmes.
- Writing letters to the media promoting a particular cause. (eg. Support/funding for nursing homes).*

See also the Appendix 1 below.
*Activities re nursing home.

For younger students (K-2, ages 4-6) service activities related to 'advocacy' or to 'indirect service' are developmentally more appropriate and manageable; but for older students, including those in secondary school, the activities can be varied across all three categories. Similarly, service learning activities for older children can be planned for a longer duration (up to perhaps one week or longer); while those for younger children should be no longer than 2 or 3 days, depending on the nature of the activity.

PLANNING AND IMPLEMENTING A CSL ACTIVITY

There are six important steps involved in undertaking a service-leaning activity. (Close Up Foundation, 2000).

Step 1. Identifying the "Community"

Together, the teacher and the class will first identify the 'community' they wish to serve. This 'community' may be as large as an entire neighbourhood, or it may be as small as a single individual. There must, of course, be some evidence of a problem(s) in the community that is (are) directly related to the topic being studied in class. This can perhaps best be addressed by (I) dividing the class into teams, and (II) having each team brainstorm a list of different things in the 'community' that they are concerned about. One student from each team will then share their list with the class. Some contact will also be made with relevant individuals or officials in the community in order to get feedback on the idea of undertaking the activity, and on the kinds of permission or clearance, if any, they would need to seek.

Box 5. **The Six Steps in Planning and Implementing a CSL Activity**

1. Identify the 'community', and some of its problems related to the topic being studied in class.
2. Research the problems and select one that is a manageable.
3. Analyse and evaluate the public policy/position on the problem.
4. Design and implement a service-learning activity.
5. Students reflect on the project; and teacher evaluates student learning.
6. Students report on the outcomes, and their work is recognized.

Step 2. Selecting the community need and the service activity to be performed

Have the students examine and evaluate the list of concerns identified. They will then select a problem and offer suggestions for a solution. Have them discuss only solutions that are realistic and feasible. The groups will each examine considerations such as:

- Is there a community organisation already in place to deal with that problem and, if so, could it use some help?
- Would the project require money and/or resources?
- How can the school/class help?
- How can all students in the class be involved?

- What are some potential challenges?
- What type of service activity will be more appropriate: direct, indirect, or advocacy?

If more than one option – for a problem and solution- emerges, the teacher may divide the class into groups to consider a service activity for each option. The groups will re-convene to present their outlines, and after further discussion on the alternatives, a vote is taken to select the preferred option for the service activity.

In making the final selection, consideration must be given to a problem and solution that:

- is manageable for the students in the class,
- is most likely to affect the community in some significant way,
- is clearly topical and of urgent concern to the community,
- would be interesting for the students to undertake, and
- has the potential for significant learning to take place.

Step 3. Getting to know the 'community' better

The students, as a class or in groups, collect background information on the community. They also examine the official government, or other existing policies on the situation in the community. They also find out what measures, if any, are being undertaken in the community with respect to the problem selected.

As early as this stage, students will begin to use their journals to record their reflections on how they feel about:

- their own involvement in the planning and preparation,
- the community,
- the service activity, and
- the problems, ideas and solution(s) discussed.

Box 6. **A Service Learning Activity - 1[2]: *Direct service***

Grade 5, Age 9-10.
From a Primary school in Barbados.

Class Topic: *Health and the environment.*
In this example, the class had been examining environmental health threats such as: the accumulation of garbage, pollutants, stagnant water, etc. They had identified situations after a heavy rainfall, as well as containers kept around the home that was sources of stagnant water. Coming out of the discussion in class, it was decided to undertake a service learning activity in the local neighbourhood around the school [1] as a direct service [2]. The agreed topic for the project was: *"Stagnant water breeds mosquitoes – Danger to your health!"*

An environmental health officer was invited to speak to the class on 'The dangers of stagnant water and mosquitoes' and on related government health policies for the community [3].

In preparing for the project [4], the class was divided into teams of about six students each which worked on:
- Collecting and creating brochures/pictures of the life cycle of the mosquito.
- Researching information on mosquito-borne diseases such as malaria, yellow fever, dengue, encephalitis, etc.
- Researching the different types of mosquitoes.
- Researching places where mosquitoes breed and thrive.

One student came up with the idea of a poster showing the skull and cross-bones next to a source of stagnant water!
The class also agreed to spend one morning in the community where, in groups, they would be engaged in visiting homes in order to:
- Hand out, to residents, brochures and information stressing the dangers of mosquito-borne diseases.
- Remind them that mosquitoes breed and thrive in stagnant water.
- Encourage and helping householders to check around the home for containers that may hold water, and to empty them, turn them over, or dispose of them.
- Wish them good health.

In their reflections [5], the students indicated that they had fun displaying their knowledge, and pronouncing words such as 'encephalitis', and 'hemorrhagic fever'. They also reported a sense of satisfaction from doing something to help others; and noted the good wishes they received from the older persons they visited. They also realized that they too need to pay greater attention to containers around their own homes, which could provide breeding grounds for mosquitoes. The students generally seemed to better appreciate the work of the environmental health officers.

In terms of public recognition [6], through the efforts of the environmental health officer who had visited the class, the local media was informed of the activity; and it was filmed and featured in the local television news the following day.

Step 4 . Planning and implementing the service learning activity

Applying the knowledge and insights gained from the discussions and research so far, the students will plan and implement the service-learning activity to address the problem identified. The teacher and students together will.

I.   Write the academic and social objectives for the activity.
II.   Determine the tasks and procedures to be done in order to complete the activity.
III. Determine: the duration of the project, the time of the day when it will be executed, the resources, the arrangements for any permission/contacts, etc.

The students will also be informed, at this point, on how they will be evaluated – whether through oral, visual or written presentation, by observation, the use of a rubric, a test, etc. See below under 'Assessment'.

Tasks will be written and assigned to different individuals or groups of students to ensure that all students are actively involved in the activity. In the example of a Social Studies investigation given in Box #2 above, the class could, for instance, take it further to the next level. The class could, for example, then develop and execute a plan or campaign in the school or in the community to promote 'water conservation'- ideally with input from an officer from the local 'Water Authority.' The different skills and talents of the students would be applied in:

- Preparing posters on water use and conservation.
- Drawing graphs of water-usage and possible water-savings.
- Mounting contrasting pictures/cartoons of 'good practice' versus 'bad practice'.
- Demonstrations, if possible.
- Creating a scenario of what may happen if water shortage becomes acute.
- Highlighting government policy/incentives on water use and conservation.

These materials could be used to promote water conservation in the local community, or as a display at the school. If water-use happens to be of particular concern in the local community, the project may get the attention of the local media!

Such an 'advocacy' activity would be appropriate, in a simple format, for Grade 1- 2 [6-7 yrs]. At the secondary school level, however, the teacher and students may wish to introduce more elements of direct and/or indirect service. See also Boxes 6 – 8.

At this stage, the teacher will inform the students clearly on how they will be evaluated (eg. through a presentation, by observation, the use of a rubric, etc). The teacher could now, if he wishes, assess the students' work done in the research, planning and preparation for the service learning activity/project. This would involve the information, brochures, posters, etc that were provided, as well as the nature and quality of the different tasks planned for the project. Using a checklist or a rubric, the teacher may also wish to do an evaluation of the level of co-operation, helpfulness and motivation shown by students, individually as well as in groups.

Box 7. **A Service Learning Activity – *2: Advocacy***

Grade 3, Age 7- 8.
From a Primary school in St Kitts.

Class topic: Workers in Our Community.
The class had recently examined the production of sugar-cane, using video, class discussion and a visit to the sugar factory. (This occurred just prior to the closure of the factory and the abandonment of sugar cultivation in St Kitts). The lesson topic now centred on persons who work in the sugar industry: the kind of work they do, their role in the industry, and some of the problems and concerns they face. It was decided to undertake a community service learning activity to highlight some of the problems and disadvantages faced by this 'community' [1]: "Appreciating Our Agricultural Workers", and to advocate [2] for better conditions.

For a better insight into the 'community [3], a resource person from the Ministry of Labour was invited to address the class on the role of the sugar workers and some of the problems in their working conditions. The students also questioned the speaker on how these problems could be addressed, and on government policies relating to agricultural and sugar workers. Some of the problems that emerged related to (I) wages, (II) working in the sun all day, (III) holidays and vacation, (IV) low public esteem.

For the advocacy activity [4], the class discussed ways, strategies and tools that could be used to (I) highlight different aspects of the plight of the workers, and (II) advocate on behalf of them. They selected, and used their creativity to produce:

- Poems.
- Posters, and pictures.
- Illustrations.
- Letters.

One of the letters was addressed to the local political representative, and one to the local newspaper – both arguing for improved pay, working conditions and greater appreciation for the sugar workers.

In their reflections [5], the students indicated that they had learned much and now had a greater appreciation for the workers and for the value of agricultural work. They also shared their personal experiences in working on the activity, and indicated that they will begin to pay greater attention to social issues and conditions in their community.

Their public recognition [6] came in their participation in a school display on 'Workers in our Community'. Here they presented their posters, poems and other products about better working conditions for the agricultural workers.

Step 5. Reflection- in-action, and assessing the CSL activity

As the class implements the activity, students must be provided with opportunities, both individually and in groups, to reflect on, and evaluate the activity and their own learning. Individual opportunities, such as one-on-one conferences and journal writing, give students a chance to think about:

- their own assessment of how the activity has worked,
- what they have learned,

- their personal story,
- how did the community benefit and react,
- what did the project accomplish,
- how did the experience enable them to explore/understand the content of the academic course they were studying in class.

Towards the end of Chapter 3 above, under Step 2.4, there are some additional questions that would also be very useful in prompting students into reflecting on what was done, accomplished and learned.

Reflection is therefore critical to learning. It serves as a bridge between the experience itself and learning; and it creates the potential for the activity to be a meaningful, transformative process with respect to students' our thinking and behaviour.

In addition to their reflective journals, students will also work together to put together a narrative description of the activity, complete with pictures, exhibits, write-ups, recordings, and so on. These will be organised, and submitted for assessment, according to the expectations of the assessment procedure as would have been indicated to students in Step 4.

Step 6. Publicly recognizing the students' work

The teacher arranges for the students' work to receive public recognition. This can be accomplished in a variety of ways including, but not restricted to the following: (I) having them present a report to the entire school, or (II) engaging them in mounting a public display in the community or local library, or (III) writing and submitting a newspaper article on it, or (IV) making a video recording of the activity for local television or for the Government Information Service, or (V) posting the project as internet information, or (VI) including a report of it in the school's or class newspaper[3], or (VII) awarding the class with T-shirts bearing an appropriate slogan. A local news report, on radio or television, might also be arranged at some point during the course of the project.

These forms of public recognition serve not only to boost the students' sense of achievement and civic efficacy; but they also provide recognition for the community itself. They may also act as an inspiration for other students to undertake some service for their community. The school and the young people are thus seen as contributing to a solution, - and not as part of the problem.

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[3] See Chapter 6 below by Paul Diamond for some guidelines on using Information and Communication Technologies in ESD.

Box 8. **A Service Learning Activity – *3: Direct Service***

Grade 10, Age 14-15.
From a Secondary school in Dominica.

Class topic: *Elections and Voting.*

A senior class at this secondary school were doing a unit on 'Government and politics'; and discovered that a very low percentage of young people of voting age actually voted in elections. They therefore agreed to undertake a community service learning activity to find out the percentage of young people in the local 'community' around the school [1] who do vote and to encourage more to do so.

For this direct service [2], one group researched the community [3] by examining the data from the Electoral Office on voting patterns among young people (age 18-21). It was discovered that less than 30% of young people in the 'community' had ever voted. Another group examined the electoral laws and policies on voting.

In planning the activity [4], a third group constructed a questionnaire on voting attitudes and practices; while another group made arrangements for holding meetings, having presentations on voting by community leaders and persons in politics. These presentations generated some lively discussions on democracy, civic responsibility, and whether politicians and governments value voters' views and opinions, or only their votes.

In their reflections [5], most students admitted that they held similar views to the youth in the community about whether their opinions and ideas really matter to politicians and whether their votes matter that much. They admitted that they need to confront these views as they try to convince others to vote! The class was also able to point out many benefits from the exercise.

Public recognition for the class [6] came mainly in their public participation in the meetings and discussions, and in their interaction with their older counterparts and knowledgeable resource persons.

ASSESSING CSL ACTIVITIES

Community service learning activities, by their very nature, cannot be readily or effectively assessed through traditional methods or instruments. The students are engaged in a variety of learning experiences such as planning, thinking, cooperating, reflecting, researching, finding and processing information, and analysing and evaluating. In order to effectively and reliably assess student learning therefore, the teacher is encouraged to use a variety of assessment methods and tools in order to target and test different skills, competencies and learning behaviours. (See also Box 1).

These methods and instruments could include, - but are not limited to:

- Observation schedules.
- Creative expression (role-play, drama, poetry reading)[4]
- Checklists.
- Personal interviews.
- The use of rubrics.
- Oral, visual or written presentations.

See Appendices 2-4 for examples of assessment instruments.

Assessment in CSL should also extend to the service activity or project itself. Feedback on the process involved will provide useful information for both teacher and the students, as well as the constituents of the community. This feedback will enable them to improve the quality and effectiveness of such activities. Such feedback could also address the matter of student enjoyment of the exercise.

For this purpose, questions to a sample of both students and recipients of the service, through questionnaire or interview, could consider such elements as: organisation and planning of the activity, cooperation among students and from the community, level of student involvement in planning, methods/procedures used to select the community, the time factor, resources, communication and instructions, the challenges faced, and suggestions for improvement. This, to some extent, will also represent a form of reflection.

Taking the time to pause and think about the activity and the process, will enable participants to better plan and execute further service learning activities.

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[4] See Chapter 2 by Grace Chapman for some suggestions on creative arts strategies.

CONCLUSION

The research evidence (Billig, 2000) suggests that community service learning has a positive impact on students' engagement in learning tasks, their academic performance, school attendance, and personal and social development. Students who engage in CSL also tend to develop a greater sense of civic responsibility and greater involvement in community organizations. They are also more likely to become actively involved in efforts to effect social change and improvement – change that could contribute to sustainable development.

Community service learning is also seen as an exciting concept that represents a change of pace from the normal classroom, as well as a source of engagement for less academically-minded students. It also provides an opportunity for students to feel useful and to experience a sense of having made a contribution to their community; and it can also enrich and enliven the curriculum as students realize that their activities are genuinely productive, and can make a difference.

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Some Useful Websites on "Community Service Learning"

www.closeup.org/servlern.htm
www.csf.colorado.edu/sl
www.communityservicelearning.ca
http://learningindeed.org
http://uofaweb.ualberta.ca/arts/CSLhome.cfm
http://nylc.org
http://learnandserve.org
www.educationworld.com/a_curr/strategy/strategy027

Appendix

APPENDIX 1:
SOME OTHER SUGGESTIONS FOR CSL ACTIVITIES

Topic in the Social Studies Syllabus	Potential CSL activities	Type of service
Workers/Services in Our Community	■ Visiting and caring for an elderly person.	■ Direct
	■ Working in a Senior Citizens Home.	■ Direct/ Indirect
	■ A volunteer project in a Daycare or Nursery.	■ Direct/ Indirect
	■ Tutoring sick or 'absentee' children.	■ Direct
	■ Advocating for better working conditions for a selected group of disadvantaged manual workers.	■ Advocacy
	■ Working with the local police to promote seat-belt safety.	■ Direct /Indirect
Culture and Heritage	■ Project to revive a festival or cultural activity that is dying.	■ Direct/ Indirect
	■ Advocating for the preservation/ upkeep of an historical building.	■ Advocacy
The Family	■ Baby-sitting at home for a needy family, or a teenage mother.	■ Direct
	■ Serving as a big brother/ big sister to a troubled youngster.	■ Direct
The Environment	■ Undertaking, or participating in, an environmental awareness project, or a clean-up campaign.	■ Direct/ Indirect
	■ Working with/through the local Disaster or Relief Organization.	■ Direct/ Indirect
	■ Helping a community eliminate mosquito breeding places around the home.	■ Direct/Indirect/ Advocacy

APPENDIX 2:
RUBRIC FOR ASSESSING THE 'LEARNING' IN A COMMUNITY SERVICE LEARNING PROJECT

	4	3	2	1
EFFORT	Student participate in all activities, contributed to each step of the process: brainstorming, organizing, implementing.	Student participated in most activities and was active throughout most of the steps in the process.	Student participated in at least half of the activities and contributed to at least two steps of the process.	Student participated in less than half of the activities and contributed to at least one step of the process.
COOPERATION	Student worked with class and with teammates effectively. He/she had no behavior problems with peers, and was encouraging to classmates.	Student worked with class and teammates effectively. He/she had no more than 3 behavior problems and was not discouraging to classmates.	Student worked with class and teammates with some difficulty. Had no more than 5 behavior problems was not discouraging to classmates.	Student worked with class and teammates ineffectively, had more than 5 behavior problems and was discouraging to classmates.
SCRAPBOOK PAGE	Caption and reflection are appropriate and accurate, with correct conventions. Page is aesthetically pleasing.	Caption is appropriate and accurate, with no more than 2 conventions mistakes. Page is aesthetically pleasing.	Caption is accurate. Reflection is present. No more than 5 conventions errors. Page is decorated.	Caption is present. Page has some decoration.
REFLECTION	Student detailed at least three ways that the project benefits the community; and also addressed what he/she learned from the project about working together and doing things for others. Clear evidence of deep personal reflection that indicates excellent evaluation of the importance of the service activity.	Student detailed at least two ways that the project benefits the community; and also addressed what he/she learned from the project. Some evidence, at times, of deep personal reflection that indicates excellent evaluation of the importance of the service activity.	Student completed the reflection. Mentioned how the project benefits the community and whether he/she learned anything. Little evidence of deep personal reflection that indicates an evaluation of the importance of the service activity.	Student completed the reflection; and mentioned if he/she learned anything. Little evidence of personal reflection; and no evaluation of the importance of the service activity.

EXAMPLE OF AN OBSERVATION CHECKLIST FOR CO-OPERATIVE GROUP WORK

	Yes	No	Can't tell	Comments
1. Group members ensure that each is clear about the task to be accomplished.				
2. Each group member actively participates.				
3. Group members engage in constructive classroom dialogue.				
4. Group members are supportive of each other.				
5. The group sticks to its task.				
6. The group checks its progress towards accomplishing its goals.				
7. The group records and summarizes what it has accomplished.				

EXAMPLE OF A CHECKLIST FOR AN EXHIBIT

1. Your exhibit must include the following elements listed below in order to receive a passing grade/mark.

2. Your exhibit will receive a higher grade/mark where these elements show evidence of:

■ Greater care and attention to detail.

■ Creativity.

■ Deeper level of analysis.

The Elements:

■ The exhibit explains the issue, using accurate information.

■ The exhibit indicates your position on the issue, and provides a logical argument to support it.

■ The exhibit effectively combines visual materials and text to convey information and to interest the viewer.

■ The exhibit is neat, properly organized, and easily understood.

■ The exhibit has a list of references that are (I) consistent in style, (II) adequate in number, and (III) balanced in types and sources.

Sandwatch: a Cross Disciplinary Approach to Education for Sustainable Development

Gillian Cambers

"Sandwatch takes you places you never dreamed of going and gives you knowledge that will not be acquired on ordinary occasions. I have been able to impart new ideas into my classroom sessions. Sandwatch is an experience you will never want to forget."

Marsha Gregg, Information Technology Teacher, Bequia Community High School, St. Vincent and the Grenadines.

WHAT IS SANDWATCH?

This chapter describes the Sandwatch project, a successful ongoing example of Education for Sustainable Development that is being implemented by children, youth and adults in many islands and countries around the world. Sandwatch allows school students, with the help of their teachers and local communities, to work together to monitor and critically evaluate the problems and conflicts facing their beach environments and then to design and implement activities and projects to address some of those issues.

The approach focuses on four main steps: (1) Monitoring the beach, (2) Analysing the results, (3) Sharing the findings and (4) Taking action (MAST). This approach may be compared with the approach for community service learning described in Chapter 4 of this Guide. A manual (Cambers & Ghina, 2005) describes in a step-by-step manner some basic methods for monitoring different aspects of the beach environment:

- Observing the beach and preparing a sketch map.
- How people use the beach.
- Debris on the beach.
- Water quality.
- Erosion and accretion.
- Beach composition.
- Waves.
- Longshore currents.
- Plants and animals.

Students can measure all or just one or two of these components; and the measurements are repeated over time. Having collected the information, the second step is to compile the data in tables and then to use graphs and charts to determine trends as to how a particular component changes over time. Sharing the results with other classes in the school, parents and the wider community is the third step. After listening to the responses, the students plan and implement a small beach-related activity that may address a particular issue or enhance the beach, or both. Box 1 illustrates how the approach was used by a primary school in The Bahamas.

The Sandwatch vision is to change the lifestyle and habits of children, youth and adults on a community-wide basis, and to develop awareness of the fragile nature of the marine and coastal environment and the need to use it wisely.

Box 1. **Sandwatch in The Bahamas: Share Our Care - - - - Be Aware**

Over a 12-month period, students aged 10-11 years from Hope Town Primary School in Abaco, Bahamas, measured various beach characteristics and how they changed over time. They interviewed beach users and recorded their activities: walking, swimming, sunbathing and snorkelling. They observed the different types of boats and found that sport fishing and tourist rental boats were the most common. They measured the width of the beach and observed how it was eroded and virtually disappeared during the 2004 hurricanes. They used a simple kit to measure water quality. After recording and counting the different types of beach debris they used their art classes to make decorative items with the discarded material.

After graphing and analysing their data they concluded that one of the main issues was that visiting tourists were damaging a small reef located about 20 m from the beach. They had observed visitors standing on top of the coral reef to adjust their masks, breaking off pieces of coral to take as souvenirs and even spearfishing close to the beach.

They designed a special questionnaire to find out how visitors viewed the reef. After discussing the results of their questionnaire survey with the rest of the school, their parents and a local environment group, they decided to try and educate the tourists by designing a brochure on proper reef etiquette. Copies of the brochure were placed in hotels and nearby rental properties. The brochure was well received and the school's students, with the help of their teachers are continuing to raise awareness about their fragile beach and reef environment.

Tourist brochure produced by students at Hope Town Primary School.

WHO CAN GET INVOLVED IN SANDWATCH?

Anyone can get involved in Sandwatch – whether you represent a primary or secondary school, a youth group, a church organization or a community group. Any interested group of persons can start Sandwatch. There is no need to make a special application or request. However, Sandwatch is not just an approach, it is a network and more information is available at the end of this chapter and on the website (www.sandwatch.org). This network allows Sandwatchers from all over the world to keep in contact and learn about each others activities, so if you are new to Sandwatch and want to get involved, please consider becoming a part of the network.

Who supports Sandwatch?
Sandwatch is supported by the United Nations Educational, Scientific and Cultural Organization (UNESCO); other regional partners include the University of Puerto Rico Sea Grant College Program and Live and Learn Environmental Education. There are also numerous national partners in island territories and countries in the Caribbean and beyond, including Africa, the Pacific and Indian Oceans and Europe. Most of the people and groups working in Sandwatch do so as volunteers.

What age students can get involved?
Sandwatch can be adapted for students of any age from between 7-18 years.

Can Sandwatch be done in the classroom alone?
Sandwatch cannot be done in a classroom alone, it is essential that students go outside the classroom and experience the beach environment. In many countries taking students outside the classroom during class time represents a major hurdle due to government regulations. Many teachers and schools in the Caribbean have overcome this hurdle by holding the field sessions on the beach during weekends or after school hours.

How can primary schools participate in Sandwatch?
Primary schools in The Bahamas, Dominica and Trinidad & Tobago, are among those who are successfully implementing Sandwatch and informally adapting it into different parts of the curriculum, e.g. observing the beach and making a sketch map can be integrated into social studies; counting beach users and drawing a graph can reinforce mathematical concepts; understanding and using a compass can help in understanding the earth and magnetism; and writing a story or poem about the beach can utilize language and creative skills. A student, Alana Stanley, who was involved in Sandwatch at Mayaro Government Primary School in Trinidad wrote:

"One of the activities that I am involved in is collecting data on wave intervals. When my teacher first told me about it, I said to myself, That's boring. Was I in for a rude awakening? Boring? Ha! It was the first time I got to use a stopwatch. Since my first experience, many mathematical problems have become clearer to me and I now have begun to enjoy maths, simply due to my experiences in Sandwatch. Sandwatch has not only helped me in mathematics, but I have a better appreciation for and a greater understanding in geography and science." (Stanley, 2006).

How can secondary schools benefit from Sandwatch?

Many secondary schools are also involved in Sandwatch, using the different activities to strengthen and reinforce the curriculum. Box 2 illustrates some of the ways this is being achieved.

Box 2. **Sandwatch Reinforcing the Curriculum in Secondary Schools**

- In science, Sandwatch provides the opportunity to apply the scientific method to explain the changes in the natural environment (developing a hypothesis, making measurements, analyzing the results, discussing the findings and testing the hypothesis); it is directly applicable to environmental studies and basic sciences (biology, chemistry and physics); it helps students learn to use simple instruments to make accurate measurements.

- In mathematics it can help reinforce concepts of trigonometry and in applications of statistics.

- In social studies students learn how people interact and change their environment; Sandwatch develops map-making skills and the concept of place; it facilitates interaction with people from other countries and learning about their culture and lifestyles.

- In information technology it strengthens computer skills such as word processing and database management. Sandwatch can also introduce students to the world of information sharing through video production and webcasts.

- The use of language skills comes into all aspects of Sandwatch through creative writing, reports, storytelling, keeping journals, spelling, newspaper articles as well as through drama, poetry, calypso and music.

- Creative arts and crafts can translate a table of data into a visual picture thereby developing artistic and imaginative skills that also help in sharing the information with other groups; designing and making signs, pamphlets and reports also provides artistic opportunities.

In addition, Sandwatch projects frequently form the subject of school based assessments for the Caribbean Examinations Council; topics have included coastal erosion, coral reef degradation, water pollution, and how Sandwatch has impacted the community. In some Caribbean islands extra-curricular clubs and groups have adopted Sandwatch, e.g. the Environmental Club of the Castries Comprehensive Secondary School in St. Lucia are involved in Sandwatch and they monitor, care for and beautify a 1 km stretch of beach.

Is Sandwatch part of the formal school curriculum?

So far, only the Cook Islands in the Pacific has formally integrated Sandwatch into their school curriculum. Teachers, and staff from the Curriculum Advisory Unit of the Ministry of Education, worked together to test the Sandwatch activities and identify specific areas of the curriculum where they could be integrated. Now school students in the Cook Islands are learning about Sandwatch in their science curriculum, specifically the Living World Unit and the Earth and Sky Unit, and in their social science curriculum through the People, Place and Environment Unit (Cambers *et al.*, 2008).

Can students with special needs get involved?

Sandwatch has scope beyond specific classes and defined age groups. One of the entries to the International Community Sandwatch Competition held in 2005 was a combined effort from Cuba involving students ranging in age from 7-18 years from a secondary school, an art school and a school for children with special needs. A visitor to the latter school wrote: *"A colleague we met mentioned that because the autistic children took part in the Sandwatch project, others could clearly see that these children had lots to offer." (Hunter, 2007).*

Can a community start Sandwatch?

School students involve their communities in Sandwatch activities by sharing their findings and implementing projects, but the community itself can also be the starting point. For instance in St. Vincent and the Grenadines, mining gravel from the beaches at Richmond and Larikai provides an economic activity for a women's group but also causes serious beach erosion problems. The Sandwatch group from the Bequia Community High School are working with the women to monitor beach changes and extraction volumes with a view to determining safe and sustainable levels of gravel removal.

HOW TO GET STARTED

If as a teacher having read this chapter, perhaps you are now keen to get started with Sandwatch – what are the next steps?

Finding out more about Sandwatch

The first step will be to try and find out as much about Sandwatch as you can. One of the best sources of information is the website (http://www.sandwatch.org) which is updated regularly and provides a wealth of hands-on information. There you can download and read the manual, various country reports on Sandwatch activities, and the Sandwatcher Newsletter, which is published in English, French and Spanish several times a year and contains articles from teachers and students. You might also want to visit some of the individual country sections and see some of their activities and photos.

You might also like to partner with another Sandwatch school in your country or in a different country. This way you can direct your questions to other, more-experienced Sandwatch teachers. To find a suitable partner school or teacher, just email any of the persons on the Contacts page of the website and they will be happy to help you link up with another Sandwatch teacher. As described in Chapter 6, websites provide a way to link up with unknown persons and organizations that may be able to help you – or alternatively you may be able to help them.

Forming a Sandwatch committee at your school

While many schools have one innovative teacher who is a leader and champion of Sandwatch activities, it is always helpful to adopt a team approach. This makes the activity more sustainable should the innovator leave the school. Furthermore, since Sandwatch is such a multi-disciplinary activity it is helpful to involve other teachers and school staff with different backgrounds and skills. However, a word of caution, organizing a large committee involves a lot of extra work, so perhaps at the beginning a small group of about three people is a good starting point. The Sandwatch team can always be expanded later.

Getting some outside help

While Sandwatch comprises a series of very simple straightforward activities, you may wish to involve other professionals in your programme. For example the Sandwatch group at the Robinson O'Neal Memorial Primary School in the British Virgin Islands found high levels of coliform bacteria at their sampling beach and they were puzzled by the results because that particular beach was a pristine one with no development in the vicinity. Their teacher contacted a biologist at the Conservation and Fisheries Department who came and talked to the students and helped them analyse and understand their results.

Finding and contacting colleagues at a community college, teacher training college or university in your country may provide you with some back-up support should you need it. Other sources of help may be available at a government department dealing with the environment, planning or public heath. Many such departments have outreach or education programmes as do environmental NGOs. Your country's National Commission for UNESCO may be able to provide support, contacts and additional help.

Checking coliform test results.

Selecting a beach to monitor

There are several factors to consider here.

- The first and most important factor deals with safety. The beach should provide a safe environment for the students, so it is best to try and select a **more sheltered beach**, not one where high waves and strong currents are prevalent. This does not mean Sandwatch cannot be done on a beach with high wave energy, rather that extra care and safeguards will be needed.

- **Accessibility** is another important consideration. It is important to select a beach that is easy to get to, preferably one near the school and within walking distance.

- The selected beach should be one that is used and **valued by the community**. For example, if local residents use the selected beach for recreation or fishing or some other activity, they will be interested in the students' Sandwatch activities. Similarly, if the beach is a favourite destination on public holidays, or is used for local festivals, or is undergoing serious erosion, then this might be another factor to consider in the selection process.

- The **size** of the beach is another important characteristic. Some beaches are small, only a few hundred metres in length while others extend for many kilometres. An ideal beach length for a monitoring project is about 1 km. However, if you have selected a longer beach, then choose a particular section, about 1 km in length for the monitoring activities.

The Sandwatch group at the Goodwill Secondary School in Dominica selected this small beach at Pottersville for their monitoring activities because it was near their school, very popular with local residents, and has serious erosion problems.

Obtaining Sandwatch equipment

It is possible to get started and measure some beach characteristics without any special equipment. So obtaining equipment need not be an obstacle to beginning Sandwatch. It is up to you to design your Sandwatch project to suit your own needs. For example, if you are teaching mathematics to a group of 10-year olds and you do not have access to any equipment, you might ask the students to observe the different activities in which beach users are involved (walking, jogging, swimming, playing ball, sunbathing, picnicking, fishing etc.), to count the numbers engaged in each activity and then to use the information to draw a pie graph.

Table 1 shows the basic equipment required for each activity, and where simple household materials can be substituted, they are listed in the third column. The only characteristic for which specialised equipment is required is water quality. Simple kits are available, but these have to be purchased.

Table 1: Sandwatch Equipment and Substitutes		
Sandwatch activity	**Equipment required as listed in the Sandwatch manual**	**Substitute equipment**
Observing the beach and preparing a sketch map.	Pencil and paper/notebook.	
How people use the beach.	Pencil and paper/notebook.	
Beach debris.	Tape measure, disposable gloves, garbage bags.	
Water quality.	Simple kit to measure temperature, salinity, dissolved oxygen, biochemical oxygen demand, phosphates, nitrates, coliform bacteria, turbidity (approximate cost from a US supplier is US$35 and the kit contains materials for several tests of each parameter).	A secchi disk can be made and used to measure water clarity, which also indicates turbidity.
Erosion and accretion.	30 m tape measure.	Any tape measure can be used here.
Beach composition.	Hand-held lens, plastic bags to collect the sediment, clear plastic sheet on which to spread the sand.	Any magnifying glass. A class from the Cook Islands used ice-cream containers to make a set of sieves to separate sand of different sizes, Nicholls *et al.*, 2007.
Waves.	Wave staff, stopwatch, compass.	A wave staff can be made using a piece of wood or bamboo and marking 10 cm intervals; a watch with a seconds hand can be substituted for a stopwatch.
Longshore currents.	Dye tablets.	Food colouring can be substituted.
Plants and animals.	Plastic bags for collections and a magnifying glass.	

Deciding which characteristics to monitor

While it is up to you to select which beach characteristics you want to measure, there is one activity that is so important that it is really the starting point for every Sandwatch activity – and that is observing the beach, recording the observations and making a sketch map, see Box 3.

Box 3. Observing, Recording and Making a Sketch Map

Divide the students into groups or pairs and have them walk the length of the beach observing and writing down what they see and where they see it. If the beach is very diverse, then the different pairs or groups might be given different things to look for, e.g. one group might record buildings and roads, another group vegetation and trees, a third group what people are doing at the beach, etc. If available, students can bring a digital camera to the beach as well as identification books or field guides.

Items to look for include:

■ Beach material: size (sand, stones, rocks), colour, variation in material along different sections of the beach.
■ Animals, e.g. crabs, birds, domestic animals, shells of animals.
■ Plants and trees, e.g. seaweeds and seagrasses, grasses, plants, trees behind the beach.
■ Debris, litter, pollution, e.g. garbage on the beach or floating in the water.
■ Human activities, e.g. fishing, fishing boats on the beach, sunbathers, walkers, people jogging, sea bathers, swimmers, picnic groups.
■ Buildings behind or on the beach, e.g. beach bars and restaurants, houses and hotels, public accesses to the beach, litter bins, signs, lifeguard towers, jetties etc.
■ Sea conditions, e.g. is the sea calm or rough.
■ Objects in the sea, e.g. mooring buoys, boats at anchor, buoyed swimming areas.

Encourage the students to make detailed observations, e.g. 3 trees, two palms and one seagrape tree. Back in the classroom the students prepare a sketch map of the beach; this can be done in groups or as a class exercise.

The sketch map then becomes the starting point for discussion about issues and problems at the beach, and also for deciding which characteristics to monitor.

Developing a time line for the beach can provide additional information. Students can interview members of the community and local officials to find out how the beach has changed over time; they can also study aerial photographs and topographic maps to determine actual physical changes.

If equipment is available, students may use disposable or digital cameras to take ten photos of things they like about the beach and ten photos of things they dislike. Making a mural with the photos helps to focus discussions about beach problems and what to do about them.

Deciding how frequently to monitor

The frequency of monitoring can be decided by the teacher and also depends on the characteristic that is being monitored. If measuring beach width, this could be done every week, every month or just twice a year, although if a big storm takes place, there might be some interesting results if the beach could be re-measured after the storm. Similarly, interesting changes in water quality may be measured after a heavy rainfall event. If measuring the way people use the beach, then comparing data from a weekday, a weekend and a public holiday might provide interesting comparisons.

Maintaining a level of flexibility

The environment changes all the time both naturally and as a result of man's actions, so it is always important to have a flexible attitude when it comes to Sandwatch. For example, in 2004, students on the small Bahamian island of Abaco had monitored their beach for several months, when it was hit by three hurricanes in a period of three weeks. As a result of the hurricanes, they had no beach to monitor, so they turned their attention to adjacent ecosystems: the mangrove stands and the coastal pine forests. They observed how these ecosystems recovered faster than their test beach, which did not show much natural recovery and instead required the placement of large volumes of sand from the offshore zone.

Also in The Bahamas, another school worked on South Beach on the island of New Providence. This beach was very dirty and the students combined an educational campaign with the placement of new litter bins consisting of 55 gallon oil drums with environmental messages painted on them. Unfortunately all their new litter bins were stolen, and they had to come up with a different solution. So with the help of some publicity from a local TV station, a private company provided a large industrial size bin that could not be easily moved or stolen.

ANALYZING THE RESULTS

Being out on the beach, observing and measuring is always a fun activity for the students. But putting the results together and making the numbers tell a story can be equally interesting. And without analyzing the data there is no point doing the monitoring. A school environmental club has been measuring Vigie Beach in St. Lucia, with different groups of students being involved each year (St. Joseph's Convent Secondary School, 2007). They have developed a sound database of changes in beach size, wave action, beach composition, debris, and water quality over the five year period based on measurements made once or twice a year.

This graph shows how the width of Vigie Beach (St. Lucia) has changed over time at three different locations. At Site A the beach has become narrower over time. At Sites B and C there were dramatic changes in beach width. A newly constructed groyne near Site C resulted in accretion at Site C in 2005 and corresponding erosion at Site B, illustrating how structures such as groynes influence the way beaches behave.
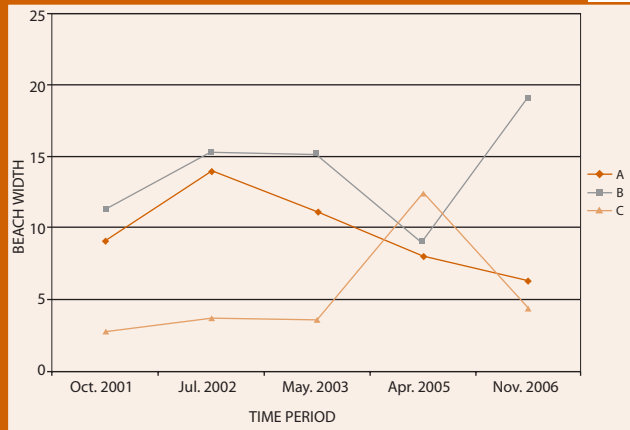
Helping the students understand that change is not uniform but may take place in different directions at different places and times is critically important to understanding natural systems so that planned activities or interventions are based on sound science and therefore more likely to fulfill their objectives. For example, a tree planting project if implemented during a period of calm seas, and if executed without sufficient monitoring and preparatory work, may see those same tree seedlings being washed away by the sea during a period of high seas that might occur during the winter months.

SHARING THE FINDINGS

There are two main reasons for sharing the findings, firstly to tell other people and groups about the Sandwatch activities since this may encourage them to get involved; and secondly to receive feedback from the audience who may have useful historical or other information about the beach. Once the beach has been monitored for a period of six months or a year, the findings can be shared with other groups, such as:

- Other classes in the same school.
- Other schools.
- People in the local community, including the community representative.
- Government agencies and NGOs.
- Parent Teacher Association.

Presenting the results to the target group requires careful preparations.
Powerpoint is a very powerful tool if the students are sufficiently advanced, although it is not the only visual tool available. Displays, physical models, art work, stories, poetry, drama and music are other ways of depicting the results. Presentations can be combined with a visit to the measured beach to provide firsthand insight into the issues and findings being discussed.

Conferences, exhibitions, exchanges and fairs are another way of getting the word out and receiving input on your work. In 2007, the Cook Islands held a Sandwatch Learners Conference, where all the schools involved in Sandwatch met to present their findings, and it was the students themselves who gave the presentations and fielded the questions (Taurarii and Townsend, 2007).

TAKING ACTION

This component is what distinguishes Sandwatch from other environmental monitoring activities and truly makes it an example of education for sustainable development. Taking action to address one of the identified issues or to enhance the beach is the fourth step of the Sandwatch approach. It is the culmination of all the other stages and is based on sound science and extensive consultation.

Hold a discussion session with the students and ask them to think of ideas for different projects and actions relating to their beach. It is advisable to keep the project simple by focusing on one particular activity and to keep a list of the other ideas for future projects. Examples of the types of Sandwatch projects include:

- Tree planting behind the beach.
- Planting and conserving sand dunes.
- Beach beautification activities.
- Beach and underwater clean-ups.
- Promoting recycling at the beach.
- Placing informational signs at the beach.
- Preparation and distribution of educational brochures and videos to specific target groups.
- Murals, dramatic presentations and exhibitions to create awareness among the general public.
- Influencing tourism developers about the fragility of the beach.
- Relocating endangered species, e.g. iguanas threatened by development.
- Conserving sea turtles, e.g. monitoring nesting activity and protecting nests.

Box 4 describes two specific Sandwatch projects.

Box 4. Specific Examples of Sandwatch Projects

PROJECT ON BEACH SAFETY

Students from the Green Cell Environmental Club of Ellerslie Secondary School in Barbados were concerned about the number of complaints from beach users, including tourists, about horse riding and loose dogs on the beaches and the threats to the safety and comfort of beach users. Their research covered the health aspects including the 'beach worm', which can be transmitted to humans via the faeces of dogs and horses. The Club members designed a questionnaire and conducted a public opinion poll among the community of beach users. The results showed that the majority of beach users felt that dogs and horses should not be exercised among beach users. Health and safety issues were the main concerns. The group shared their findings with the rest of the school and the responsible government agencies.

Addressing inland pollution

Students and their teachers from Bequia Community High School in St. Vincent & the Grenadines focused on the Paget Farm area of Bequia, where a blocked drain was causing severe pollution and health problems for the coastal community. They monitored the water quality and their results showed high levels of pollutants. After sharing the findings with the community they joined together to clear the drain, erect silt traps and beautify the area. Their efforts were publicized through the local television station. A local community group committed to keeping the newly cleaned area well maintained.

Students and community members clearing the blocked drain.

Some important steps in designing a project and preparing an **action plan** are the following:
- Define the project's objective(s): be specific and identify what you hope to achieve at the end of the project.
- List the project's activities and place them in a consecutive and logical order.
- Estimate the time frame for project implementation.

■ Determine if the project requires support or funding from outside the group; if so, identify the nature of the support required and likely sources to approach.

■ Prepare a simple table (see Table 2) showing for each activity the time frame, participants and resources required.

Table 2: Sample Project Action Plan		
Action	**Time Schedule**	**Persons Involved**
1. Measure the proposed planting area.	January 8-20	Class 4 students and Teacher Ms. Ingram.
2. Design the planting layout.	January 21 – February 20	a. Class 4 students and Teacher Ms. Ingram, and Mathematics Teacher Mr. Browne. b. Resource persons to be identified from Environment Agency and Agriculture Department. c. Persons from the community and community leader.
3. Identify a date for planting.	20-28 February	Class 4 students, teachers, experts from Environment and Agriculture agencies, Meteorological Office, community leader.
4. Plan follow-up care of plants.	1-31 March	Class 4 students, teachers, experts from Environment and Agriculture agencies, community leader, Parents Teacher Association.
5. Prepare for planting.	1-30 April	Class 4 students and teachers.
6. Plant trees.	6 May	Class 4 students and teachers, community, government agencies, press, elected representative.
7. Monitor and care for trees.	7 May and continuing for 1 year	Class 4 students and teachers, community members.

Activities and Resources Needed	Expected Outcome
a. Visit to beach to measure the area. b. Tape measure, paper and pencils.	a. Sketch map showing areas to be planted. b. Dimensions of area to be planted. c. Photos of the area to be planted.
Conduct research, talk with community members and leader, and consult with government experts about types of trees and their availability, spacing between seedlings, and type of follow-up care required.	a. Diagram showing planting pattern. b. Numbers of seedlings and species of tree to be planted. c. List of equipment needed e.g. spades, compost or fertilizer.
Consultations taking into account the expected start of the rainy season.	Identification of a date for planting.
Research, consultation with local experts.	List of follow-up care requirements e.g. water needs, mulching.
a. Arrange for seedlings, fertilizer and spades to be collected from Agriculture Department and delivered to the school. b. Contact the media to promote the event. c. Arrange for water and food for persons doing the planting.	a. Materials and equipment in place for planting. b. Media informed and ready.
Plant trees.	a. Trees planted. b. Event covered by the media. c. Planting recorded with photos and video.
a. Seedlings watered and cared for. b. Number of trees surviving recorded.	Report describing and evaluating the activity.

Careful planning is essential for a good project

So too is evaluation of the project's results since this provides an opportunity to learn from the successes and weaknesses. The use of reflective journals and logs as described in Chapters 2 and 3 are also useful tools for determining lessons learnt.

SANDWATCH AND EDUCATION FOR SUSTAINABLE DEVELOPMENT

Developing communication skills

Sandwatch brings together different aspects of Education for Sustainable Development. It focuses on taking education outside the classroom and learning about real problems and issues and what can be done to find solutions. This is not done by youth in isolation, but in collaboration with their peers, communities and other focus groups. Thus young people learn inter-personal communication skills, such as how to communicate with others having different levels of understanding and different priorities, and this is an important skill for life after school.

An interdisciplinary approach

In Sandwatch, the environment is viewed holistically, involving natural, human, economic and political components. The activities or projects designed by the students are based on the principles of science – data collection, data analysis and critical thinking. Students learn to organize and prioritize their information, and how to critically select the salient points and key issues. The process also provides for self-discipline whilst providing scope for lateral thinking and creativity. Virtually every subject in the school curriculum can be integrated into Sandwatch, from drama to language skills and from mathematics to woodwork. As described in Chapter 3, the process is infusion, or weaving the different subject areas and skills into Sandwatch.

Life skills through learning by doing

Sandwatch teaches so many life skills in a practical learning-by-doing framework. Students learn to share information and even more importantly to listen to others. They can appreciate the principles of environmental stewardship and responsible citizenship by working for the benefit of the community rather than their own personal advantage. They also learn to understand the benefits that can be derived from sound scientific monitoring which can often be rather repetitious. Sandwatch also develops a sense of caring for the environment and the world about us.

Expanding Sandwatch to include other ecosystems

While Sandwatch was developed for the beach environment, the same approach can be applied to other parts of the ecosystem. The international NGO, Live and Learn Environmental Education has developed a similar approach for streams and rivers, called River Care. For example, students from All Saints Secondary School in Fiji selected a stretch of the Qawa River at Labasa. They measured different components of the river such as slope, velocity, debris, plants and animals, water quality. Their findings showed contamination with copper, iron and phosphate and that the water was unsuitable for swimming or drinking by any animal. They presented their results with the aid of drama pieces to the community, the sugar factory manager and the town health inspector. Following this presentation, the students began a series of more detailed monitoring with the help of the sugar factory manager and they conducted an educational campaign to reduce dumping of garbage and refuse in the river. Sandwatchers in Dominica have started their own River Care programme (Raymond, 2007).

This chapter described the Sandwatch approach using a variety of experiences from the Caribbean region; and provided the answers to basic questions such as how to get started, who can take part and how to integrate Sandwatch into the school curriculum. Today, Sandwatch has evolved into a vibrant network of committed students, teachers and community members around the world who are dedicated to the principles of environmental stewardship. New schools in first-time countries are joining Sandwatch all the time, bringing new life and ideas to the Sandwatch community. We invite you to come and join us.

Selected Reading Materials about Beaches

Beach erosion

Coping with beach erosion, by Gillian Cambers, 1998. UNESCO Coastal Management Sourcebooks 1.

This is a practical guide for beach users, builders and homeowners as well as other coastal stakeholders. It provides information about beach changes, how and why they occur, and discusses ways to conserve existing beaches through well tested shoreline protection and other management measures.
http://www.unesco.org/csi/pub/source/ero1.htm

Beach management

Wise practices for coping with beach erosion, UNESCO, 2001. A series of individual booklets describing coastal changes and how to cope with them in specific islands: Anguilla, Antigua & Barbuda, Dominica, Grenada, Montserrat, Nevis, St. Kitts, St. Lucia, St. Vincent & the Grenadines, Turks and Caicos Islands
http://www.unesco.org/csi/wise2b.htm

Plants and animals on the beach

Peterson Field Guide to Southeastern and Caribbean Seashores, Eugener H. Kaplan, 1999, Peterson Field Guide Series, ISBN-10: 0395975166.
This guide covers more than 1,000 species, such as shoreside plants, clams, shrimps, crabs, corals, seaweeds, sponges, and sea urchins, as well as all of the common seashore communities found from Cape Hatteras to the Gulf Coast, Florida, and the Caribbean.

Sea turtles

Wider Caribbean Sea Turtle Network (WIDECAST): a volunteer network seeking to conserve sea turtles and their habitats in the wider Caribbean region.
http://www.widecast.org
http://www.cep.unep.org/programmes/spaw/widecast.html

Water quality

The GLOBE (Global Learning and Observations to Benefit the Environment) is a worldwide hands-on, primary and secondary school-based science and education program developed in the USA. http://www.globe.gov/r/homepage They have developed some useful water quality guides for teachers: http://www.globe.gov/tctg/tgchapter.jsp?sectionId=143

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Chapter 6

Using Information and Communication Technologies to Develop and Sustain School-based Projects

Paul Diamond

As educators, we all know that starting projects within our schools and communities to address social, cultural, environmental, educational or health-related issues is a relatively simple task. The real challenge we all face is to grow, expand and sustain our projects over the long term. However, this is often no easy task given the scarcity of resources that are available to us. In this chapter, I will endeavor to suggest and outline some simple yet effective techniques and uses of technology that may make this task easier and perhaps more enjoyable for teachers and students.

The overall theme of this chapter is the use of information and communication technologies (ICT) to aid and support project development. However, the use of computers and related devices in achieving these goals is limited, as they are just one of many tools that are available to us. They should not be considered the primary means of developing and sustaining any project. Ultimately, the key to long term success of any project is you and your colleagues' ability to recruit participants, motivate students, generate publicity, get the wider community involved, and find partners (local, regional, and international) to assist and work with you towards achieving a common goal.

> *Most importantly, through this process of recruiting like-minded partners, you will help generate a real sense of community and solid accomplishment among all people involved, especially students. Computers and related technologies are ideally suited to assist you in attaining these goals.*

Over the course of this chapter, I will try as much as possible to avoid using technical jargon and citing specific types of computer related technology, as the computer and information technology industry is changing so quickly and dramatically that to do so would quickly date this publication.

What is new and cutting edge technology today is all too quickly obsolete tomorrow. However, this should not be a problem as the examples discussed are widely applicable to a broad range of uses, and not limited to what specific computers or devices you have access to. In addition, most of what I will mention are by and large either 'free resources' or very inexpensive devices that are limited only by your imagination and creativity in utilizing.

Most of the examples used in this chapter deal specifically with educational and environmental projects; however, its general themes and strategies can be applied to virtually any kind of school or community based project.

INTERNET: the key to successful project development

Major factors that contribute to the success of any project are communication, adaptability and novelty, all of which will help lead ultimately to the long-term sustainability of the project. These goals can be attained by utilizing a variety of simple yet effective strategies. Utilizing new technologies innovatively is only one of them, but other equally important components are:

- ■ Recruiting support for your project.
- ■ Keeping students and other participants motivated.
- ■ Involving the larger community as a whole.
- ■ Sourcing and utilizing IT technology to enhance and reinforce the project.
- ■ Providing a sense of accomplishment to participants.

As stated previously, starting a project within your school or community is relatively easy to accomplish. However, to maintain and expand any project, the main challenge is to continue to raise and involve as much interests as you can, while also trying to acquire and integrate the assistance of outside agencies, whether local, regional and/or international.

Key to meeting this challenge is to actively '*network*' your project, forge bonds of communication and support within your school, community and local government agencies, and reach out to the wider regional and international community. No matter what your project goals are, I guarantee that others, both inside and outside your local community are also working on similar projects, and the easiest way to make contact with them is to make full use the Internet. The Internet quite literally puts the world and its resources at your finger tips, and all that is required is that you utilize this amazing resource effectively, imaginatively and constructively.

Getting Started

By using Internet 'search engines' such as 'Yahoo' (http://www.yahoo.com), 'Google' (http://www.google.com) and others, you can quickly locate other schools, organizations and individuals that have similar interests and goals as you do, and they are often more than willing to share their knowledge and contacts in pursuit of a common objective. These contacts often result in making new partnerships, learning about the availability of expert advice, training workshops, seminars, and even funding opportunities both locally and internationally.

Unfortunately, the vast amount of information on the Internet is organized very haphazardly and it can often be a challenge to separate out the specific information you are looking for from the huge amount of irrelevant information that any Internet search will generate.

To maximize your chances of finding useful information when using a search engine, try to be as *specific as possible* in terms of the information you are doing your search on. For example, if you are interested in finding out about '*hurricane disaster preparations*,' then do a search using that whole phrase.

Do not run your search just using the word '*hurricane*' or you will get literally hundreds of thousands of references to everything that is even remotely related to the word 'hurricane', such as high school sports teams of that name, or perhaps an ice cream company that has a product called 'hurricane', or an air-conditioning manufacturer that has a model named the 'hurricane'.

Another good tactic is to do searches using different combinations of the same general words. For example, if you do a search using the phrase '*Climate Change in the Caribbean*', you may find a dozen or more useful websites. However, if you then did a second search using the phrase '*Caribbean Climate Change*' you would come up with dozens of other possibly useful websites, many of which didn't show up in your first search. So always try various combinations of key words and phrases when you are doing Internet searches, and also run the searches on different engines, as 'Yahoo' may have useful links that 'Google' doesn't, and vice versa.

Use 'search engines' such as Google, to search for specific key words and phrases, and by trying different combinations of key words and phrases, you will be able to discover a wealth of contacts and resources for your project.

By using the Internet and its search engines, it is possible to quickly find and make productive contact with numerous people that could be of invaluable help to your project.

Developing Partnerships and Keeping Students Motivated

Once a potential partner is discovered, make a contact online by sending an email. The scope of the cooperation they may offer is limited only by how many of them you contact and forge bonds of mutual support with. You will also quickly discover that even if a particular person or a group cannot assist you directly, they may know of another person or a group

that can. The only limiting factor in this strategy is *how innovative and perseverant* you are in pursuing the leads provided to you.

I have found that offering to exchange '*cultural packages*' that contain post cards, local music CDs, national flags, folk tales etc. between my school and schools in other countries is an excellent way to build initial and productive rapport between groups. Establishing '*email pen-pals*' between students/schools is also effective. *Monitored free email* accounts are available for students via a variety of online educational services, such as: http://www.epals.com.

It is vitally important that you as a teacher maintain tight control and supervision over your students' internet access. There are a lot of unscrupulous individuals online that may seek to take advantage of students. Also, nothing will halt the future of promising projects faster, or cause more public embarrassment for staff, than students viewing inappropriate materials online and having this fact made known within your community.

By using email, primary school students in the British Virgin Islands (BVI) were able to interview and even exchange 'cultural packages' with the scientists of New Zealand's Scott Base in Antarctica. Here, the New Zealand scientists show the post cards, music CDs and national flag, which the students sent them.

Another very effective strategy to keep your project both interesting and enjoyable for participants, especially students, is to regularly invite guest speakers, scientists (government and private), writers, community leaders, and visiting experts, in as many disciplines as possible, even if perhaps only tangentially related to your specific project. These guests can also be identified through the Internet search and contacted by email. Visiting and local experts in many fields are usually more than happy to come and talk to students and share their interests and findings. Seeing how enthusiastic and interested experts are in their fields is a great way to inspire students to learn more about related subjects. For example, if you are studying the health of your local coral reef or near shore environment, invite a local botanist to talk to your students about the relationship between terrestrial plants and the health of the ocean, or the importance of mangroves.

Noted marine biologist and film maker, Dr. Richard Murphy of the Jean-Michel Cousteau Ocean's Future Society talks to students on Virgin Gorda, BVI about his work recording and preserving the world's oceans.

Seeking advice and financial and material support for your project

There are a myriad of programmes and organizations, governmental and non-governmental (NGO's) that may be more than happy to share with you their help, advice and support for basically every conceivable project that may be of interest to you and your students. It is impossible to list even a small portion of them; however, advice and even concrete support from organizations such as the United Nations Educational, Scientific and Cultural Organization (UNESCO), the Commonwealth Association, the British Council, the Canadian International Development Agency (CIDA), the Peace Corp, the Volunteer Service Overseas (VSO) and many, many others are possibly just an email or two away.

Another very effective strategy you could consider is to simply try to communicate with other teachers and senior education officials and to discuss ideas on ways that your goals and theirs may mutually support each other. By talking to and enlisting the aid of education officials, they may let you use a school, community meeting facility or computer lab after hours, or provide you with other free support and assistance. Also, local Department of Education officials are usually the primary contact personnel with off-island organizations and donor agencies and as such can be of invaluable help to you in securing sources of funding and invitations to off-island workshops and conferences. For example, if your project concerns HIV/AIDS education and prevention, your country's Ministry of Education or Health would be fully aware of a number of off-island organizations that are available to provide you with support and materials of various kinds. The same is true for other social, environmental and educational issues.

USING ICT TO PUBLICIZE AND REINFORCE YOUR PROJECT

An extremely efficient and cost effective way to advertise your project locally, regionally and internationally is to actively involve your local media, newspaper/TV/radio to cover your events. Even if they are unable to assign a reporter to attend your project's latest activity, if you send them 'press releases' or pre-written articles with photos, they may be printed verbatim in local newspapers. A local newspaper may even grant your project a free page once a month, to showcase your project's ongoing efforts on behalf of the community, especially if you can guarantee them a regular supply of articles, photos and project updates. Getting students to write these articles and press releases themselves is also an excellent way to get them involved in the project and build up their self confidence.

Apart from solely relying on local mass media agencies to publicize your project, one of the most important, cost effective and easily attainable strategies you can use to continuously publicize your project is to regularly publish, ideally monthly, a project newsletter, as well as to create a project website. There are many inexpensive and even free technical resources available for you to use, if you take the time to source them out and utilize them effectively. In the following, I will cite a few of the techniques that I have found to be the most effective and easy to implement: to publish a project newsletter, and to create a project website, both by using a computer.

Publishing a Project Newsletter

Publishing a newsletter can be easily and professionally accomplished, without any prior experience or training in desktop publishing, by using Microsoft's MS-Publisher. MS-Publisher comes pre-installed in almost every computer, as part of Microsoft Office Suite applications, like Word and Excel. By using one of the numerous pre-made 'newsletter templates,' you only 'cut and paste' stories, articles, poems and art work into the pre-made format, and by coupling the articles with digital photographs that are now common place especially with cell phone 'cameras', it is possible to create professional looking newsletters, press releases, posters and promotional brochures.

One of the main advantages that I have personally discovered in using this method is that, not only does it serve to 'get the word out' about you project, but it also gives students a tremendous sense of accomplishment when they see their work published and distributed in the finished newsletter. Students in particular are often amazed that other people, especially adults, are interested in reading/hearing what they have to say! *Once you have instilled a real sense of accomplishment in a student, there is little standing in their way to achieve even more.* Getting your students eager involvement in the project is perhaps the most basic step in determining its long term sustainability.

ROMPS Review is a monthly school newsletter, written almost entirely by Grade 5 & 6 students of the Robinson O'Neal Memorial Primary School on Virgin Gorda, British Virgin Islands.

In addition, the students' top three stories are also reprinted on their own full page once per month for free in the local national newspaper "The BVI Beacon". Selected articles are even occasionally reprinted overseas in various educational and environmental publications.

A newsletter also serves to teach participants, especially students not only how to construct a narrative story, but also how to conduct research, how to interview people, and how to be objective and be interactive within the entire project's processes. As an added benefit, particularly informative and well written articles can also be submitted to a variety of 'off-island' publications, such as newspapers and magazines. They are often very happy to reprint interesting articles and photos from educators and students from the 'exotic' islands of the Caribbean. Such successes not only help to inform a wider, even global audience of the important work you are doing but also reinforces in your students, the importance of their work and their contributions to the project.

Distributing copies of your newsletter, either internationally by email or by distributing printed copies within your community in local shops and stores, also serves to let people know what you are trying to accomplish. Also by charging a small fee for each copy sold, by leaving 'coffee can' collections with local shops can also be a source of revenue, if only to cover your printing costs. Producing a newsletter is an inexpensive and extremely effective way to reach a wide audience and impart new skills and confidence to your participants.

Creating and Maintaining a Project Website

In addition to publishing a regular project newsletter, the next thing to consider is establishing a dedicated project website. Though considerably more complex and technically challenging to accomplish, it is well within the skill sets of most educators and perhaps, especially senior students to accomplish.

In the above example, 6th Form students at Nevis's Charlestown Secondary School are being taught to construct and maintain websites by the staff of The Nevis Historical and Conservation Society. In particular, the students are largely responsible for maintaining and regularly updating a new website dedicated to recording all of the biodiversity, flora, fauna and marine life that exists in and around Nevis. In addition to learning how to create and maintain websites, the students are also tasked with conducting online research in support of the project, as well as participating in scientific field trips, and they also liaise with various scientists and other experts, both in person and via email.

In this way, the students not only learn new and highly marketable sets of skills, they also are afforded the opportunity to use their skills in a concrete and effective way in support of their community. Though this a new project started in October 2007, it is already attracting a lot of regional and international attention, due both to its environmental goals and its involvement of local students in key support roles. Off-island support and funding have already been offered by several organizations.

There is a wide variety of 'easy to build website' software programmes available on the Internet, many of which are free. Personally, as an excellent, easy to use starter programme, I use Microsoft FrontPage, though there are many other similar and 'free' programmes available on the Internet that do much the same thing. Regardless of which programme you use, the ultimate goal is to establish a '*web presence*' for your project on the Internet. In this way, you can more easily communicate and make contact with other like-minded people and organizations, literally globally.

Fortunately, the Caribbean's many Internet Service Providers, such as telephone or Cable TV companies, often offer the establishment of a *free website* to their subscribers, particularly

for schools and related community organizations. Even if they don't offer a free website, you can register your website 'domain' with a multitude of online 'hosting companies' for significantly less than $100US/per year.

Their staff can also be an invaluable source of free expert advice in building your website. It is just a matter of seeking them out and asking for their assistance. Publicly mentioning their support for the project on your website and newsletter also serves to let their contributions to your project be widely known, and is thus an excellent way of enlisting their continued support and assistance.

Another avenue you should actively explore for technical support, given the natural interest of the young in all things computer related, is recruiting a budding computer scientist within your local high school, college or community. You will often find that they very eager to help you build a project website as a personal or even school project.

By using MS-FrontPage or a similar website construction programme, it is then only a matter of registering your website's domain name (e.g., www.ourproject.org) with a suitable 'hosting company', such as your local Internet Service Provider, or anyone of the thousands of other ISP hosting companies that a simple search of the Internet will reveal.

The key to maintaining a successful project website is to make sure that is it *updated regularly*. Then, you can update your members' articles and photos etc., in a timely fashion, and this greatly serves to inform everyone that you are not only an *active and ongoing* project, but are also *aware and responsive* to the project and its members as a whole. Similar to having a regularly published newsletter, having a routinely updated project website serves to reinforce in your members and partners the idea that you are concerned and interested in their input and contributions towards the project goals, and this helps immeasurably in establishing the fact that you are all part of a greater global community. This is particularly important when you have made contact and forged bonds of mutual support with off-island schools, groups and organizations. By being able to offer online links within your website to theirs and other related projects, *you greatly increase your potential as viable and valuable partners.*

As an important bonus, once you have established a project website, it is *automatically* added to the Internet's various search engines. This means that depending on the website name ('domain') you chose, literally anyone on the planet who does an Internet search, related to whatever your project is about, will be able to view and respond to your project website. This fact alone increases your project's potential networking and communication capabilities with other regional and international organizations, exponentially.

Training local students is an especially effective strategy to use, as not only do students tend to be computer savvy, they also greatly enjoy learning new and marketable technical skills. *It is highly recommended that several people within your project, particularly students, be trained on how to maintain and update both your website and newsletter.* In this way your website and newsletter won't abruptly cease if your one editor and/or webmaster should become unavailable. Donor agencies also tend to view more favourably projects that provide community based training and technical skills to youth in support of educational and environmental projects. It is also possible that students, once trained, can act as mentors to others within the community and pass along their newly learned skills to younger students. In this way projects can be self-sustaining in terms of providing technical support.

Creating a project website is very effective way to reach a global audience. This is the biodiversity website for Nevis, which is created and maintained by local 6th Form students.

OTHER FREE ICT RESOURCES TO SUPPORT YOUR PROJECT

Depending on the type of project you are doing, there are also a number of other techniques that you can use to publicize and encourage creative student and teacher involvement.

Blogs and other 'Social Networking Websites'

Currently, there is an explosive growth in both the use and functionality of free, so-called '*social networking websites*' and personal '*blogs*', such as 'YouTube' (http://www.youtube.com) and 'Face book' (http://www.facebook.com), to name but two. Couple this with the easy availability of inexpensive video cameras, it is a simple matter to regularly post 'video clips' detailing your project and its goals, both on your own website and others. With some creativity and practice you can even regularly create your own short 'webcast TV shows'.

For example, Teacher Bill Reilly and his students in Bethlehem, New York produce a webcast news show 'The Global Coalition' that resembles a 'CNN news show' for middle school

students. Teachers and students from all over the world regularly submit short video clips on stories of local interest to the project to be included in their 'webcast', just as on real TV news shows. Their webcasts can be viewed at http://bcsd.k12.ny.us/middle/Global/global.htm

Grade 5 & 6 students on Virgin Gorda, British Virgin Islands create their own online video clips to share with students all over the world.

The possible uses of blogs and social networking websites in support of educational projects are just now starting to be realized, though students in particular are leading the way in expanding their role as a new medium of global information exchange. Teachers should be aware of their existence and endeavour to investigate how this emerging medium might be incorporated into their projects. Ask your students, who probably know a lot more about these online utilities than you do, for advice and help on how to best use and exploit them on behalf of your project. It might yield new and unexpected avenues of support and publicity that you previously wouldn't have considered. This has the added advantage of including your students directly in the 'creative decision making process' of your project, a fact that is particularly appealing to students and encourages them to be more creative and pro-active in your project.

Video Conferencing

Computers/laptops with built-in video cameras are rapidly becoming the norm, and teachers can easily utilize this to establish 'video conferences' between their students and others, even in distant countries. Free online utilities such as MSN Messenger and Skype (http://www.skype.com) offer this real-time video feature at no charge. Having the ability to offer your students the chance to actually see and talk to students, or even scientists or authors in other countries, via a free video link is a great way to make contacts, encourage student participation, and even generate some excellent publicity for your project.

Google Earth

You can use the *free* Google Earth programme (http://earth.google.com) to view recent satellite images of your community right down to the level of being able to identify individual

buildings. The programme is not only free but also simple to use. First time users are always amazed at the level of detail that can be shown and frequently suggest new and novel uses for it, such as tracking and monitoring of local deforestation or the effects of volcanic ash from a nearby volcano.

Google Earth is particularly useful for environmental and educational uses. For example students on Nevis use it to monitor erosion of local beaches, and students in the British Virgin Islands use it to study and map their local coral reef systems.

Google Earth photo of the strip of Pinney's Beach, Nevis that local students are studying over time to track beach erosion and other environmental concerns.

CONCLUSION

The wide availability of inexpensive computers, peripheral devices, software and free 'online services', can all be significant assets to your project, with the only limiting factors being how perseverant and innovative you are in applying them. By combining information and communication technologies with 'in-house training', the promotion of new skills and the networking of your project within the greater world community, it is quite possible to quickly establish, expand and sustain your project over an extended period of time. In my experience, just the relatively simple tasks of creating a project newsletter, website and making a concerted effort to reach out to other organizations and individuals tend to lead to new ideas, new skills and access to a world of possibilities that previously your project may not have considered possible.

The most important component in all of these suggestions is to actively involve your students and other participants in all aspects of the project. As mentioned at the beginning of this chapter, computers and software are only one of the tools needed to grow and sustain any school or community project. Much more important is how you use them to benefit and motivate your students. By actively encouraging their creative input and participation in all levels of the project, and by providing them with the opportunity to acquire and expand their skills, you also provide them with a sense of self confidence and of being a valued member of a larger community. If this can be accomplished, there is very little to limit how successful and sustainable your project will be.

In Closing

We hope this guide has inspired you with some ideas that you can take with you to your classroom tomorrow, joining the teachers around the world who are making a difference every day toward sustainable development. We also hope that the chapters are successful in presenting Education for Sustainable Development not as a difficult, complicated and stressful task, but as a fun, exciting and rewarding process.

There is no "right way" to do ESD, rather it is a process for everyone to learn, explore and innovate, including you as a teacher. The skills and values learnt along the way - to learn to know, to do, to live together, to be and to transform oneself and society – are themselves what turn a learning experience into ESD. At the same time, there are some common features found in the ESD approaches discussed in this guide. They are:

- Learning by doing.
- Community involvement.
- Reflection.
- Real life activities.
- Problem solving.
- Participatory and collaborative.

A key to begin and continue ESD is to focus on what you can do. Many of the ideas presented in this guide are very simple and straightforward. Perhaps you might want to start by experimenting with one small idea suggested in this guide: e.g. validate an accomplishment of one of your fellow teachers (Chapter 1); after reading a short story, ask your students to identify specific elements of the story's environment and relate them to their own surroundings (Chapter 3); or help your students exchange picture postcards with a school in another country (Chapter 6).

Above all, the key to successful ESD is you, the teacher, being creative and innovative, thinking outside of the box, and collaborating with others, to help your students become caring and responsible citizens. We hope this guide will help you in the process.

We look forward to hearing from you about your own ESD ideas and activities.

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