Engaging youth
in sustainable development
Learning and Teaching
Sustainable Development in
Lower Secondary Schools

Michela Mayer/ Johannes Tschapka (Eds)

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"We are citizens of the planet
We were born here
We are going to die here
Come what may
We are entitled by our birth
To the treasures of the earth
No one must be denied these
No one must be denied."

Simon & Garfunkel: Old Friends – Live On Stage
(Columbia / Sony) 2004

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Contents

The promotion of sustainable development concerns each and every one of us in his or her daily life. Each of our actions, our habits and our behaviours has an immediate impact on the preservation of our environment and on the sustainable development of our societies and humanity as a whole.

The present publication „Engaging youth in Sustainable Development" is a contribution of the Council of Europe to the United Nations Decade on Education for Sustainable Development. It is a tool which seeks to help students and teachers integrate Education for Sustainable Development (ESD) into their school lives and community activities, through a number of examples and educational concepts.

The main target group are pupils in school grades 5-9. These 10-15 year old citizens should be given the possibility to understand that they have a strong role to play in protecting our planet and the quality of life in our societies, as well as many opportunities to contribute to a sustainable tomorrow.

The examples of good practice set out in this publication are school activities from several countries across Europe and beyond. They illustrate the broad range of recent school projects and activities in Education for Sustainable Development in diverse settings, through multi-thematic approaches. They not only deal with the ecological tenets of sustainable development, but also the cultural, economic, and social ones.

This initiative is a joint project of two Directorates of the Council of Europe: the Directorate of Culture and Heritage and the Directorate of School, Out-of-School and Higher Education. The task of selecting the examples and preparing the publication was given to the international network Environment and School Initiatives (ENSI), which was set up in 1986 by the Centre of Educational Research and Innovation of the OECD. The result of their work provides interesting material for debate, reflection and critique on sustainable development, which should enable us to use it as a meaningful concept in everyday life.

Introduction

Target groups:
The examples of practice presented in this book focus on students aged 10 to 15, which, depending on the national school system, includes the upper level of primary school, as well as the lower and partly the upper secondary school levels. This age group spans many developmental stages. Currently, most ESD publications are geared toward children in primary schools or toward students at the higher secondary and tertiary levels of education, who have almost reached adulthood. Beginning to concentrate more on the pre-adolescent students is about more than just adapting and implementing learning material to the potential of students from that age group. It also involves reflecting on the role that youth of this age group play in our present-day society. Are they taken seriously? What kinds of actions can they take? Whom do they trust? Do they have the capacity and ability to ask for considerable goals and to understand and make clear to others the necessity to act?

Education and schooling in grades 5 to 9 is a pretty challenging endeavour for all actors involved. Students who stand at the beginning of their adolescence can greatly benefit from flexible structural arrangements and schooling, which trust and encourage their inspiration and motivation for learning. Young people count on such flexflow structures in schools and appreciate the opportunities offered to them by their schools to learn in different styles and environments. The term 'sustainable development' thus holds a double meaning, as it touches on issues of personal development as well as on the opportunity of society to learn from its youth.

Storytelling:
"This is awesome!" Jorge, a lower secondary student, exclaims as he looks upon the scene around him. „It's better than I ever thought it could be," he says as he points at hundreds of photo collages lying on the floor of Segovia's railway station. A big crowd of people stands by, admiring and discussing the students' views on their common city. This was the day that Jorge enjoyed most with his schoolmates.

Marietta, standing beside Jorge, is on the phone with her teacher, laughing and talking excitedly about what is perhaps the most memorable day of her school life. „I just kept thinking about finding the photo I took in that crowd. And I found it, the one with my mother and Ms. Ramon, my previous primary teacher, sticking their heads together."

"Be the holder of your own story" strikes us as an appropriate motto for motivating young people to engage in sustainable development. Because of this, each example of practice in this book is introduced with a story from the viewpoint of students and teachers in ESD settings, and thus the stories provide a connecting thread throughout the book. They are not only intended as entertaining descriptions. Narratives remind us how much learning and understanding are based on personal relations and experiences. The authors come from a variety of cultures that have different views

and are derived from their real situations and experiences. The storytelling in the book accurately relates the varying perspectives from whence the authors source and organize the educational concepts. There cannot be one single story, especially not in case of ESD. The cases presented in the book are neither a cooking recipe nor do they carry any hidden ideology. They are basically ways of seeing. This exemplifies an important aspect of ESD: to encourage people to tell their own stories and to consciously share these among each other.

Project Rationales:
The purpose of the project rationale in each described example is to provide principals, teachers and parents with basic information on youth, learning, and sustainable development. While most teachers agree that ESD is an important element in school, many struggle with implementing it in their own teaching practices. ESD not only deals with people's dependence on the quality of their environment and on access to natural resources now and in the future, but also with aspects of participation, self efficacy, equality and social justice as essential perspectives in preparing students for their engagement in sustainable development.

Engaging Youth for Sustainable Development is based on the assumption that engagement is important for learning and achieving success in and beyond school. Engagement includes a variety of competences and skills, which also encourage the intellectual, social and personal development of students. Through a range of educational concepts that are highlighted in ESD and which are briefly explained below, teachers can provide more engaging educational environments and thus increase the percentage of involved and motivated students from lower secondary schools, and also lower the drop-out rates. Increased participation in urgent and pertinent societal questions and in students' personal school careers is one of the major benefits of ESD. Instead of resorting to moralistic individual solutions, teachers in ESD seek out lasting changes and constructive social actions. Engaging youth in school initiatives means involving students in their local communities for small, but collective, positive changes.

Boxes
The examples of practice are rounded off with information boxes. The boxes contain short descriptions of official documents and the legislation of the respective country as they relate to ESD in the grades 5 to 9. The boxes also show characteristics of ESD in the respective country, available teaching resources, useful regional websites dealing with ESD, and the names of those organisations that support schools' delivery of ESD.

ESD Concepts

Education for Sustainable Development is in a sense as well-founded a 'practice' as almost all other extra curricular attempts of the last 20 years. Citizen education, global education, environmental education, health education, intercultural education and peace education all deal with methodologies that have many similarities. In short, they are based on the recognition that the exclusive idea of education as the simple transmission of knowledge needs to be left behind, and instead they stand behind the meaning of the Latin word 'educare' which means: "to draw out the full potential of learners". At same time ESD means to orient young people in today's global and complex world and to help them become aware of the uncertainty, complex relations, and locally-based knowledge. The main educational concepts behind these aims and methodologies are reflected in the practices collected in this book:

ESD is student-centred:

The ideas, values and perspectives of children form the starting point of the educational process. Teachers consider students as active agents in the construction of their knowledge. Holding in awareness that knowledge is a social construct, several examples in this book propose that students collaborate in groups as they construct and define the problems they want to tackle. In contrast to abstract or made-up problems, where the teachers already know the solutions, students deal with 'legitimate questions' in ESD. There are no ready-made answers at hand, and multiple solutions are possible. This approach enhances students' self-esteem and can also be used to teach the core subject areas.

ESD is connected with real children's lives and with their local communities:

The issues faced are locally relevant, and interesting for local institutions, enterprises and NGOs. Students and their schools collaborate with their respective community to construct a common social attitude. In this way the school lessons deal with 'contextualised knowledge', which is different to, but connected with the more generalised 'textbook knowledge'. The children have real experiences on 'how knowledge is constructed' in a collective and social process, where the role of a teacher is the role of an interpreter who assists students in seeing their own place and role in a more critical way.

ESD is future-oriented:

Based on the 'concrete utopia' that a better world is possible, teenagers are asked to orient themselves by their images of the future and to play a role in the society they are a part of. Development is not a matter of material resources or economic growth. Developing a different vision of what 'quality of life' means can help students envision a sustainable and individually satisfying future, and can help them work constructively with, or avoid feelings of isolation and frustration. It is never too early to work on visions for the future and to contrast and compare these to the values of current societies. Visioning in ESD is also a process of enlarging the personal view of

the world to encompass different cultures and in this way can strengthen intercultural understanding.

ESD is action-oriented:
To construct knowledge that is useful for students' future lives requires involvement in authentic action that enables small changes in their daily lives. Through reflection on their own actions, students are able to construct meaningful knowledge, where information is connected with actual experience, with the emotions felt and with the values they hold. But action is not only required to build meaningful knowledge. Action is also essential nowadays – in our rapidly changing society – to build competencies that will allow the future citizenship to deal autonomously and consciously with uncertain and fluid situations.

ESD fosters critical thinking:
In a world where teenagers are overwhelmed by contradictive and seldom neutral/ objective information, they need to be able to think consciously for themselves in order to become active and responsible citizens. ESD asks students to look behind the assumptions that underlie knowledge claims, opinions and ways of perceiving. To collaborate in sustainable development, students need to look at the planet with 'other eyes'. Often misinterpreted as enforcing negative and sceptical attitudes, critical thinking actually helps adolescent students develop creative and optimistic ways to search for the right direction, which can then be imitated in the future.

ESD is founded on values:
From an educational point of view, values cannot simply be transmitted in ESD, but must be negotiated and constructed. Where does one person's freedom end and other people's freedom begin? What is the difference between 'equity' and 'equality' in the distribution of resources? The simple transmission of values can result in a short-term change of behaviour and a poor understanding of the rationale behind these values. ESD challenges students to discuss what a shared value means in a real situation. In most societies, so also in the European one, the 'declared values' (for example, respect for the environment, respect for cultural differences) are often not the same as the 'practiced values'. Adolescent students in particular are able to understand this difference very well and show an intrinsic motivation to reflect upon it.

ESD accepts the challenge of complexity:
Complexus in latin means that things are woven together. In accepting the challenge of complexity, students can build upon a systemic view and a common understanding that the processes through which nature finds its 'solutions' are non-linear, redundant, often random and unpredictable. This approach counteracts reductionism to the dominant 'narrow technical rationality' that has caused so many social problems and environmental disasters. Multiple causes and multiple effects are the rule and not the

exception, as well as the uncertainty of the process and of the effects. An awareness of limits should not hinder action, but requires the ability to act in the face of uncertainty, to face risk and unpredictability in concrete situations, while still maintaining control.

ESD calls for participation:
Democracy in school is not only a matter of citizenship education, but also a matter of practice. In addition, practice in the classroom can help develop an attitude of shared responsibility through genuine participation, where students care about their own actions and their own learning. Participation is not something that happens spontaneously, and how to be assertive and exert influence are not the main things that must be learned. Students start to participate consciously in society through listening to other people's opinions, through expressing points of view without forcing them on others, and through negotiating and convincing. These matters can be learnt in a 'circle', where teenagers spontaneously join together in order to perform their activities, with the occasional help and guidance of their teachers. Community and public authority are strongly recommended to legitimate these participatory steps, especially and explicitly in activities of public affairs.

Teachers and Schools changes in a perspective of ESD
In almost all of the collected stories, an impressive kind of 'mind shift' is required of teachers, as well as an 'organisational shift' on behalf of the schools. In effect, ESD concepts challenge teachers to change their ideas and perspectives of learning, and consequently their images of what it means to be a teacher (or a student).
Teachers are asked to develop competencies that are different from what they were trained for: they are asked **to collaborate,** first with their colleagues, because ESD can never be reduced to one subject or one single discipline. They are also asked to collaborate with their local community, with the NGOs working in the school area, and with scientists who are interested in their action programme. Teachers, as becomes clear in the stories collected, must become mentors, facilitators. They must hold responsibility for the learning contexts, and are no longer simply 'depositories of knowledge'. These new roles are not easy to learn and practice, and they require the ability and willingness to 'handle the unexpected', to shift teachers' self-confidence from their knowledge of the subject to their methodological competencies.

Teachers are asked to really **trust in children's ability** to ask meaningful questions, to act and respond in sensible, knowledgeable ways. Finally they are asked to take a step back and leave the leadership of the project to the children, in other words, to 'let students go and allow the group to take charge'. The balance teachers are asked to look for is the balance between 'handing over control' and maintaining charge. Where does a teacher's independence end and that of the students begin? Each story speaks about this search for balance and about the different solutions that were found.

A range of stories point out and provide evidence that Education for Sustainable Development not only focus on classroom teaching: ESD enfolds its potential through communication and learning between the school, it's surrounding community and the broader society. ESD is a social, community-based enterprise, where teachers and schools cannot work in isolation. In this long and at times challenging 'mind shift' process, teachers cannot be abandoned, and they are not!

Each story tells us something about partnerships and collaborations: with museums, with ministries, with scientists, institutions, NGOs, and with local communities. The composition of these partnerships seems to offer an interwoven process of local developments in school classes, innovation in teacher education, new findings in educational science and national curriculum development.

The natural consequence of this interwoven process is what has been called the **'whole school approach'.** Developed over the last 10 years both nationally and internationally, the 'whole school approach' calls for the involvement of all school 'stakeholders' in the mind shift required for ESD. This means that not only teaching and learning methods are affected, but also that the evaluation rules and the school management are driven by a SD-oriented vision, as well as the daily eating, playing, and cleaning habits in school life, the parent/teacher relationships, and so on.

The 'whole school approach' to ESD looks for consistency between declared and practiced social values, between desired life styles and concrete proposals, between teachers, schools managers and political attitudes toward education. ESD asks for a continuous monitoring of and reflection on the actions undertaken, because as the poet Machado told us:

"Wanderer, your footsteps are
the road, and nothing more;
wanderer, there is no road,
the road is made by walking."

Although this book speaks about engaging youth towards the ecologic, economic and social improvement of their local and global community, the authors do not naïvely believe this to be easy for the students, teachers and headmasters.

It is evident that politics are less and less restricted to the actions of state officials. Governance is increasingly being shared by different groups of citizens. More and more, sustainable development will be handled in cooperation with other participants, in many cases even through self-organisation by other participants such as communities, networks, companies, branches of industry, associations and, last but not least, schools. Legitimizing student participation towards sustainable development actions is based on a political understanding that does not restrict schools to the simple transmission

of cognitive knowledge, but rather opens them to serve as social competence and communication centres for engaging youth as citizens of one shared planet.

"Like other important concepts such as equity and justice, sustainability can be thought of as both a destination (something worth aiming for) and a journey (there is no pre-ordained route)"
(New Zealand Parliamentary Commissioner for the Environment, 2004)

ESD Evaluation and the Quality Criteria Approach
A big concern for teachers and schools in the process of innovation centre on assessment and evaluation. The mind shift required of teachers also affects their responsibility to evaluate at school, both at the local and national level. The world of ESD is becoming conscious of this, and there are now many international bodies (at the UNESCO and at the UNECE levels) looking for new approaches to evaluation that are consistent with ESD's basic concepts.
A contribution to this research comes from an ENSI investigation that is embedded in a European Comenius 3 project: the SEED project. Targeted are schools that have chosen ESD as a central part of their mission, and that consider sustainable development as the main principle to keep in mind when planning their school's daily life and long-term changes.
From the SEED website – www.seed-eu.net - and from the ENSI website – www.ensi. org – it is possible to download a "Comparative Study on Eco-Schools' Development Process in 13 Countries" (Mogensen and Mayer, 2005) and 'Guidelines' to Enhance, Through Evaluation Criteria, the Quality of ESD in a 'Whole School Approach' Experience (Breiting, Mayer and Mogensen, 2005). The latter booklet has been translated into 14 languages and presents "A proposal for a 'non-exhaustive' list of 'quality criteria' to be used as a starting point for reflections, debates and further development regarding future work on ESD among educational officials, teachers, headmasters, parents and students."

The Secret Garden
A Place for Girls Without Cultural Restrictions

Story

Fatma and her girlfriends, who come from a variety of cultures, sit in their own 'secret garden' that is filled with colours and pots. "We paint flower pots and decorate them with coloured tesseras, shells or glass beads, thus creating beautiful ornaments of butterflies, waves or spirals." The gardeners among the girls also have the chance to get to know a very rare and almost unknown plant, the breeding plant. "This plant is also called 'tear of the prophet,' Hava explains, "Because this Madagascan plant loses single 'tears' (resins) now and then that roll down its leaves." She runs her fingers over some leaves and continues, "The shoots stay with the mother plant for a certain time and then fall off. The breeding leaf does not need help for reproduction because it is able to pollinate itself." The girls take the pot plants home to care for the fragile stems. Another day, Sarah, Diana's mother, shows up and asks, "Could you offer such a pottery activity for us women too? Our balconies are crying out for such beautifully handcrafted flower-pots." She laughs brightly. Especially Fatma's and Hava's teachers enjoy the atmosphere of the garden and are actively involved in its creation. They use an herb spiral for teaching in their biology classes and empower the students to learn about herbs such as wild garlic (or bear's garlic), rosemary, basil, and thyme, and this with all their senses.

Project Rationale

The secret garden was originally a school playground. Within the framework of the city council's so-called concept of 'multiple utilization,' the possibility arose to make this garden accessible for the girls´ group of the association 'Zeit!Raum'.
Since 2002 this obscure and cosy garden has been the so-called 'secret garden' for girls and women. This protected open-air space for girls and women is maintained by Zeit!Raum twice a week in the afternoons from April through October. Youth workers carry out activities and projects together with the girls, who mainly come from immigrant families. The aim of these projects is to strengthen the girls' self-confidence. Fatma, Hava, Sarah and the other girls learn to articulate their needs and desires expressively and to stand for up for themselves. The female students meet after school to do their homework and to play games together with their friends, teachers and social

workers. "Dance and Paint With Us" was another activity for girls, where they rehearsed dances and painted large paper rolls which then brightened up the secret garden.

Over the last few years, the secret garden has evolved into a treasure for the girls and women in the district – it is carefully looked after by them. They can also use the secret garden as a meeting place to talks among friends and to relax. For this purpose deck chairs have been put there. The keys for the secret garden are handed out by Zeit!Raum.

To have a protected space for girls and women has several objectives:
•   Girls and women become more self-confident: they know that there are public spaces that they can – and are supposed to – use, and that it is up to them to open these spaces up to others.
•   The message for them, but also for their male friends, is that their diversity is respected, and that equal opportunity does not mean to be handled in the same way, but to have a choice among a variety of options.
•   To have a special space just for themselves allows these girls and women to develop their own initiative and autonomy without the fear of being confronted by others.
•   The garden gives the girls a special experience and connects them with their own culture, with the herbs they traditionally use for cooking, with traditional pottery decorations, and traditional stories where there is always a nice princess in a secret garden.
•   As a consequence of their garden experiences, they understand that a living together of various socio-cultural forms of life, of thinking and of acting is possible.

The secret garden is situated in the 15th district of Vienna, which hosts a relatively high percentage of inhabitants that come from immigrant families. The 300m² garden is maintained by Zeit!Raum twice a week in the afternoons from April through October. Youth workers carry out activities and projects together with the girls who represent a diversity of cultures and therefore speak different languages and are used to a variety of games and activities.

Contact:
Zeit!Raum – Association for Socio-Cultural Work Vienna, Austria
Tel.: +43 1 8927400 Email: office@zeitraum.org
Web: www.zeitraum.org

ESD in Austria through Programme ÖKOLOG (www.oekolog.at)

ÖKOLOG is the first and main Austrian programme for schools at the interface of Environmental Education and school development. It is based on the ENSI approach to EE and ESD, and takes into account the challenges and opportunities of school autonomy and school programme development.

Schools define the ecological, technical and social conditions of their environment and, on the basis of these results, define objectives, targets and/or concrete activities and quality criteria to be implemented and evaluated. Students as well as all the other actors at schools should be involved in a participatory way, and collaboration with authorities, businesses and other interested parties is encouraged.

Over 200 schools are members of the ÖKOLOG School Network. Central support is provided by the Ministry of Education, Arts and Culture, and by the Forum Umweltbildung (www.umweltbildung.at).

At a regional level, support is provided by the ÖKOLOG regional teams, whose major task is to organise further education and training, and to promote the exchange of experiences between schools in order to derive maximum benefit from the pool of competence that is accumulating at the various schools.

Engaging Students and Challenging Culture
A Canadian Case Study in Action-Oriented Education

Background

Set in the context of a school-museum partnership, these stories and insights are based on a case study of a school-museum collaboration that brings together students, teachers and community members to identify local issues of concern, and then to develop and implement local sustainability action projects. Community members include people with specific areas of expertise, such as composting or local govern- ment, that they are willing to share with students. This chapter examines sone of the identity shifts teachers experienced as they worked to support student engagement, ownership, and ultimately, learning.

Story

The students and their teachers arrived at the Royal Saskatchewan Museum both sleepy-eyed and in excited anticipation. It was the first of what has become a repeat event in several communities across Saskatchewan: A Youth Forum on Sustainability. The day opened with an inspiring keynote address given by a group of articulate grade 8 students from a nearby town who had been a central part of getting a no- smoking bylaw passed two years previously. The teachers then headed off to their own workshop, while their students met with various community partners. Some student workshops introduced the youth to local sustainability issues, and focused on how to investigate issues, develop plans and take action. Others focused on specific skills, such as lobbying, teamwork and making presentations.

From the start, it appeared to be hard for some teachers to let their students go off on their own, even though they all spoke or wrote about students "…being empowered… taking action… making a difference…taking things outside the box (school)…developing their leadership skills… and watching the students grow and take ownership of their learning." Many teachers were looking for cultural change, both in terms of sustaina- bility and schooling practices. Yet in the context of dominant notions of schooling and what a teacher 'should' be, this change proved to be challenging. Teachers used a range of strategies, both 'large' and 'small,' as they moved through culturally constructed ideas of what it meant to be a teacher.
The students were in the midst of a visioning activity that included talking, and

drawing and writing on a poster board about what they imagined for the future. In the midst of the discussion, the teacher picked up the marker, "I'll write," she stated emphatically. "It will keep me from talking." An impromptu conversation between two teachers during lunchtime provided more insight into how other teachers worked their way through more shifts in identity and role:

Kevin: "...I know [students] are bored in science classes, sustainability means nothing [to them], but as soon as you give them a project and let them run with it, and you are excited about their project, you're going to have them for the rest of the semester, whether it's chemistry [or any other subject], it's gonna [work]."

Jessica: "I've haven't done a lot of projects in my classroom because **I'm always so concerned about evaluating,** I have issues with evaluating projects" (emphasis in original).

Kevin: "I'm going to try it this way [holds up an assessment framework]."

Jessica: "I have serious issues. I don't like it. It's so subjective. Who am I to say how much effort, you know. I don't like putting a number to it."

Kevin: "Then can they do their own [evaluation]."

As we followed the teachers into the schools we asked them how they were able to relinquish more control to their students. For both students and teachers, it seemed to mean shifting teacher identities and ways in which they reproduced schooling cultures. As one teacher put it, "The toughest thing was letting go, letting the group take charge." When asked how he facilitated this shift, he responded, "I go for coffee a lot." Sometimes it was in these moments, when he was out of the room, that space opened for the necessary cultural shift to take place. He found himself able to stay silent, and the students found their voices and were finally able to recognize their own capacity to make decisions and move the project forward.

To let students make decisions meant that the teachers had to let go of some of their understandings of what was important for teachers to do, and become more comfortable with facilitating a process that was simultaneously messy and exciting. It did not mean that the teachers were not involved, but that they were continuously negotiating with the students, not only about what they were going to do, but just as often, engaging in a silent negotiation about what it means to be a teacher and student working together in ways that were different from what they were used to. It was a kind of negotiation that sometimes took the teachers, quite literally, out of the room.

Project Rationale

Both teachers and students appeared caught in contradictory educational storylines about what it means to be a teacher and a student. In the context of these tensions, teacher workshops not only include an introduction to a series of activities to support student learning through the whole-issue analysis and action-planning process, but also to focus specifically on how to shift dominant cultural and personal narratives about what it means to be a teacher working with students in these contexts. This includes working with teachers to help them understand ways in which dominant cultural narratives of what counts as teaching, learning, and teacher identities continually get reproduced by them, their colleagues and their students. While teacher motivation was high, and sometimes it took some careful negotiating to overcome structural-logistical barriers to following through on projects, we found it most important to attend to teachers' own internal 'police' that made it difficult for them to "let go and have the group take charge." Ultimately, the focus of teacher workshops has become shifting conventional teacher-student roles and relationships. Through the process, both teachers and students begin to re-vision their understandings of themselves, their identities and the purposes of school.

The Youth Forum on Sustainability, a process originally developed by Learning for a Sustainable Future (a national non-governmental organization), is catalyzed by three conference days and has been regularly hosted by the Royal Saskatchewan Museum. The process brings Student Action Teams (usually two teachers and five students) together with community partners to engage in a combination of workshops and planning time. The aim is to offer students inspiration, guidance and support in identifying local issues of concern, researching and analyzing those issues, and then planning and implementing action projects in response. The process draws heavily on the action competence model described by Bjaren Bruun Jensen elsewhere in this book (see p. 28).

The Forum was based on the assumptions that while knowledge is important, it alone is not sufficient for initiating change. Shifts in school cultures and teacher identities are also required. As Russell and Hodson (2002: 489) claim, "It is not enough for students to be armchair critics," they also need to get their hands dirty and learn how to take action. The compiled vignettes, explanations and responses above serve to illustrate the tensions that often arose between conventional notions of school and the process of supporting students to take on action projects in schools. They are drawn from our

four-year research project with the Forum (see Barrett, 2006; Barrett & Sutter, 2006; Barrett, Hart, Nolan & Sammel, 2005).

The Youth Forum on Sustainability, developed by Learning for a Sustainable Future
Information: www.lsf-lst.ca
Sample projects include: developing an anti-idling campaign to reduce emissions from parked cars; adding planters and other features at the school entrance to enhance the school's image; incorporating healthier food into cafeteria menus; conducting water and waste audits; naturalizing sections of the schoolyard; creating a sustainability mural; creating advertisements to challenge throw-away practices, and developing school composting and recycling programmes. (see www.royalsaskmuseum.ca)
Acknowledgements: We gratefully acknowledge the support of Learning for a Sustainable Future, the Royal Saskatchewan Museum, and the Centre for Sustainability, University of Regina.

ESD in Canada
Sustainability Initiatives in Canada support diverse approaches, which vary across formal, informal, and non-formal contexts. Among many other initiatives, they are supported by:
• A National Association, Environmental Education and Communication (EECOM), with an annual journal, Canadian Journal of Environmental Education, established in 1996
• Publication of Green Teacher, an internationally recognized teacher journal
• Three United Nations designated Regional Centres of Expertise on Education for Sustainable Development (Regina, Saskatchewan; Sudbury, Ontario; and Toronto, Ontario)
• Provincial working groups in Sustainability Education, e.g. www.saskesd.ca
• The Framework for Environmental Learning and Sustainability in Canada (2002), a publication based on a broad consultative process (www.ec.gc.ca/education).

Office of Ideas

Children Offer Advice to Each Other in Order to Develop Ideas And Solutions for Social, Practical and School-Related Problems

Story

Early in the morning, long before the school bells ring to announce the first lesson, somebody has dropped a letter in the letter-box of Marco's class. Bright yellow and green letters say "Office of Ideas" on the box, thereby marking this class as the seat of child-to-child advice. Marco and his colleagues fish out all the letters, as they do every day. Today they find an urgent letter from Jasmin. "I am always being called 'spectacular snake'. I can't stand this any longer and ask for help." Marco reads the letter out loud to his advisory group of four children. This week they are in charge of the "Office for Ideas" letter-box. Normally they deal with small ideas and problems, which can be easily mediated among a small number of children. "But, isn't this a situation where we clearly should consult the whole class?" asks Corinne, the eldest of the group. Marco hesitates, because consulting a whole class is a big deal for the "Office of Ideas," especially as Jasmin's class is two grades lower than theirs. "You are right, we will invite the whole class," Marco announces, upon reflection agreeing that Jasmin's problem is indeed important and far-reaching. "I'll write the invitation," says Corinne as she jumps up to get an invitation form.

The next day, after class, a teacher in charge of the children of the "Office of Ideas" prepares a room with a circle of chairs. In the middle of this "fish bowl" sits Jasmin, accompanied by a friend, together with Marco who will be taking notes and Corinne who is moderating the process. Besides these four children stands an empty chair, and around the "fish bowl" sit Jasmin's classmates. After Jasmin describes her problem, those in the class who would like to ask a question in order to deepen their understanding or to bring forth an idea for a solution sit on the empty chair. After half an hour of dialogue and reflection, Jasmin resumes, saying, "Well, I want to thank my class for a good talk. I guess I have received some good ideas, especially to take my glasses seriously – as the necessity that they are – and to stand up for this." The math teacher enters the room to close the session.

The Office for Ideas is not restricted to children's problems. The young advisors also help teachers and parents who are seeking solutions to school problems. Natalie, one of the students describes: "A teacher asked us for help because the noise of water

bottles falling from desks in her classes always disturbed her lessons." Water was seen as an essential need for all students, so they couldn't be banned from the classroom. However, the students easily developed a simple and cheap solution. Natalie's friend, Nora, continues, "Out of old bottles we started to hand craft school beverage holders in all the classrooms. We cut them and attached the bases with a short rope to our school tables. No bottle will now fall from a table and disturb a child or a teacher." Natalie and Nora are visibly proud of the school-wide solution.

Project Rationale

The „IDEENBÜRO" is based on a child-to-child approach to solving problems. In contrast to the mentoring and mediation systems that are well-known in schools in several countries, the „IDEENBÜRO" concentrates on the potential of imagination and on generating general solutions for all kids in a school community rather than focusing mainly on individual problems. Should a problem arise, each child is free to place a letter voicing the problem in the letter-box of the "IDEENBÜRO". Once a week, the students in charge open the letter-box, read the messages and invite all the children who are seeking advice via an invitation form. For a fixed hour per week, the children of the "IDEENBÜRO" are free to leave their classrooms and tend to their consultation duties. The teachers are informed about their absence, and the children meet in an "adult free" space in the school-house, provided by the principal. Usually a section of the school library or a small chamber of the school secretariat serves as the "office". In this office all the requests are looked at, invitation forms are filled out, and the small idea consultations take place. Only the class consultations take place in the respective classrooms.

Sometimes the letter-box is empty, which is not a reason for the children to feel useless, however. In such instances they spend time seeking out solutions together with some other class representatives to open problems such as school bus delays, ugly graffiti on the school walls, or dangerous skateboarders on the way to and from school.

„Since we have the office here, I have got so many more ideas," Marco is convinced, "and the ideas are getting better and better." Jasmine adds empathically, "The IDEENBÜRO helps children experience empowerment simply through having good ideas."

The „IDEENBÜRO" (Office for Ideas) was initiated in a school in Leubringen as a response to the increased rate of mobbing and violence at the school ground. UNICEF Switzerland awarded this initiative with the SWISS Orange Award 2004 to disseminate the idea. To date 23 schools have adopted the idea in the region of Berne and beyond.

The IDEENBÜRO is a simple but relevant practice that promotes children's active citizenship. These kinds of practices can be connected with children and youth municipal councils, where children are asked to confront adults and decision makers. From an educational point of view, whatever form is used to introduce children to the responsibility and task of citizenship, the emphasis is never on the solutions proposed, but on the methodology being learned: on the ability to "listen actively" and on the capacity to accept and negotiate varying points of view.
Website: www.ideenbuero.ch

ESD in Switzerland

In Switzerland each of the 26 cantons is responsible for its compulsory schools and has its own policy framework. Exchange and dialogue between the regional educational systems is organised in the "Conference of Ministers of Education (EDK/ISD)". This high-level body initiates most of the school development initiatives in Switzerland, and the federal law only works at the level of providing recommendations. There exists no national Ministry of Education.

The EDK coordinates national key players in ESD, such as NGOs, two foundations (Stiftung Umweltbildung Schweiz, Stiftung Bildung und Entwicklung), and involved ministries and international partners. The latest initiatives of the EDK are a national action plan for ESD in Switzerland, a course in ESD for the upper secondary level and cooperation with the international network ENSI (Environment and School Initiatives).

The performance of ESD in Switzerland is mainly taking place at the regional or even individual school level. Some cantons support their schools in developing ESD projects, but until now ESD is not recognised in any official curriculum. In most of the curricula, an interdisciplinary subject is integrated which includes Environmental Education, Citizen Education and Health Education. ESD fits into these topics. The teachers and school teams are, therefore, the most important players in the development of initiatives in the field of ESD. A large variety of good projects are underway, but most of them only have a small impact because of the lack of tradition in exchange/dialogue and the non-existing exchange platforms for school projects.
Coordination of the main activities in the field of ESD (including teacher education and policy development) will be a very important step in the next few years. Schools and their partners (such as communities) need a strong backbone, such as an interregional network, where experiences can be exchanged and good practice becomes visible. The launch of such a platform is part of the national action plan for the near future.

To Form the Citizens of the Future (I)

Nowadays, all across Europe, more and more towns are promoting the right of children to be actively involved in positively transforming their bioregions and communities. These initiatives are quite differentiated: children may help plan or redevelop green areas, school yards etc.; they may take part in educational projects, such as the international week called "I walk to school" or the Italian "Bimbibici"; or they may set up children and youth municipal councils.

Such councils were first created in France in the 1970s to promote active citizenship, to teach children how a town council is elected and how it operates, and at the same time to create an environment where the younger people would be free to express their views about their own towns and represent these to the adult population.

The councils were very successful and spread rapidly, both in France and in other European countries. In France they increased from 200 in the early 1990s to 1600 at the present time.

The Convention on the Rights of the Child (1989) and its ratification by all European countries has played a huge role in promoting these councils. In fact, it created a new notion of childhood, whereby children are seen as individuals with the right and the ability to express their views on everything concerning them, and that they can therefore contribute to the improvement of their communities.

The French model, albeit with some local variations, presents some characteristic traits, in particular the number of representatives that are elected and that have consultative powers in the town councils, and the small annual budget.

The children and youth municipal councils (CCR in Italian) multiplied in Italy following the ratification of the UN Convention by the Italian government in the early 1990s. The majority of CCR follows two distinct approaches, the first one was elaborated by the "Democrazia in Erba" Association, and it is the one most closely related to the French councils. In this approach the children involved in the project first explore and study their bioregion and community, and discuss its problems. Second, electoral lists are drawn up with a programme, and an election campaign is organized. The group of children with the most votes will work to implement their ideas. The target age range for these CCR is roughly between 9 and 13 years of age – covering the last two years of primary school and the whole span of middle school.

The second approach, formulated by the "Centro Psicopedagogico per la Pace" in Piacenza, also in the 1990s, is more original and similar to the one by Francesco Tonucci's

"Citta dei Bambini". Several points differentiate it from the first approach, namely: the necessity to distinguish themselves from the town councils, the importance given to children's spontaneous participation, the emphasis on negotiation in conflicts and the need to come up with new rules that are universally agreed upon, and the essential role of a strategic allegiance between children and adults. All this is based on education as "active listening", where the subjects of education are placed at the centre, and the adult educators are willing to be questioned.

Among the many initiatives, the middle school children in Lentate sul Seveso, a small town of 15'000 people north of Milan, have been learning how a town council functions through treasure-hunt type games. They have also been discussing their everyday difficulties and planning small projects. In the current year 2007, some representatives from the council will work together with a group of disabled children to set up a show with the aim of promoting a better understanding between the two groups.

Websites:

www.ancej.asso.fr (Association National des Conseils des Enfants et des Jeunes)

www.camina.it; www.cppp.it (Centro Psicopedagogico per la Pace di Piacenza)

www.lacittadeibambini.org

Contact: Monica Vercesi, monicavercesi@virgilio.it

Fast Spoke
Students' Enterprise for Sustainable Development

Story

Standing at the doorstep to the cellar, she watches him cleaning the bicycle wheel, spoke by spoke. "Get out of the light, Angela," he grumbles, his glasses dropping from his white-haired head down to his sunburned nose," My eyes are not the best any more." "Hey Grandpa, will you really come to our action day at school and help me with the bicycles?" Angela asks, high-voiced and speaking in an unnaturally quick manner. "Since Grandpa is retired," her grandma moans, "He never leaves this dark room filled with old, carefully polished bicycles." Grandpa slowly turns to Angela, "Don't worry," he says and, turning fully to his granddaughter and with a shadow of a grin emerging on his face, continues, "I will come to your action day, but make sure that the young guys in your class convince Knuth Kolbe to teach them some respect for traffic."

Mr. Kolbe is the policeman for the district around the school; grandpa is referring to the mission this policeman has carried out for years to provide special knowledge in traffic security and regulations in connection to bicycle use on public roads. "Michael and Nicola will check this," Angela sighs relieved. Walking back up the cellar steps grandpa's voice follows her. "And tell your friend, ...what's his name?" "You talking about Walter?" she asks with a slight hesitation in her voice. "Yes, Walter! Tell him not to forget me here in this damn cellar with all the equipment when he wants me to come help him in the bicycle workshop." Angela had initially been sceptical when Walter first proposed that they invite her grandpa to school to share and apply his chemical background on lubricants and his knowledge and experience with ecological footprinting on the topic of bicycle reparation. However, after researching the topics of chemistry and sustainability at school, she found dozens of articles in which her grandpa is mentioned, and now feels rather proud that she is bringing him to her school's action day on bicycles. Rushing up the staircase, Angela nearly crashes into Pete, who is covered by a huge paper roll, so big that all she can see are his thin legs. "Good thing you have long arms," she laughs, "Where are you coming from?" "Nicola and Søren left me with this, I am supposed to stick these announcements on the white boards in each classroom." Peter responds. "And, where are they now? Angela inquires, "Shouldn't they be with you advertising?" "Well," says Peter, "They are both on Søren's PC, building sites for the action day with our articles and video materials. Anyways, I have to go now, otherwise

I'll drop all this stuff here." Angela feels she should go see Walter, but rationality wins over. "Come on, Peter, let's carry your paper bomb to school. The guys are eager to know more about joining our action day."

Project Rationale

Schools trying to establish ESD as a main topic in their school profiles often offer students the opportunity to engage in student enterprises as an opportunity for self-oriented learning. In the field of economics, the questions of sustainable production and consumption are included into a long-term plan and vision. In contrast to the usual student enterprises, ESD schools establish student enterprises with the assistance of teachers for the long term. Students from a variety of age groups work together , taking on and sharing several roles: management, production, research and development, quality insurance, public relations and advertising and, last but not least, the sale and distribution of the services and products. The roles change from grade to grade. As this participation in student enterprises is integrated into the school programme and local curricula, students bring their own initiative and sense of responsibility into their learning and leave traces both within their school, as well as beyond.

Dealing with economic questions in the context of sustainable development is a complex question at the secondary level. When discussing sustainable development, most schools tend to only stress the ecological questions and models of solutions. Student enterprises, on the other hand, deal with real-life topics that are connected with the young people's lives. These enterprises thus offer a great opportunity to involve the students in the ecological as well as social and economical areas of sustainable development.

The above-described case of an action day for bicycles includes real-life services for students, parents and other community members, such as a technical and security check of the bikes. The checked bikes then receive a badge from "Flotte Speiche". Students get acquainted with the issues of calculating time and material costs, and negotiating fair prices for the repair and rent of bicycles. On such action days, hundreds of bikes are checked, contacts to the police and the district government are settled, and long-term services for people of the neighbourhood are established.

In addition to the described bicycle action day, there are many other successful services and products being offered by school enterprises in the lower secondary grades. These include: an ecological catering service for school parties with products coming from fair trade, creation of websites or other pubic relation activities for schools, production of writing booklets or sustainable Christmas gifts, and the organising of campaigns for ESD (www.axxi.de)

School enterprises

Student enterprises have a long tradition in Germany, not only in vocational schools, but also in secondary and upper secondary schools. There also exist special programmes to prepare children with special needs so that they can understand the working area and economic sector. Special programmes are financed by bank associations and industrial organisations. Thus all schools are offered the option of establishing a student enterprise. The main topic and aim of these programmes is to educate students in the direction of entrepreneurship.

Website: http://www.schuelerfirmen.de

German national programme on ESD "blk21" and "transfer 21"

Student enterprises are part of the German programme on Education for Sustainable Development and form a main project under the umbrella of the UN-Decade ESD.

The programme is financed as a joint venture of the Federal Government and 14 states of Germany. Up until 2008 it plans to involve 10% of all German schools, and by the beginning of 2007 more than 1800 schools have already gotten involved with projects in the fields of:

-Interdisciplinary learning

-Participative learning

-Innovative structures of schools

Websites:

www.transfer-21.de

www.nasch21.de

www.blk21.de/index.php?p=51

www.blk21.de/index.php/daten/themen/schuelerfirmen/daten/texte/index.php

Just One More Glass
Action Competence in Health and Environmental Education

Story

Although it is really off-putting when he tumbles into her room late at night after hanging out with his "good friends," he is still her brother. Griet brushes these thoughts away like a nasty fly. Her mind wanders back to today's class, to the project group on alcohol that took place in the morning, when Maaike, her classmate, whispered to her, "I can think of someone in your family who seems to be captured by alcohol." Griet momentarily hated her classmate for the grin that directly followed this comment. Now sitting at home, the windows open, the air full of laughter and giggling children's voices coming from the playground across the street, Griet tries to concentrate on her homework. She is writing about alcohol in peer groups. But it is getting harder and harder to do when what started out as a seemingly abstract topic now touches her most intimately as she awakens to the fact that someone in her own family might be a victim of a social disease. She has rarely felt school to be so relevant to her life than at this present time when they are studying alcohol in an intersubjective school project. Following a sudden inspiration, Griet decides she will talk to Maaike before school tomorrow. They actually have a common concern. Maaike's boyfriend is one of Griet's brother's "special friends," who he often hangs out with for just one more glass.

Griet, Maaike and their 7th-grade classmates decided to learn about and work on the issue of alcohol as it was something that was beginning to interest more and more of the students, and, thus, also their parents. Inspired by the IVAC approach (Investigation, Vision, Action & Change), they worked through both the investigation and the vision phases, and then, in the action phase, they investigated structures of power, actions, and strategies.
During the investigation phase they analysed alcohol from biological, sociological, cultural, and historical perspectives. They also discovered that the consumption of alcohol is dependent on economic conditions and, among other things, they analysed the consumption of alcohol during the last century, making comparisons with the economic development of Denmark. The students also worked with factors that might influence their own consumption of alcohol, for example, peer pressure, advertising, loneliness, unhappiness, and social events, using role-playing to clarify the mechanisms behind these causes.

Their vision centred on creating a society and a school, where there was balanced and responsible behaviour in relation to drinking, where alcohol could be viewed as a positive contribution to the culture, and where no one harmed themselves or others as a consequence of alcohol consumption.

The students discussed what such a society would look like, how to make sure that all citizens (children as well as adults) would have equal opportunities for stimulating and exciting lives, and what a society (including schools and families) would look like if no one was left out or felt lonesome.

As one of their concrete actions, the students developed seven pieces of advice, which they decided to present to their parents:

- Young people have views on alcohol.
- Have faith in young people, and in your own children.
- It is not your problem if other people's children drink.
- Allow your children to go to parties; nothing will happen.
- Allow your children to taste alcohol.
- Allow your children to have pre-parties at home.
- Allow children to drink only low-alcohol drinks.

The students' tangible action consisted in the planning of a parent evening to present their work, their ideas and advice, and to discuss the whole topic. All of the parents attended the meeting. The students presented their findings and then discussed in small student–parent groups, making sure that parents were not in the same group as their own children.

Following this evening event, the parents indicated that they had learned a lot about their children's attitude to alcohol, and several parents indicated that they had altered their perceptions.

Project Rationale

Although project themes may deal with different topics, they share the same basic educational approach, namely action orientation, participation, and inter-disciplinarity. Under certain conditions the school and students can act as catalysts for changes on many levels: in the community, in the school, in students' own lives, and in their families.

Choosing and working with authentic problems that are based on students' in-terest, participation and actions really benefits the development of students' action competence and empowerment. As a pre-condition for any change, the key word is ownership. In order to stimulate the development of ownership, it is crucial that the students participate genuinely in the selection of the topics to be addressed, in the development of visions, and in the actions to be carried out. Students' concrete actions must be dealt with as integrated elements of teaching and not as end products. Students acquire action competence by taking action and trying to influence 'real life'

as part of their education. The genuine participation of students does not imply that teachers play a passive role. The core element is genuine dialogue between teachers and students, with the teachers playing the role of supervisor and facilitator—asking provocative questions, coming up with suggestions and ideas for action strategies, putting obstacles in perspective, and pointing out possible partners for collaboration. The challenge is to find a balance between involving students as active partners who are taken seriously and the partnership the teachers provide as they play an important role in the dialogue and process. Without feedback, the students cannot develop their own attitudes and understandings. Additionally, a genuine commitment and positive approach on the part of local government stakeholders are also crucial. Especially in health and environmental issues, key players from the local community have to take students and their interests seriously.

Action Competence

The concept of action competence was developed by the Research Programme for Environmental and Health Education at the Danish University of Education. It is considered to be the main objective of Health and Environmental Education, as well as Education for Sustainable Development in primary and secondary schools.

Action competence expresses students' commitment, will and ability to take action. Several attempts have been made to make the concept of action competence operable and to define it. Among other things the following elements have been specified:

- Insight and knowledge: a broad, positive, coherent and action-minded understanding of health and the environment
- Commitment: motivation to become involved in change in regards to one's own life and in the processes of a dynamic society
- Visions: ability to go „behind" the health and environmental issues and to think creatively
- Action experiences: real experiences from participating individually or collectively in changing and solving health and environmental problems within a democratic framework, and considering how barriers can be overcome

The first component is concerned with students acquiring a coherent knowledge of the issue they are concerned about and want to tackle. This involves gathering knowledge about the nature and scope of the problem, how it arose, who it affects, and the range of possibilities that exist for solving it.

The second component relates to encouraging students' commitment and drive. Obviously it is important to build up this component if the knowledge acquired is to be transformed into actual health-promoting actions. Commitment is often developed within a social context, meaning that group work is an essential part of the learning environment of a health-promoting school.

The third component of action competence involves developing visions of what one's life could be like in general, and how society and the environment could be improved in relation to the particular problem of concern. This component deals with the development of students' ideas, their dreams and perceptions about their future life and the society in which they are growing up.

The fourth component, action experience, stresses the benefit of taking concrete actions during the learning process. Experiences from a number of projects support the view that participating in a wide range of different types of actions is a vital step in the development of action competence.

A number of basic social skills can be added to the list of components of action competence. These include among others: self-esteem, ability to co-operate, ability to express and articulate, self-confidence etc. Finally 'critical thinking' or 'critical decision making' might be mentioned as an independent component in a number of connections.

Websites:

www.dpu.dk Danish University of Education (including the Research Programme for Environmental and Health Education)

www.uvm.dk Danish Ministry of Education (including curriculum guides etc.)

Education for Sustainable Development in Denmark

The Danish Government has taken various initiatives to promote Education for Sustainable Development at different informal and formal educational levels (primary, secondary and vocational education, as well as NGOs). The Ministry of Education, together with the Danish UNESCO Commission, have established an inter-ministerial group in order to coordinate the efforts in the field – among others, a Dialogue Forum to which NGOs, educational institutions, organisations and other interest groups are invited. A smaller amount of funds has been earmarked annually toward conferences, ESD developmental programmes and support from researchers. For instance, The Research Programme for Environmental and Health Education at the Danish University of Education has been asked to support the Ministry of Education by producing a clarification of the concept of ESD in the Danish context and a state-of-the-art presentation of the ongoing activities.

At a more specific level, an inspirational booklet on ESD has been sent to all primary and secondary schools, and a website has been established. Despite these efforts, however, there is still no aggregate Danish strategy in place for the UN Decade on ESD.

At the school level, ESD does not have its own curriculum, although most school subjects have included central elements of ESD and contain the notion of 'sustainable development' in their curricula. This is especially due to a long tradition of working with issues and questions of ESD within the fields of Environmental Education, Health Education (which has its own curriculum), Citizenship Education and Future Education, alongside a focus on ESD-related skills, competences and virtues that facilitate participation in decision making, action taking, value clarification and development. A section

in the School Act for primary and lower secondary schools points to such ESD-relevant aims: *"Confidence in their own possibilities and a background for forming independent judgements and for taking personal action"*.

The performance of ESD is, however, highly dependent on the individual schools' and/ or teachers' interest for integrating these issues in their teaching. Although there are many examples of interesting ESD projects, there are no evidence-based calculations at the national level on the actual completion of ESD teaching programmes.

Is Chocolate Sweet for Everybody?
Complex Thinking and Conflict Management

Story and Project Rationale

It is early in the morning and I am walking to the high school I teach at. Today I am going to present a new proposal. As is the case every year, a four-day trip to the Pyrenees takes place at the end of the 8th grade. I need to start thinking about a reasonable and effective way to collect the financial resources for this trip, but how can I do this? My thoughts keep circling around how to organize a fundraising effort that would be both educational and profitable.

A little later, as I stand in front of the coffee dispenser in the teacher's room, an idea emerges. As is often the case, the evident is many-a-time right in front of us: FAIR TRADE! After several talks with other teachers, the high school had chosen to get a coffee dispenser managed by a company that promotes fair trade. As I look at the dispenser, the idea comes to me to propose to my 13-14 year-old students that we organize a fundraising event based on fair trade products.

Midday, it is time for my class. I enter the room convinced about the viability of my proposal. First of all I ask my students if they know what fair trade is. Surprise! Only a few of them have ever heard of the term and concept. For some, it describes a form of trade that provides goods very cheaply; other students think that it involves the trade of ethnic products, like those offered by the company "Natura"; and several students state that it is a type of trade that considers justice. The students get involved in a discussion that goes much further than what I initially expected. During the debate a new challenge emerges: we not only need to figure out how to raise funds, we also need to engage in coming up with an understanding and articulation of fair trade upon which to base our fundraising event. Thus, my next few classes have a new aim...

Nowadays, the internet provides a vast source of information. When looking for key words, such as "fair trade" and "responsible consumption", I find out about consumer schools, one being the "Catalan Consumer School (ECC)".

The visit to the Catalan Consumer School is both bewildering and thought-provoking. I had hoped to find clear explanations to consumer behaviour, and instead am presented

with questions, such as: "What can I wear today? Is water always the same price? Do I feel good?" They tell me that a good question is always the best departure point as it promotes debate, allows opinions from different perspectives to be expressed, and helps construct a common beginning at the outset of an exploration on a particular topic in the classroom. In addition, they believe that learning how to formulate a good question is a fundamental competence for any conscious consumer. Faced with the surprise effect associated with any new product on the market, posing questions is a great way to encourage the capacity for critical reflection in students.

The workshops offered by ECC help students construct their own viewpoints about phenomena through an ongoing dialogue among different perspectives and languages. These dialogues help students construct complex models that represent and explore a variety of phenomena. The workshops constitute open ways of seeing the world, ways which integrate points of view and also raise awareness of their respective limitations. Simultaneously, the diversity of languages allows for a dialogue between emotion and reason.

An act of consumption is more than a reasoned decision justified through objective arguments (e.g., "How much does it cost? What is my size? What composition does the tissue have?"). It is also an emotional act (e.g., "Do I look good in it? Who do I feel identified with when buying it? Am I a more fashionable person with it?). Thus, an approach to consumer education that is based on taking on greater responsibility requires the tools and skills to facilitate a constructive dialogue between reason and emotion. This multi-perspectival awareness is very visible in ECC's work and vision.

The visit to ECC stimulates me in my didactical reflections. I decide to contact the ECC educational staff to help me plan the fundraising activity with my students. The first thing I ask myself is: "What could the central idea be that would allow all of us work toward fair trade?" After thinking about this question for several days I decide that two central ideas might be helpful: conflict and choice.

Fair trade can be understood as a response to the conflict around the distribution of economical resources between the agents that participate in the production, distribution and selling of a product. In addition, fair trade is something that cannot be separated from the idea of choice. In this sense, fair trade is based on the actions of consumers when they decide to transform a consumer act into an opportunity to intervene when faced with inequalities.

The second question I ask myself is, "How can I contextualize the concept of fair trade so that it becomes functional and meaningful for my students?" While observing their habits it occurs to me that a good way to start our work is around a very common (and attractive) consumer product such as CHOCOLATE! After talking to my students, we begin our classroom activity.

The first thing we do is to look at and deal with our emotions. To do this I distribute chocolate bars among my students and invite them to bite it, taste it, and talk about any feelings, associations and words they might use to express their experience of eating the chocolate bar. "Mmmm," says one student, "Pleasure", another student calls out, "Good," adds a third student, and "Sweet" can be heard from a group of students. Sweet? I raise a new question: "Is chocolate sweet for everybody?" At first students appear surprised by this question, but later on they provide answers based on their own experiences. "Of course, if it were not sweet it would not be chocolate." A new student joins in the conversation and adds, "Chocolate can also be bitter." This sparks a new question, "Are we talking about chocolate being sweet or life being sweetened by chocolate?" Thus, we are getting closer to one of the central ideas of our work, the conflict between those of us for whom chocolate makes life sweeter while others on the growing and producing end are subjected to unfair circumstances, which are the opposite of sweet.

As we continue investigating our chocolate bar we start touching on the second theme, the idea of choice. We observe the chocolate bar wrapping, and bring our attention to the information on it. I ask my students, "How can we know if chocolate is sweet or bitter?" One student suggests, "By the percentage of cocoa that the chocolate contains", while another student adds, "The ingredients – whether a chocolate bar contains vanilla or milk," and a third student wonders, "Who adds the sugar in the bar?" Once again I use the scenario set by my students to pose more questions. "What pathway does the chocolate follow before arriving at the local store? The students brainstorm: "Through a process of transformation, chocolate is made, it gets distributed through brands, each company has a distribution van..."

Finding information about all the agents involved in the process of production and distribution was helpful to answer the question. The students began portraying their findings graphically. Illustrated cards were used to show the pathway followed by cacao from its origins all the way to its final destination, the consumer. A poster represented the chain of agents involved in the process of cacao production: the farmers who produce cacao, the cacao's manufacturers, and the retailers who sell cacao in their stores. And finally, we, the consumers, were depicted as part of this process. Thus a scenario was jointly created so that all the relationships and transactions involved could be established. This allowed for a deeper and clearer understanding of cacao's production, distribution and marketing. The core idea of conflict became more evident, as well as the possibility of making informed choices.

The students began to view the chocolate bar as the result of a group of relationships. It is not a static phenomenon within space and time anymore, but the result of a process through which multiple relationships orientated in space and time are made evident. The poster showed that the consumption of chocolate is not the endpoint of a linear process, but rather, the result of a group of bidirectional relationships. Although the process begins with the production of cacao, the consumer is actually far from being the last link of the chain. Instead, it becomes a new beginning, since the producer's activity looses meaning if the consumer does not buy chocolate bars.

Through the above-described activity and related questions it became clear to the students that each participant is a node in a network, and all the nodes are retroactively interrelated. New meaning was thus given to our role as chocolate consumers: We are no longer passive agents of a productive process. Instead, as members of a global economy, we become a central node that determines the existence of a product. We can decide whether to buy it or not, we can decide in which store to buy it, and most importantly, we can understand our role and responsibility as consumer to transform our environment. The importance of choice becomes more tangible and pertinent.

Standing in front of the final poster and observing it, students comment about the farmers, the producers, etc. One student points out that "The chocolate bar we buy in our store travels a lot! A second students exclaims, "And all this for just one Euro!" This provides me with a new opportunity to pose further questions: "How does the money we give for a chocolate bar get distributed? Does this money go to the producer or does most of it got to the retailer?"

In class, each group shares the results of their research. All together they have become knowledgeable about the world of chocolate. They understand now that the economical distribution of a product like chocolate is not always guided by criteria of justice, sustainability and responsibility. The terms "Conflict" and "Choice" have gained new and deeper meaning. The idea that consumers can take action in the face of a situation has now become evident. Consumption is no longer a passive act of self-satisfaction or survival, but can now be considered as a way to intervene proactively in the world. It becomes a means to take a stand in the face of conflict and injustice. But, how many choices do we actually have as consumers?

Once again, the ECC gives me the didactical resources necessary to go further with my students. They provide us with a computer-based simulation resource on money

distribution. Students work with a drawing of a chocolate bar that changes its colour depending on their decisions. The colour code represents the amount of money that is given to the various participating agents, such as the farmers, producers, dealers, retailers, etc. Students become motivated through this process of seeing how they might construct a fair trade chocolate bar. While doing this exploration, new questions emerge: "What if we raise the price of the chocolate bar? And, "What if we keep the price as is, but distribute the money in a different way?" The students don't all agree on what the best solution should be. Perhaps it is not a matter of finding the one perfect solution, but more of making individual and collective choices that increase the chance of optimum and flexible solutions.

This simulation activity shows that behind every choice lies a conflict. Multiple interests converge within phenomena. Each choice requires reflection and dialogue to justify the choices we make as consumers. In this way, individual and collective values become a powerful tool. For example, "We have distributed the money of the chocolate bar in what we think is a fairer way," or, "We think that this way of distributing the money is better since those who assume a higher risk are the farmers and thus they should be paid more," and, "It is important that the chocolate retain market value so we cannot raise the price too much, but we can increase the farmers' income and decrease the dealers' income." Such reflections bring forth further questions: "Will everyone agree with the option taken? Conflicting perspectives are considered in discussion rounds, and opinions are supported not only through conceptual knowledge, but also through involving the ethical dimensions of equity.

At the end of this project, the students have not only found answers, but have also discovered the importance of asking the right questions. They are better prepared as consumers and more aware that a consumer product is the result of a relationship network, which means that it is important not only to buy, but also to make informed decisions. During this process of learning, no one told them what to do. However, they were helped in constructing tools that enable them to make decisions and to support these decisions with rigorous arguments. I think my students are now much more prepared and motivated to organize a fundraising event that is based on fair trade!

Project Rationale: Complexity Paradigm and Consumer Education

The complexity paradigm is a wide conceptual frame that facilitates the introduction of consumer education within formal education. It constitutes the emergence of a dialogue among the following three approaches: thinking, values and action. These are taken into consideration together and make citizenship education toward sustainable consumption possible.
The complexity paradigm has as its aim the development of an open way of thinking that supports imagination and rigor, and this, far from any dogmatism. This way

of thinking aims at stimulating reflection about phenomena from a complex and systemic viewpoint.

The complexity paradigm considers that values move within an ongoing dynamic dialogue. Autonomy is complementary to dependence and allows for the construction of freedom. Anthropocentrism is complementary to biocentrism and allows for the understanding of sustainability. And finally, stability is also considered complementary to change and situates dynamism. This approach facilitates a continuously changing positioning that escapes the flatland of relativism.

The complexity paradigm understands action as a strategy. Citizens define objectives and are able to regulate themselves according to the fluctuation of any environment. In this way, citizens can intervene within a context and ensure that their actions have a global effect.

In the classroom, the complexity paradigm allows for the construction of meaning from an ongoing dialogue between phenomena and students, facilitated by the teacher. The role of the teacher is to encourage the translation of educational contexts into scenarios that facilitate the construction of meaning.

The Catalan Consumer School (ECC)

The Catalan Consumer School (ECC) is an educational institution connected to the Catalan Consumer Agency of the government of Catalonia (Generalitat de Catalunya). The Science and Mathematics Education Department (Departament de Didàctica de la Matemàtica i de les Ciències Experimentals) at the Universitat Autònoma de Barcelona (UAB) is responsible for the school's design and the implementation of its educational proposal. An official collaborative agreement between the university and the government ensures the financial resources and the quality of the educational activities developed by the ECC.

The ECC develops its activities around three axes: teaching, innovation, and research. The teaching dimension of ECC is based on the development of consumer education workshops targeted at students aged 6-16 (compulsory education), students aged 17-18 (post-compulsory education), disabled students, and future teachers. The ECC develops innovation programmes to design new strategies and instruments for consumer education. At present the school works along two main lines. One deals with finding and articulating significant and relevant questions in order to stimulate student reflection, related activities, and decision-making processes. The second line deals with the introduction of art in workshops to integrate the realm of emotions as an important aspect in consumer education. The ECC develops research to find out about the consumer habits of children and young people. This research aims at providing good and solid information so that the workshops' approaches and content are adapted specifically to

students' interests, tendencies and needs. In addition, research is undertaken to assess the school's didactical model on an ongoing basis, and thus promote its permanent evolution. The ECC acts as a centre of studies on consumer education, whereby consumer education is understood as a dialogue between teaching, innovating and investigating the topic.

ESD in Spain

ESD is not included as such in the official Spanish curriculum for formal education. An educational law (LOGSE) was approved in 1990 by the Spanish parliament, which promoted a nationwide change in the educational system. The new curriculum introduced Environmental Education (EE), Consumer Education (CE), Health Education (HE), and (Peace Education PE) among others as a transversal axis. This meant that no specific subject was designed, but instead the recommendation was to include these topics in all subjects. This curriculum regulation has resulted in each autonomous community developing its own curriculum guidelines that include these transversal contents in various traditional compulsory and optional subjects.

A new educational law (LOE) was then approved in 2006 by the Spanish parliament, which introduced Education for Citizenship as a compulsory subject at all educational levels, stressing aspects of democracy, conflict negotiation, diversity, social responsibility, etc. Although not specifically mentioned, Education for Citizenship can be seen and utilized as an opportunity to introduce Education for Sustainability in formal education.

At present ESD in schools is supported by a diversity of programmes and institutions that are adjusting their EE approaches through the lens of sustainability. These are (a) the Eco Schools Programme at the national level; (b) the Green School Programme and the Catalan School for Consumer Education that are run by different autonomous community ministries at the regional level, such as the ones in Catalonia; (c) the School Agenda 21, run by the autonomous community ministries, such as the one in the Vasc Country, and also run by many town authorities, such as in the city of Barcelona; (d) the Learning Camps run by the autonomous community ministries in Catalonia; and (e) specific programmes run by different NGOs at the local level nationwide.

Washed Ashore
Students Critically Review Their Home Island

Story

"Visiting the coast of Paliki it was so sad to look at the many closed hotels, bars, and houses with rooms to rent," says Maria from the high school of Lixouri. "Many villages look like ghost villages," she continues, conveying her impression of her school's environmental group's first field trip.

"But it is winter, of course they are closed! We need more hotels and better roads if we want to enhance our tourism. Pretty much all our families' incomes depend on it," responds her classmate, Kostas. Another classmate, Nikos, adds, "We noticed roads that could be improved or restored, tourism is important for our families."

'Yes, but what kind of tourism?" Maria persists, provoking her classmates with an energetic tone in her voice. "Do you think that if all the beaches can be reached by cars and buses their appeal, their special beauty, will remain the same? And did you hear about the plans for the drainage of the wetland in order to build a big Thalasso-Therapy Centre?" she continues. "The wetlands will be gone for ever, and who here on our island will stand to gain from the realisation of that big plan?"

At the start of their project the students all had more or less similar preconceived ideas in relation to tourism: they recognized its significance for the area and saw its expansion as an attractive method of achieving economic growth and improving their families' incomes. However, during the field trips they began to question their own understanding of and assumptions about tourism, and to view some of the development projects in the area as controversial. They began considering a more holistic approach to tourism and searching for ways to implement this.

The Coastal Zone of Paliki (Kefallonia)

The project "The Coastal Zone of Paliki" was implemented by Lixouri's high school on the island of Kefallonia. At the beginning of the school year, teachers who wanted to work in the field of School Activities (environmental education, health education, carrier guidance or cultural issues) proposed a variety of relevant subjects to the students. Eighteen students responded to the idea of implementing a project concerning the coastal zone of their area and formed the "environmental group". The coordinator was

a biologist who in the past had been working in a variety of environmental NGOs and participated in eco-tourism activities in Kefallonia and other areas of Greece as well. A language teacher completed the teachers' team.

The students of the project report that Paliki is a peninsula of Kefallonia, which covers 123,03 km² and has a population of 7836 inhabitants. Through a literature survey and interviews they found the following information:..." The main occupations of the inhabitants are agriculture, stock farming, fishing and seafaring. Over the last ten years a new sector has gradually been developed in the area: tourism. Nowadays many inhabitants supplement their income with tourist-related activities, mainly by renting rooms to tourists and running restaurants and coffeehouses. An increasing number now lives exclusively off tourism. This recent development has caused an important change in the way the land is being used. Unlike the past, when activities were dispersed all over the peninsula, they are now increasingly concentrated in the coastal zone.

Goals and Aims

The goals of the project decided by the team were to a) get to know the main eco-systems which form the coastal zone, b) analyse the various human activities taking place in this zone, as well as their impact on it, and c) envision future perspectives for a sustainable development of the coast. Beside these "official" goals, the coordinator set three additional objectives, which stemmed from the initial discussions with the students and also from the implementation of the planned activities.

First, the coordinator wanted the students to understand the complexity of the issues related to the sustainable use of the coast, as they seemed to have a rather simplistic view of what the management of such an area might mean. Indeed, they were inclined to see reality in "black and white" and to categorize people and activities as either "good" or "bad" for the environment, without taking in account all the parameters. Thus, a deeper understanding of the interconnection between environmental, social and economic dimensions, which lies at the core of sustainability, became the key issue of the project.

The second objective was the development of a critical ability and literacy. The fact that most of the students were born and raised in the area, with few of them having ever travelled to other countries, led them to accept everything as "normal". In fact, they didn't seem to have any doubts about the actual direction the development of the coastal zone was taking, neither were they conscious of alternative ways to develop. Cultivating the ability to "read" – to decode the local environment and its various signs, to understand their significance within social and economic practices, and to work on visions concerning the future of the area – was a core aim of the project.

The third important dimension of the project was the empowerment of the students themselves. Through the brainstorming and ensuing activities, it became evident that most of the students expected external interventions to solve the problems. For example, they expected NGOs to clean the beaches or to protect the endangered species living in the area, and Ministries to lay down the laws concerning building limitations, etc. The possibility of the local community taking and realizing collective decisions concerning the usage of the coastal zone was not a high priority on their initial agenda. Empowering the students to act at the local level and to develop a sense of stewardship towards the local environment thus became one of the project's targets.

Activities and Actions

The above-mentioned objectives, combined with the fact that all the students knew the area very well as they had lived there all their lives, determined what kinds of activities were implemented during the project. Together, the teachers and students decided to take several field trips in order to cover the different aspects of the coastal zone from a new perspective. All excursions were planned carefully by the teachers. The students kept notes and took photographs. Through observing and posing questions they tried to formulate and discuss feasible answers.

The role of the teachers was generally one of being an interpreter, assisting students in seeing their own bioregion in a more critical way. Their main aim was to help students rediscover their bioregion more consciously, and to help them learn how to detect the impact of various forms of human activities, envision the area's future and imagine alternative ways which could lead to a more sustainable development of the coastline. The teachers explained the characteristics of the different types of coastline, and helped the students identify the organisms that live there, as well as understand the changes that have occurred during the last year due to human activities. They gave answers, but they also asked many questions and provoked debates on controversial issues.

The transportation of the students required special arrangements. In addition to unpredictable weather conditions, which often caused field trips to be postponed, the project's meagre budget (70 Euros!) didn't allow for renting a bus. The students' parents ended up playing an active role by bringing small groups to different sites. The municipality also transported the environmental team on one occasion, and the local fish farm put its private bus at the team's disposal.

What We Have Learnt

In the last phase of the project, once the field trips were accomplished, the students selected photos, created paintings, elaborated objects and wrote texts to present their experiences and expose their ideas and proposals for a sustainable use of the coastline.

The result of this effort was a power point presentation and a small exhibition, both of which were presented to the whole school at the end of the school year. This presentation was the occasion for a general discussion within the school in regards to the future development of the area. It is worth mentioning the main conclusions reached by the environmental group through this project in its own words:

> "• *We realized how little we know and how much we still have to learn in order to understand our own area.*
> • *We also realized that the sustainable management of the coastline is a very difficult issue. But it is worth a try because once the development goes in the wrong direction, it is very difficult to undo it.*
> • *We are committed to continue to work on the issue.*"

The results of this project will certainly not be seen immediately. However, it is interesting to note the words addressed by one student's mother, who was recently elected mayor of the area, to the project coordinator: *"After all the work you have done with this project, it is difficult for me not to work for the environment and for sustainabilit".*

ESD in the Greek Curriculum

The new Cross Curricular/Thematic Framework for compulsory education (Primary and Junior High School), published in 2003, doesn't refer explicitly to Education for Sustainable Development. The concept of sustainability is, however, present in connection with the environment. Sustainable development is presented as an unmistakable proposal for ensuring prosperity all over the world, through the preservation of environmental balance. In order to realize this proposal, a reconsideration of personal and social needs is required, a fact that in turn leads to a re-assessment of the system of values that individuals and societies adhere to. School education has an important role to play "concerning the development of students' environmental awareness on matters such as management of natural resources, preventing any speculative effort that sets our natural environment in continuous danger" (G2/210721/23-3-2003, No 2).

Although the notion of sustainability is clearly related to the natural environment and the management of natural resources, important dimensions of Education for Sustainable Development are present in other principles set forth by the Cross Curricular/Thematic Framework. Concretely, providing equal learning opportunities for all people, reinforcing cultural and linguistic identity in multi-cultural societies and sensitizing pupils to issues of human rights, world peace and preserving human dignity are among the principles that reflect some of the fundamental ideas of Education for Sustainable Development (UNECE 2003, UNESCO 2005).

The new Cross Curricular Framework promotes the horizontal linking of the Individual Subject Curricula, which means the appropriate organization of subject matter content to ensure a multidimensional analysis of cross-thematic concepts, such as

sustainability, that involves different subject areas. This cross-thematic approach should be supplemented by methods of active acquisition of knowledge, which are applied in the teaching of individual subjects and are further explored during cross-thematic activities.

ESD in Greece

Although the term "Education for Sustainable Development" appears in official documents in 2005 for the first time, the concept of sustainability or sustainable development has a much longer presence in the country. The field that has incorporated sustainability since the mid-90s is Environmental Education. A marking point for this was the International Conference "Environment and Society: Education and Public Awareness for Sustainability", organized by UNESCO in Thessaloniki in 1997. This conference launched the debate on sustainability in Greece (Scoullos 1998). Since then, the concept appears in many official documents related to the two fundamental institutions supporting Environmental Education: the EE officials (educators appointed in each of the country's 58 educational departments in order to supervise the implementation of EE school programmes) and the Centres of EE. The circulars addressed to EE officials, which drew up the guidelines for the implementation of EE, provide a good example of the new directions of the field in the light of sustainability. In the circular of 1998, for example, it is recommended that fundamental elements in the implementation of any EE project should be the detection of local problems, the collaboration with the community and the elaboration of action plans by students. The following year's circular clearly stated that, "Through EE, teachers and students are searching to bring the subject of sustainability into the educational process". Along the same vein, the first goal set for the Environmental Education Centres is the development of responsible attitudes and behaviours, which will contribute to the protection of ecological equilibrium and quality of life in the direction of sustainable development.

ESD in the UN Decade

In 2005 the Greek Ministry of Education, following the goals of the United Nations and UNESCO-UNEP, brought educational initiatives into the framework of the Decade of Education for Sustainable Development. Thus, implementing UNESCO's plan for the decade, the school year 2005-2006 was nominated the Year for Water and the present one (2007) the Year of Consumption. Each year's thematic concern is centered mostly on "School Activities" – educational actions that are embedded in the curriculum,   although implemented outside the school timetable and in which teachers' and students' participation is on a voluntary basis. From the four fields included in "School Activities" (environmental education, health education, career guidance and cultural issues), the first two are directly connected with Education for Sustainable Development, while cultural issues also have a role to play. For the implementation of a year's thematic

concern, a closer collaboration among the three forms of School Activities is promoted in order to develop a unified field for study and action.

Teachers who are willing to implement projects on health or environmental education are thus encouraged to work in a synthesizing way on issues related to the relevant theme of the respective year, and to undertake initiatives and actions in their schools and local communities. The aim of such projects is the development of attitudes in the active citizen and the opening of schools to society via the implementation of actions in partnership with the local community.

Cuisine Durable
Sustainable Development in Home Economics

Story

In a small school in a town in the Auvergne groups of students are washing and chopping yellow carrots, red cabbages, green onions and other vegetables. Two of them, Frederique and Danielle, have placed all the vegetable slices on a huge round tablet and are arranging the coloured slices. Frederique, with his curly black hair pulled by a girlish hair ribbon, polishes the blade of a Japanese knife. "It's cutting veggies excellently," he murmurs before he turns to his classmates. "I guess the stuff here will be enough for the whole party,"he comments. Danielle nods and watches a carrot disc drop from the table ". Frederique catches it with one hand, shakes it briefly, and places it back on the tablet." "Looks like - we have a small break until Monsieur Gilbert brings the eggs from his farm."

At first sight there is nothing unusual going on in this lesson on home economics. A second look, however, reveals a surrounding that differs from a normal school kitchen. Frederique, Danielle and the other students are working on tables in front of an old mill, which, come evenings, operates as a restaurant for special vegetarian food. On weekday mornings the owners of the mill restaurant open their doors for secondary school students. A middle-aged couple, who mainly cooks in the restaurant, collaborates with the teachers and students of the local school. They use vegetables that have been cultivated in the school garden, grains that are grown in the region, cheese and eggs from local farmers, and carefully selected fruit from overseas. The initiators of this effort call this local project „Cuisine Durable": A Sustainable Kitchen.

„For the past six weeks we have been preparing a party for our relatives and friends," explains Frederique, "And this occasion is meant as an expression of our willingness to change some of our daily eating habits." The front of the mill is decorated with flags, and above the tables, cloths are hung like sails. „Although we prepare a lot of local food, we also want to open our guests' minds to the global dimension of food through this sailing image," Danielle shouts from the mill's roof, tying the last rope that is holding up the decorations. Climbing down the ladder she waves to her parents who arrive by car. "We have learnt so much about consciously choosing our ingredients and cooking in a healthy and sustainable way, but can you imagine how hard it will be to convince

your own people at home to assimilate and accept your new knowledge" Through a continual stream of feasts and celebrations the students seek to implement „Cuisine Durable" in their everyday life.

In the same way as colours are the building blocks for an inspired and inspiring piece of art by a painter, a cook's choice of fruit, vegetables, grains, fish, meat, nuts, herbs and spices forms the basic elements for a creative and healthy nutrition, both for daily life and for special celebrations. In order to cook for a sustainable kitchen many areas need to be considered. Where does the food come from and how is it grown? What are the individual dietary needs of those we cook for? How healthy is the food? Is the composition creative, both in display and taste?

There are plenty of reasons to suggest food as a key theme for stepping into ESD. It touches everyone on a daily basis and is a permanent topic in family life and at every break time in school.

Children have a natural interest in combining and creating interesting dishes. Besides the theoretical aspects of what makes for a balanced diet, children enjoy discussing the pros and cons of a vegetarian diet versus a meat-eating one, and the challenges of mainly drawing upon local food or predominantly upon international imports. Personal desires may or may not relate to the body's needs and the decisions students make in relation to their daily food and drink. This translation of the experiences and insights gained during the lessons over to the home kitchen represent a crucial momentum for the project.

By getting really involved in the preparation of food, in choosing the ingredients, and in discussing the menu, the students are given the opportunity to reflect on the concepts of the 'time' and 'space' needed to produce a meal: the time it takes for the planet, the human time required to raise animals and grow plants; the soil needed to produce what we eat; the time necessary to process and present food in an appealing way; the geographical distance that food travels across nowadays mainly due to the economic organisation of the food market; and the varying amounts of different time and space that are dedicated to the preparation of food in different cultures.

The message of a sustainable kitchen can be synthesized into one sentence: To unite human health, planetary health and tasty food. There is not only one way to eat healthily: varying cultures, habits, personal preferences, and physical conditions require that each person find their own eating style, which encompasses pleasure for the senses as well as a respect and care for the planet. This kind of workshop helps children find their own way.

Slow food

Slow food has become an international movement to promote the combination of healthy nutrition with local food sources, and fair prices with an aesthetic culture

of eating. Its origin is found in southern European countries that have a traditional Mediterranean table culture.

The main message lies in its contrast to our rushed society: 'slow food' is not only against every kind of 'fast food', but also asks people to slow down, to enjoy their time and to look for quality in what they eat, drink, or use for clothes. To 'slow down', enjoy and make informed choices are all important elements toward sustainable development.

Slow Food in Schools includes a variety of emerging concepts like 'garden to table' projects with children that cultivate the senses and teach an ecological approach to food. Some national programmes try to awaken in students an enjoyment and knowledge of the health benefits of quality foods as well as the principles of land stewardship. Some of the schools have a school garden they tend for, others intensify the study and experience of agricultural issues in their subjects through farming, and others focus on the fair chain of food production and transportation from overseas to their hometowns. Slow Food in Schools is meant to help children develop an appreciation for real, wholesome food and an understanding of sustainable food practices.

Website: www.slowfood.com

ESD in France: a deliberate policy

France has been leading a committed and determined policy in the field of environmental protection and sustainable development for several years now.

Through the following actions, which involve either a national or an international dimension, France shows its priorities in the field of environmental protection and sustainable development, and supports the UNECE strategy in relation to the Decade of Education for Sustainable Development.

1. **A constitutional law: the chart for the protection of the environment**
- A new generation of rights related to environmental protection
- A compulsory sustainable development dimension in every public policy
    or decision made

Adopted in March 2005, the French constitution has been reviewed so as to introduce, following the introduction of human rights and social and economic rights, a third generation of rights that are related specifically to the protection of the environment.

2. **A national strategy for sustainable development**
- A specific plan of action
- Necessary harmonisation with the overall European strategy

The national strategy was institutionalised in June 2003. Its aim is to enhance and federate, and it contains a specific plan of action to integrate environmental and

sustainable development targets in the whole educational and formative process. This strategy is being re-actualised in order to harmonise with the overall European strategy that was signed June 2006.

3. A national committee for the DESD
- 45 members representing the different actors in French society
- A purpose: the definition of targets and learning materials for ESD
- A major action in June 2006: the international symposium in Paris «Progress and Proposals Regarding Education for Sustainable Development»

This national committee is closely associated with UNESCO and the other United Nations agencies. It helps develop and implement initiatives in regards to the three phases of the Decade: identification – proposals – evaluation, with an emphasis on evaluating those actions that are being taken and proposals for new actions.
Amongst the different actions implemented by the committee, the most important one was the international conference that gathered 825 participants from 45 countries in Paris in June 2006.

4. Introduction of ESD at schools
- Sustainable development integrated in every learning programme
- local strategies and action plans
- Annual evaluation

ESD was introduced in school programmes in 2004. Before ESD could be implemented in every school in France, 85 secondary schools were tested for one year. Since then, this process is being evaluated by local district committees on a yearly basis.

5. ESD in France: from strategy to implementation
- Listing of top-down and bottom-up initiatives contained in the framework of ESD
- Identification of obstacles and helpful solutions
- Help for local actors to identify implementation and development keys

Students Circle
Water Monitoring of the River Zagyva

Story

Although Zoltan dislikes cold water, he bravely takes a big step over to a slippery stone. "Grab my hand", Eva calls out anxiously, "I didn't plan to swim today." As he catches her cold and wet arm, she utters a loud sigh of relief and makes her way back to the river bank with a collection of perceptible invertebrates in her net. "Next time it's your turn to collect free-floating animals," she whispers sending him a look of gratitude, "And I will take care of the sediments on the river bank." "Come on," says Zoltan, feeling more comfortable now, "Let's see what results we can bring home." As they investigate their findings he shrugs his shoulders, "It is a pity we have no chemical water quality assessment kits." Eva smiles at him. "One day you will be one of the young researchers here," she says, "And you'll bring along all the devices you need."

Year after year pupils from the fourth to eighth grades of the Imre Sándor general school of Szentlőrinckáta wade into the waters of the Hungarian river Zagyva. They call themselves a "conservation circle". In fact, the objective of their work is to collect data on the environmental features, flora and fauna of the examined waters and any changes related to these. Based on this data, problems caused by the vulnerability of the waters that endanger the flora and fauna as well as the waters' ecological systems can be revealed. The testing points where rivers are affected by external factors that impact the inanimate environment, the flora and fauna, and where the data are then translated into measurable amounts are selected based on topographic and geodesic maps. During the survey the students examine the environmental characteristics of the water courses by observing and conducting measurements. They use simple devices to collect data on the general hydro-geological features of rivers, such as floating material content, temperature, chemical reaction of the water, and its colour and smell. One afternoon a week the students learn about the theoretical background and the methodology of scientific research. In addition, they undertake continuous fieldwork. The fieldwork has been ongoing because many students continue to be members of the circle for more than one year. Thus, in the second and third years they conduct more advanced and self-organised research.

In addition to the practical use of data, some experienced members of the circle from the upper grades have joined the National Network of Young Researchers and use the

collected data as the basis for the first steps in their scientific careers. They prepare reports and present their results, not just at the conference of the Network of Young Researchers, but also at scientific competitions and for school audiences, as well as local for communities and authorities.

The Herman Ottó Nature Conservation Circle was established in 1998 with the assistance of the Vadvirág Enviromental and Education Society (VEES) of Szentlőrinckáta. Since then it examines freshwater in regards to the biological, physical and chemical characteristics of water ecosystems and also of vertebrates as well. More information about water monitoring is available at http://www.bisel.hu/bisel_en.php. The circle consists of 10-14 year-old students from the Imre Sándor general school of Szentlőrinckáta and is facilitated by the school's biology teacher, Zsolt Miltner, with the occasional support of science experts.

From the point of view of an average Hungarian school, the work of the circle includes many innovative and unique features. The joint work of students from different age groups is one of these features. Although the circle is divided into two age groups for school lessons, they have many field programmes together, and the pupils from the different age groups are involved in the same research project.

Another innovative feature is that the fieldwork is integrated into the school's science curriculum. It is not just an extra-curricular activity or an opportunity reserved for gifted pupils. It is open to every pupil who is interested in fieldwork. Students' participation is rewarded by points, and these points can be turned into regular biology grades – always into a 5, which is the best grade in the Hungarian marking system. In this way the circle is an extra opportunity for students to reach a level of academically-recognised success in biology, and the circle forms an integrated part of their regular science education.

The third innovative element is peer learning. This feature is present in many ways in the circle. Basically, students work in pairs on their research projects, and in this way they can and should learn from each other. The formation of pairs is based on student choice, but the teacher does encourage that more experienced pupils choose a younger or less experienced partner. Thus the circle's more experienced students often help the newer ones and launch joint research projects with them. The other dimension of peer learning takes place when circle members give presentations and even entire lessons for their classmates during regular biology classes.

The fourth innovative feature of the circle is the shift in the teacher's role. The teacher starts the process by presenting the yearly recommendation of the VEES on the research topics and areas. Afterwards s/he familiarises students with the methods and facilitates the process. The methods used are scientifically valid and at the same time easy for students to use. To choose and develop or adapt suitable methods is one of

the main and most difficult of the teacher's tasks. With this work taking place in the background, the students carry out the actual scientific work in the circle themselves. They identify their testing points at the given river, taking the recommendations into account. They choose suitable measurement methods, collect data, and finally present the results of their work to various audiences, as described below.

The circle intends to draw the attention of the authorities and the population to the vulnerability of water ecosystems and the values of plant and animal communities that live there. Publications summarise data from 2003 to 2006 to discuss pollution levels at given points in the river, agricultural activities, anthropogenic factors, precipitation, etc. When a situation is observed that requires an intervention, the circle initiates, measures and involves the nature conservation authorities, especially the directorate of the Danube-Ipoly National Park and the municipalities of Szentlőrinckáta, Jászfényszaru, and Jászfelsőszentgyörgy. These organisational bodies and the Public Foundation for the Natural Values of Tapio Area, together with VEES, use the students' data to develop plans for water management protection and managing protected areas.

Since 2006 the circle has taken first steps in approaching other schools. The goal of this initiative is to present the students' results and to provide other schools in the vicinity with a lot of materials and with the methods used. Four schools have now started similar projects at their respective rivers on the basis of the circle's experience and with the help of the Herman Ottó Circle. The greatest ambition of the circle is to conduct comprehensive surveys on the whole River Zagyva in 2008, the tenth anniversary of the first programme, the data of which would then be compared and contrasted.

ESD and Science Education

ESD in Hungary is strongly linked to science education at each level of education, so also at the lower secondary level. Other main characteristics are: close connection with nature, frequent use of field studies, and emotional approaches in ESD. Dealing with the personal and social aspects of ESD is a fast developing, but still weak area of ESD in Hungary.

Guidelines from the government, teaching materials from NGOs and governmental departments are available. The next steps are to disseminate and implement these materials, and develop the culture of evaluating ESD.

One of the most successful teaching resources is the Hungarian version of the Green Pack of the Regional Environmental Centre for Eastern and Central Europe. Green Pack is a comprehensive multimedia tool. You can learn more about the Green Pack at: www.rec.org/REC/Programs/Greenpack/

Hungarian Approach to ESD

Hungary has a central government, but its educational system is decentralized. The central government determines the National Core Curriculum for Education, and the educational institutions have the right and duty to develop their own pedagogical programmes, in other words, they have professional autonomy. In the National Core Curriculum, ESD is linked to EE, which is defined as a cross-curricular theme for each level of compulsory education. The National Core Curriculum just defines broad aims for EE, such as contributing to developing the environmental awareness of students. Since 2005 Hungarian schools have had to develop their own EE programmes as part of their pedagogical programme. These EE programmes are the means with which the broad aims can be translated into specific pedagogical activities. The Ministry of Education has published guidelines in order to help schools develop their own EE programmes.

Two main support systems help Hungarian schools in their efforts to implement ESD: the Ecoschool Network and the Open-Air or Forest School System.
The Ecoschool Network is a network of schools that are committed to the whole-school approach in regards to the development of ESD work in schools. More information is available at: www.okoiskola.hu/english.
The Open-Air or Forest School System helps schools to organize one-week-long field programmes, which have as their main focus sustainability.
You can read more about open-air or forest schools at:
www.prof.iif.hu/iucn/ei/programa.htm

Be Educated for the Future
From Renewable Energy to Global Citizenship

Story

"Wow, it's boiling, it's boiling!" Maria shouts, while the other students move closer to see the small solar oven and the pot at the centre of the parabola that is built with an aluminium foil and an iron support.

"Could they, in Africa, cook spaghetti with this?" asks Giovanni, but Federico retorts, "Giovanni, don't you remember? They don't eat spaghetti in Africa, they have their own food... they will use the oven, but not for spaghetti."

"Federico, come here," Francesca calls out, "Help us finish our small solar merry-go-round!"

Maria, Francesca and Giovanni are all 12 years old, but Federico is older. He is a student from the Vocational Institute that is located in the same small town in the Umbria Region, Spoleto. Today the older students are helping the younger ones prepare their final classroom exhibition to conclude the project: "Be Educated for the Future". This year, the final exhibition will be entitled "Without Batteries," and the Scuola Media Dante Alighieri students will present all kinds of toys and games that work without batteries to their parents and friends, from elastic-driven cars to candle-pushed boats, from a drinking duck to a water clock!

Students know that renewable energies are not only useful for play. With the help of their senior friends, they have prepared several projects to 'solarise' certain corners of their town: a garden, a swimming pool, a newsstand, and a pub. These will be presented to their municipality. The most important project they have proposed over the last few years is a project that connects them with a school in Burkina Faso. There, solar energy is not only a possibility, but a real necessity: there are no power stations in the area, and the village school has no electricity. Students from the Scuola Media Alighieri understand now that no electricity not only means no electric light, but also no computers, no video, no movies, and no fast connections with the rest of the world.

The children investigated the needs of the Burkina Faso people during a kind of 'virtual trip'. Through email contacts, and stories told by people working in Burkina they discovered and learnt about the indigenous peoples living there. Now, however, the village

is no longer a virtual village in their minds, but a very real one. Letters by snail mail have started to travel from Spoleto to Burkina Faso, using the connections offered by their scientific partners, the researchers of the National Institute for New Technologies, Energy and Environment (ENEA), and by the volunteers of an NGO already working in the area, the GSI.

The plan for the Burkina Faso school is expanding to include not only a photovoltaic plant for their electricity supply, but also solar pumps for agriculture, ultraviolet light sterilizers for potable water, computers, internet and other items that a school in Africa needs nowadays in order to become 'autonomous'. And 'autonomous' in Burkino Faso not only means to be autonomous from the point of view of learning, as it does in Europe, but above all to be autonomous in the realm of basic needs, namely energy and food.

Project Rationale

The project, launched by ENEA, has been developed by several schools in Italy for different age groups. With the main common issue being 'renewable energy', the keywords are 'networking' and 'integration'.

Networking starts at the local level, whereby different schools collaborate on a project, and older students take care of the younger ones, becoming their 'teachers' for one day or for one week, and experiment with the advantages and possibilities of 'peer education'. However, networking not only includes schools: the partnership has also been extended to local scientists, local enterprises, and to NGOs involved in the development of the southern hemisphere. Networking has rapidly become a nation-wide effort – between schools involved in the project and the ENEA scientists, and internationally, by connecting schools in Italy with schools across the rest of the world, and mainly in Africa.

Discovering the strength and possibilities of networking helps children face the challenges of the world's present situation with confidence in and hope for a better future. They don't feel as alone, they feel they belong to a strong group, which not only involves their own teachers, but also recognised scientists and local politicians. This allows them to trust in the possibility of producing lasting, positive changes! Indeed, they experience themselves as planetary citizens because they realise they can actually do something for the planet and all that lives upon it.

The teachers have discovered many possibilities in this project: networking being one, and the other important one being integration. They have experienced an integration of their efforts with local efforts for Sustainable Development, and, being involved in local Agenda 21, they have also witnessed an integration taking place between various subjects and disciplines. Multidisciplinarity and interdisciplinarity in projects like this are not just 'terms' but real procedures: students need to work with biological concepts that are connected to geographical and anthropological ones. Questions and curiosities

arise during the development of a project, and this requires that teachers collaborate together, as well as with external experts, in order to come up with common answers.

One of the more important achievements is the involvement of local authorities and municipalities in third-world development projects. When a number of local schools become engaged with school partners in Africa or Latin America, then teachers, parents, and relatives become involved with their pupils, and the local authorities can only accept and support the initiatives proposed and underway. To be educated for the future not only means being educated for a personal, individual future, but also for the future of our planet as a whole.
Website: www.educarsialfuturo.it

What can a school do for global sustainable development?

One thing that many schools don't know is that regional and local governments often have a funding line for relationships and projects with the southern hemisphere. The Umbria Region in Italy is especially active in this regard; local capacities that are building development projects are encouraged, and schools and citizens are asked to co-finance the proposed projects. A small amount of locally raised money can make a big difference for a Latin American or an African village!

Another outcome of the 'Be Educated for the Future' school project aims to involve Umbrian schools, together with the regional government, other local institutions and ENEA, in the diffusion of know-how and new technologies aimed at a more sustainable development through the implementation of a cooperation project with NGOs for the benefit of Malian rural communities and their schools.

Umbrian students will be involved in the development of new teaching instruments and in building a partnership with Mali students by working on themes of very advanced scientific know-how. In addition, they will be also be engaged in a voluntary fundraising campaign (**"1 € per month per student"**), in order to support the purchase of the photovoltaic systems to be installed in Mali schools, thus contributing directly to the implementation of some of the main Millennium Development Goals.

ESD in Italy

Education for Sustainable Development is not yet a recognised element in Italian curricula. Nevertheless, many components of ESD are present in the regular school life and have a long tradition in Italian school culture. Environmental Education, Health Education, and Citizenship Education are included in the programme of compulsory schools for 6-14 year-old students, and in the last 10 years, these subjects have been strongly supported by official documents, which include the following:

- The Fiuggi Chart, a common agreement signed by the Ministry of Education and the Ministry of Environment;
- The INFEA programme on Information, Education and Training in Environmental

Education. This programme focuses on Environmental Education oriented toward a Sustainable Future and is funded both nationally and regionally ;
- An e-learning teachers´ training programme on Citizenship Education launched by the Ministry of Education;
- And a strong presence of NGOs, such as WWF, Legambiente, and Italia Nostra.

In the last two years, due to the UN Decade for Education for Sustainable Development, the Italian UNESCO Commission is coordinating a National Committee, including all public and private institutions interested in ESD, and launching a thematic week every year, where formal, non-formal and informal educational initiatives on SD are presented to the public.

A Bridge from the Past to the Future
Students Investigate at the Zuvintas Biosphere Reserve

Story

Previously, the whole class had been involved in a historic reconstruction of life as it used to be at the Zuvintas lake, using information from the museum of the Zuvintas Biosphere Reserve. Students enacted scenes of fishing, collecting eggs of the water birds, cutting reeds, etc. Now the students are divided into groups. Virginija, Audra and Gintaras are investigating the characteristics of the soil about 300 meters from the lake. Can we learn about the past by digging in the soil?

"How deep should we dig to find a knife or a hatchet made from flint or a chip of an ancient pot?" Audra wonders out loud.

"The thickness of the soil layer which was formed after the last ice age should be about 100-120 cm," Gintaras explains. "By going deep we are actually delving into the past."

"Look," says Audra, "There are layers of different colours, like in a cake. We can see humus on the top, then grit, and finally some dark soil."

"Even if we don't find anything, I now know how to learn about how the climate was in ancient times!" Virginija exclaims. "We'll measure the pH of the soil's lowest layer. If the pH shows that the soil tended to be acid, there must have been a wet climate. Alkaline soil lets us know that there were good conditions for agriculture. But we must be extremely careful not to mix different layers."

"This must have been a wet territory…The dark soil looks just like peat", says Audra after measurements have been completed.

"That's true!" whoops Gintaras. "We didn't see any evidence of agriculture at the museum either!"

The topic of a 'soil chronicle' represents a component of the theme "The Lake and Human Beings in Coexistence," which is being implemented in the Zuvintas Biosphere Reserve. The main questions for the investigation are:

- What was the meaning of nature (and the Zuvintas Lake in particular) for ancient people (and this according to the local legends, songs and fairy tales, and by exploring the exhibition at the museum)?
- How can the composition and properties of the soil determine people's activities? What instruments did the local people use in the Stone Age? What was the impact

of their life style and activities on the environment?

- How has the interrelationship between the local people and nature changed in the 20th century? What are the impacts of a modern lifestyle and its activities on the ecosystem? What conservation and environmental measures have been implemented thus far to prevent harmful impacts?
- How does the biosphere reserve currently function as a wildlife laboratory?
- What might people's needs be in the future? What impacts might their activities cause? What would be the best solution toward achieving an appropriate quality of life and finding a wise compromise between economic, social and environmental goals?
- What can be done individually and in the community as a whole to maintain the unique ecosystem?

While finding out about the past and the ways the ancient people lived, the students naturally compare the past with the present. They also begin to think toward the future and to consider what human beings can do to maintain the beauty and diversity of the reserve they are discovering. Some activities are carried out outdoors, in the biosphere reserve itself. Some preparatory work was done and specific issues were discussed at school before the field studies.

Project Rationale: Lessons in Life

In the process of implementing an educational reform in Lithuania, attention is being paid, more than ever before, to the development of key competences needed for conscious participation in societal and professional activities, for meeting the challenges of a rapidly changing world, and for life-long learning. Links between education and up-to-date processes in society must be established that investigate problems and solutions, look for the ways to apply the obtained knowledge and skills and consider various opinions and values.

Key words in defining targets both in ESD and in the ongoing educational reform in Lithuania include: a holistic approach, real-world issues, participatory and action-oriented learning, and self-evaluation and reflection.

Using community resources to investigate real-life issues seems to be one of the most efficient ways to reorient education towards sustainable development. The field studies programme in the Zuvintas Biosphere Reserve (Zuvintas Programme) is one of the examples that is successfully underway since 2006.

Several objectives were formulated in developing the programme:

- Defining learning targets as a combination of knowledge, skills, attitudes and values to develop key competences;
- Developing critical and systemic thinking based on real-life situations and interrelated environmental, economic and social issues;

- Looking for and making use of participatory and creative methods;
- Making clear links between field studies and school curricula in order to discover the provisions of sustainable development in the content of various subjects.

The Zuvintas Programme is dedicated to students in grades 7 and 8 (13-15 years old). The programme was developed in order to meet the requirements of the National Curriculum and Education Standards mainly in the social sciences (history, geography, ethics) and the sciences (biology, chemistry, physics). The students' educational inquiry according to the Zuvintas Programme thus represents a natural continuation of their classroom learning.

There are two packages that have been developed thus far for each topic: teachers´ guidelines that include ESD learning targets, objectives and links with the subject curriculum and education standards, as well as some specific information and worksheets for the students: http://www.wetlands.lt/ataskaitos.php.

Lessons Learnt

The Zuvintas Programme was tested in the autumn of 2006 by inviting local teachers and their classes. The students were very excited about taking part in practical activities in a very special protected area, working in peer groups, and at the same time having the opportunity to pose questions not only to their teachers but also of various specialists of the biosphere reserve. When learning is organized in such a multidisciplinary, active and interactive way there are more opportunities for different interests, learning styles, etc.

The programme was presented in teacher in-service training seminars in two district centres, Alytus and Marijampole, which are connected to the Zuvintas Biosphere Reserve. The teachers expressed their interest to use the programme mainly for the three following reasons:
- It is an opportunity for attractive and meaningful learning in a real-life situation;
- Activities are linked to the National Curriculum and Educational Standards;
- Materials are developed by experts and are ready to use. In addition, the direct support of professionals is available.

At the beginning there were some doubts concerning some general questions, such as discussion on possible or probable future scenarios. However, it became clear that teenagers are quite capable of using their knowledge in various subjects, and that they are creative and can find strong arguments to support their ideas. It is worth noting

that in such new circumstances students and teachers develop a sense of partnership and cooperation, which is usually not so easy to establish in the regular classroom.

The Zuvintas Biosphere Reserve

The programme of field studies for schools (Zuvintas Programme) represents a component of the educational activities taking place in the Zuvintas Biosphere Reserve.
A biosphere reserve is a unique concept, which includes protected areas and surrounding lands that are managed to combine both conservation and the sustainable use of natural resources. It could be considered as a "working example" of sustainable development that expresses the social, cultural, spiritual and economic needs of a society. At the same time, a biosphere reserve can be used for educational and training purposes.

The Zuvintas Biosphere Reserve is the first landbase of this type in Lithuania and it was established in 2002. It covers Zuvintas Lake, which itself is a reserve for water birds and was established in 1937, as well as a variety of landscapes: wetlands, lakes with coastal marshes and wet forest. There are also significant places of cultural heritage, such as the hill-fort Varnupiai with the XIII century settlement, ancient burial-grounds of medieval villages, and several churches from the XVII century.

The status of the biosphere reserve provides both a challenge and an opportunity for the administration of protected areas, for those municipalities, whose landbase was partly covered by the biosphere reserve, for the tourism industry, farmers, foresters, and ultimately society at large. Integration into the European Union has also been an important factor in coming up with the new management principles of Natura 2000. This all requires capacity building, in particular in those local communities that manage biological diversity in ecosystems based both on traditional ecological knowledge as well as on more recently identified sustainable ways that societies interact with their rural environments.

ESD in Lithuania

The development of education and science represents an integral part of the National Strategy for Sustainable Development (2003) that aims "to educate independent, active and responsible members of society, develop the intellectual potential of society so that knowledge and science can become a principal force ensuring sustainable implementation of economic, social and environmental objectives." Relevant changes in the educational system are legitimised by the Law on Education (2003) and the State Education Strategy Provisions for the Period of 2003-2012 (2003).

The Law on Education of the Republic of Lithuania defines the general foundations of the structure, activities and management of formal education in the Republic

of Lithuania. One of the main goals formulated for the educational system is "the capacity building of society to ensure sustainable economic, social and environmental development".

Provisions of the National Education Strategy 2003–2012 call for the improvement of educational quality, which should target the development of key competences. The contents of education should be "based not so much on the transfer of knowledge, as on its analysis, critical assessment and practical application; such competencies shall relate the contents of education to real life, actual problems and their solutions".

New learning targets require changes in methodology, including more interactive, student-oriented and collaborative approaches, as well as appropriate conditions for social learning and practical activities in the community.

A teacher is defined as a guide and mediator to support students by providing access to a wide range of information sources and ideas, as well as to help them develop skills in how to use this acquired information for making decisions.

Operational frameworks for schools, such as the National Curriculum and Educational Standards, which include goals, objectives and achievements, and the Concept for the Assessment of Achievements, are adjusted to the above-mentioned policy documents.

We Won... A Rain Gauge!
Rainfall Measurement as a Surprising Catalyst for Strong Student Engagement

Story

Extreme Weather Week:

An excited atmosphere was palpable in both eight-grade classes at the Drangedal lower secondary school in Norway. When the students heard who had "won" a rain gauge you could have thought they had won something really big or special! And when the pupils were asked whether they wanted to take a rain gauge home and be responsible for measuring rainfall at "exactly 8 AM every morning" for a week, each and every student responded with a broad smile and a "yes!". The plastic gauges were carefully packed in their backpacks, carried home and mounted outside, near their respective houses. Only twelve students received the rain gauges to take the measurements at twelve different stations, but all 50 students were involved in the "Extreme Weather Week" campaign through reading about the topic, and reflecting on and discussing the questions that arose, such as:

- Why and how does temperature vary at different places on the surface of the earth?
- Traditional weather signs – what can clouds, wind direction, animal behaviour and other signals tell us about the weather?
- How does precipitation form, and what different kinds of precipitation exist?
- How is weather predicted, and how does the weather forecast work?
- How does the weather affect us?
- How might our activities affect the climate in the long term?

The students were asked to listen to the weather forecast every day before leaving for school. Some of them had to get up early to hear the weather report before catching the school bus. Some students were a little sceptical about this part of the project, but ended up appreciating it. The twelve measurement stations were spread out to cover as much area as possible of the Drangedal municipality (an area of 1062 km²). After the week was over the rain gauges were collected . One student, however, didn't bring the rain gauge he had used back to school. "It's like this, you see... I'm still measuring the rainfall," he said. "That's fine," one of the teachers responded with a chuckle, so there he is, still measuring rainfall...

Project Rationale

The Drangedal lower secondary school in Norway, participated in "Rain Check" in the autumn of 2006. This activity was part of the national campaign "Extreme Weather Week", which was created through cooperation between the Directorate for Education and Training, the Norwegian Institute for Air Research (NILU) and the "Research Days" secretariat of the Norwegian Research Council. These agencies are also involved in an educational website: www.miljolare.no. The website was pivotal throughout the entire campaign, serving as a central place to find information and enter results.

All of the areas in which the stations were located, as well as the measurement points themselves, were registered on the website for the campaign, and the sites were entered onto a digital map. The teacher did this while the students followed the registration of rain measurements in the database on a large screen and were able to get an overview of the results that could be produced from the database. The students also took a look at information about the campaign and other materials on the website. In addition, they were given a handout with the information necessary to be able to take the measurements, as well as information on who was responsible for the campaign and its purpose. The topic was current and meaningful. It was easy to integrate into the ongoing work at school, and the campaign aligned perfectly with the learning goals outlined in the curriculum plan. One of the curriculum goals for social science is that:
"Students will be able to pass on information about nature, emphasizing internal and external forces on earth, movement of air masses, the hydrological cycle, weather, climate and vegetation. In addition, they will be able to discuss the interconnection of nature and society.

The campaign fit in well with the ongoing school reform "Kunnskapsløftet," and involved the main school subjects by touching on both the social sciences as well as the natural sciences. In natural science the most important link to the curriculum was to relate the Rain Check to the national science initiative called "The Budding Researcher". Through this the students contributed to a national research project along with many other schools, and this would prove to be critical for their motivation for and engagement in climate issues.

Experiences – What We Learnt
What surprised us the most about the campaign was the students' level of engagement and seriousness. It is not always easy to awaken the interest of students from that age group and to get them involved. With Extreme Weather Week and Rain Check, however, this proved to be no problem at all. The small activity of measuring rainfall became a catalyst for their interest and engagement. Getting to take a rain gauge home, having responsibility for setting it up in the garden and accurately reading it

every day at 8 AM, and then bringing the data to school to enter it into the database on the national website really did something to the students. They were part of real research, which would be useful far beyond the borders of Drangedal. They were part of a larger, shared task, in which their contribution made an actual difference. During the whole campaign the students felt that they mastered their task. That meant a lot!

The students entered their results at school themselves. They would sit down at the computers and do the job with a satisfied look on their faces. They were also very conscientious about seeing to it that the data were entered properly, something that isn't always the norm with other schoolwork. They even measured rainfall on Sunday during Extreme Weather Week.

Interest and engagement is of great value in itself. It was rewarding to see the students' positive engagement directed toward the topic at hand. Taking the practical activity of measuring rainfall as a starting point, it was a simple matter to extend the learning to other related topics. The students participated in discussions and had many questions. They also discussed climate at the regional level, and brought to school information about traditional weather signs and other local knowledge about weather and climate. In this way other members of the family also got involved. The students made Extreme Weather Week their own – and ownership is important!

The combination of a practical activity with theory, discussions and reflection often facilitates a good learning process. Extreme Weather Week encompassed all of these elements. By allowing the discussion to touch on topics the students were involved and interested in, it was certainly possible to awaken their capacity for critical thinking. By looking at interconnections and two-way interactions between human activity and the climate, these young adults started having their own thoughts and ideas. Considering the total lack of snow and cold we have experienced in Norway so far over the last few years, Extreme Weather Week couldn't have been be more relevant.

Network for Environmental Education – A Shared Resource for Schools, Teachers, Students, the Public and Researchers

Norwegian schools are very active in ESD. Although the activities don't always carry an ESD label, they are nevertheless consistent with the principles outlined in the UN Decade for Education for Sustainable Development. Some of the activities are generated independently by schools through their own planning activities and implementation of curriculum guidelines. Other projects are supported by the national education authorities. Still others are initiated and coordinated by other actors, including various ministries, international organizations and non-governmental organizations.

Evaluation and research- and development projects have shown that as long as schools receive support and guidance, they are very capable of creating high-quality projects in the field of ESD. However, they tend to revert to their previous practices after the project period is over. The challenge is to establish structures and resources that can

provide schools with a continuous support that matches their development needs. This is one of the reasons that the internet resource www.miljolare.no was established in 1997 by the Directorate for Education and Training, and later expanded.

Using this website, students can find information about themes related to sustainable development and enter the results of their work in national databases. Through the network, students and schools can make a meaningful contribution to research and present their work to the public. They can exchange ideas and cooperate with other schools and municipalities. Up-to-date environmental information is provided through links to the Ministry of Environment's website on the state of the environment. Cooperating partners include the Ministry of Environment, Ministry of Children and Equality, Ministry of Agriculture and Food, Norwegian Consumer Council, the Ideas Bank, Green Lifestyle, and the biological diversity consortium Sabima.

Norwegian National Policy for ESD at the Lower Secondary Level

A strong policy framework exists in Norway that calls for interdisciplinary, values- and action-oriented ESD for all children. Given this official framework of legitimacy for ESD, the central policy question then becomes, "How to mainstream and implement this kind of education for all children in all schools?"

From those schools and teachers that have been involved with ESD at the forefront for more than 20 years – the "lighthouse schools" – there is ample evidence that excellent projects can be constructed that embody the ESD principles. A much greater challenge is to develop and evaluate various kinds of instruments and policies that will effectively support and enable all schools and teachers to build their competence, and to actually provide this kind of learning opportunity to all children. The Norwegian approach is to use **the internet in cooperation with research institutions** in order to provide materials and opportunities in ESD that will stimulate and support each school's own competence building, project work and development.

The Norwegian national curriculum guidelines for lower secondary schools contain a separate chapter on the environmentally-aware human being. This chapter includes principles for Education for Sustainable Development that are to be implemented in all Norwegian lower secondary schools. In addition, the subject curricula specify topics and methods for integrating an interdisciplinary sustainable development perspective in various school subjects. The curriculum embodies the principles of sustainable development as set forth by Norway's Strategy for Sustainable Development, launched in the spring of 2004. The curriculum also actualizes the concepts of ESD as defined by the UN Decade for Education for Sustainable Development, the European strategy for ESD by the UNECE, and the Baltic-Nordic 21E education strategy. Principles such as student participation in forming their own learning processes, an inquiry approach, global perspectives and education for citizenry have been well integrated into the Norwegian school curricula and teacher training.

To support the curriculum guidelines and subject curricula, the Norwegian education authorities published a policy document in the autumn of 2006 entitled "Education for Sustainable Development." This 20-page document clarifies the thematic contents of education for sustainable development, describes the current situation and challenges present in the field, and formulates a set of four prioritized areas with corresponding activities and responsibilities for implementation. These four areas are: 1) development of teaching plans and teaching resources, 2) network building and communication, 3) evaluation and reporting, and 4) international cooperation in ESD. One key activity in this plan for ESD in Norway is to offer schools the opportunity to participate in activities and campaigns within an internet-based network.

Plan a Sustainable Holiday
WebQuest in ESD

WebQuests are an attractive way of integrating the use of the computer, autonomous learning and the use of the Internet. In lower secondary education it is a form of putting challenging and relevant questions to students in order to build up expertise with the world wide web, to improve their searching strategies, to acquire and process information, and to present results.
In the case of ESD, WebQuest possibilities stimulate collaborative learning in relation to the curriculum as a whole. The websites that the students need in order to work on their WebQuest have been selected beforehand by the WebQuest maker. This prevents students from doing a lot of random searches and getting lost on the Internet.

As an example, the webquest **"Plan a Sustainable Holiday"** offers helpful suggestions and approaches. It also makes use of education derived from the natural environment. Emphasis lies on becoming aware of the consequences of travelling to far-away countries with the help of the 'holiday footprint': www.vakantievoetafdruk.nl. By making relevant calculations, students can gain insight into the sort of holiday that has an unfavourable impact on the environment. The point here is that students learn to balance the ecological and the socio-cultural dimensions with each other. They receive information on the honest-earth part of the equation.

The process the students go through is the most important element, the fact that they discover the pros and the cons of sustainable development. The five values of receiving, responding, valuing, organisation, and characterisation serve as a yardstick for students to measure their own progress and to discover which actions they can undertake in order to get one step further. This can promote a change in their lifestyle and lead them towards a wise and responsible attitude with respect to their environment. Offering a webquest on a certain topic will not be sufficient, however. Rather, the topics should have a structural place in their education, so that each student can reflect on these issues on a regular basis.

The Story of a Picnic in Yesteryear and Nowadays
The Earth Charter as a Tool for ESD

Story

The long-awaited day – January 31, 2007 – finally arrived. The students were euphoric! Some students, dressed like people would have been dressed a few decades ago in a similar situation, carried beautiful wicker baskets full of delicious bread, meat, garlic sausages, smoked ham, desserts, and fruit, all wrapped in napkins and cotton table-cloths. Other students, those representing modern society, carried plastic bags with the "celebrated" crisps and other fast food, as well as bottled and canned drinks and paper serviettes. Each group of students performed its role very naturally. The previously established itinerary along the mountain range began on foot. Upon arriving at their destination, the students interviewed the local inhabitants who lived surrounded by nature, took photographs, filmed...and finally it was time for the Algarvian picnic!

The rubbish produced in each scenario was piled up. Comparing the two piles, the students were amazed at the difference in terms of quality and quantity. Years ago a lot less rubbish was produced and, for the main part, it was biodegradable!
They returned, already missing the mountains, after a highly enriching experience. It had been a day during which many new friendships had been formed with the local population of Cerro da Ursa, Lajes and Capitães, and the students had bid their farewells with promises to come back to show the photographs and to continue the newly-established relationships.
Back at school, the students worked on the results in regards to the type of rubbish produced, its effect on biotic communities, ecosystems and the world. They reflected, for example, on the fact that it takes three months for paper to degrade; between 40 and 400 years for plastic; 50 to 500 years for metal; and more than 4000 years for glass. With this activity, it became easy to understand the need to protect and replace the integrity of the earth's ecological systems and to commit to adopting more sustainable consumer patterns.

Project Rationale

The Primary School EB 2,3 Poeta Bernardo Passos is one of the schools in the Algarve, which is developing the „Project Earth Charter. Instrument of Sustainability (PCTIS)"

in response to the challenge launched by the Associação Portuguesa de Educação Ambiental (ASPEA – Portuguese Association of Environmental Education). The ASPEA drew up this project as a contribution towards the implementation of the United Nations Decade of Education for Sustainable Development.

For their project, the students and teachers of class 8 D selected a theme, which both the school and the community are concerned about: rubbish. The question they focused on was: Is rubbish a nuisance?

The project's aims were to:
* Gather information on habits in regards to rubbish and recycling;
* Make people aware of the need to produce less waste, to separate and to recycle;
* Acquire and evolve the spirit of mutual cooperation and sharing of knowledge, taking into account education for sustainable development;
* And raise the value of cultural rural identity and interact with the local population.

In touching on the realities of both yesteryear and nowadays through a picnic, the students illustrated and experienced the theme of recycling in the Earth Charter, relating to and emphasizing on the following Principle: *Ecological integrity widened the awareness of the need to adopt patterns of production, consumption and reproduction so that the regenerative capacities of the Earth, human rights and community well-being are protected.*

The planning of the picnic involved a set of activities, beginning with a prior visit of the class teacher, the mathematics teacher, the art teacher and the coordinator of the PCTIS to the Algarve mountain range to contact the isolated population of Vila de São Brás de Alportel, some of whom live in communities made up of only two families. At first, the local population seemed to be rather suspicious. However, after the introductions were made, they were willing to welcome the students and to describe their ways of life, as well as their memories of the past.

Due to the theme of recycling, and according to the programme contents of the subject of Natural Science, an inquiry was devised in collaboration with teachers of the Portuguese Language, Geography and Art. The objective was to study the habits of the "highlanders" in regards to rubbish and recycling. A real old-fashioned Algarvian picnic was then carefully thought out and prepared, including costumes, gestures, objects, gastronomy etc.

The primary school EB 2,3 Poeta Bernardo Passos functions as a place of information development and dissemination in regards to Education for Sustainable Development. It also serves as an agent of intervention and an impetus to society, via the pupils and their families, and contributes towards the spread and implementation of the Earth Charter and the Strategy for Education for Sustainable Development of the EEC/UNO.

Projecto Carta da Terra. Instrumento de Sustentabilidade (PCTIS)

http://www.aspea.org/
http://www.earthcharter.org/files/charter/charter_po.pdf

The message of the picnic project is now available in a variety of media. Among them is a DVD that documents the picnic. This DVD was publicly presented and distributed in the community with the help of PCTIS partners. In addition, the Blog Earth Charter, Instrument of Sustainability (http://is-ct.blogspot.com) was set up by the coordinators of the Agrupamento de Escolas de Salir (School Group of Salir). Here it is possible to view summaries and photographs of the activities realized throughout the project. The blog provides examples of pedagogical activities with the students, and meetings of the Regional, National and Local Commissions.

Developed by the various schools of PCTIS, the activities of direct collaboration bet-ween the different levels of learning (from 7 to 15 years of age) motivate educational experiences that involve various subjects and pedagogical practices and are carried out in the context of non-subject curricular areas (Área de Projecto, Formação Cívica).

The project is based on the Earth Charter principles and on the United Nations Decade for Education for Sustainable Development (UNDESD) philosophy. As an International Implementation Project, it is also congruent with:

- The aims of the EU Sustainable Development Education Strategy;
- The aims of the document "UNDESD (2005-2014) – Portuguese Contributions toward the Implementation of ESD";
- And the principles of the Cooperation Protocol to Promote Environmental Educa-tion, signed by the Ministry of Environment and the Ministry of Education (2005), with the aim to strengthen their synergies in the field of Environmental Education for Sustainability.

National Curriculum for Basic Education

The activities undertaken in the context of the CTIS project contribute to the develop-ment of the key competences set out in the Portuguese *"National Curriculum for Basic Education"* (grades 1-9). This curriculum also comprises cross-curricular approaches,

namely in the context of *Human Rights Education, Environmental Education; Health and Wellness Education, Nutrition Education, Sex Education, Education and Prevention of Personal Risks (such as road accidents or drug abuse prevention)* or any others held as relevant for personal development, such as *Education for Sustainable Development, Peace Education or Gender Education.*

Websites of organisations that support ESD in Portugal:

Direcção Geral de Inovação e de Desenvolvimento Curricular:

http://www.dgidc.min-edu.pt/

Instituto do Ambiente:

http://www.iambiente.pt

Comissão Nacional da UNESCO. Portugal:

http://www.unesco.pt/cgi-bin/home.php

International Political Background

ESD takes into account the Earth Summit in Rio de Janeiro, 1992, where politicians from nearly all the countries of the world agreed that there is a real need to consciously and carefully consider economic wellfare, social fairness and care of the environment. In view of this joint global project, the United Nations conference coined the term 'Sustainable Development'. Because the project had still not reached a critical mass ten years later, the United Nations held a second conference in Johannesburg in 2002. Between both conferences an international consensus emerged that achieving Sustainable Development is essentially a continuous process of learning. In 2005 the United Nations put in place the Decade of Education for Sustainable Development (DESD), that lasts from 2005 to 2014. UNESCO was tasked with leading the Decade and developing an International Implementation Scheme for it.

The Decade of Education for Sustainable Development

As UNESCO outlines, DESD is a far-reaching and complex undertaking, potentially touching on every aspect of life. Its overall goal is to integrate the values inherent in sustainable development into all aspects of learning in order to encourage changes in behaviour that will allow for a more sustainable and just society for all. It has five main objectives:

1. To give an enhanced profile to the central role of education and learning in the common pursuit of sustainable development;
2. To facilitate links and networking, exchange and interaction among stakeholders in ESD;
3. To provide a space and opportunity for refining and promoting the vision of, and transition to sustainable development, and this through all forms of learning and public awareness;
4. To foster an increased quality of teaching and learning in Education for Sustainable Development;
5. And to develop strategies at every level to strengthen capacity in ESD.

DESD is connected with other international initiatives that are already in place, in particular, the Millennium Development Goals (MDGs) process, the Education for All by 2015 (EFA) movement, and the United Nations Literacy Decade 2003-2012 (UNLD). All of these global initiatives aim to achieve an improvement in the quality of life, but DESD is more concerned than the other three initiatives about the content and purpose of education to adopt practices and approaches that specifically foster the values of sustainable development.

The UNECE Strategy

In Europe the Environment Ministries of the United Nations Economic Commission for Europe (UNECE) agreed on a regional strategy for Education for Sustainable Development that considers education as a fundamental tool for environmental protection and sustainable development. The UNECE Strategy for Education for Sustainable Development was adopted by the high-level meeting of the Environment and Education Ministries in Vilnius, March 17-18, 2005.

The strategy intends to be a foundation for the regional implementation of the DESD. It consists of a flexible framework addressed to the governments of UNECE member States, and it aims at encouraging and advising them to develop and incorporate ESD into their formal educational systems as well as in their non-formal and informal education. The strategy calls for the involvement of educators and other stakeholders, and for a dialogue with all relevant international actors, including NGOs and other major groups contributing to the DESD.

The UNECE vision concerns: "A region that embraces common values of solidarity, equality and mutual respect between people, countries and generations" whereby "Education for Sustainable Development can provide critical reflection and greater awareness and empowerment so that new visions and concepts can be explored and new methods and new tools developed."

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