

# Co-operative Learning and Education for Sustainable Development

**Daniela Pavan and Fabrizio Santini**

This article presents an approach used by a training and development organisation in Italy, Scintille. It and its support for sustainable development through co-operative learning. It explores sustainable development, Education for Sustainable Development and interpretations of the meaning of co-operative learning. It recognises the strong synergies between Education for Sustainable Development and co-operative learning and suggests that co-operative learning can be an ideal vehicle for achieving the goals of Education for Sustainable Development. It is presented as a case study as an illustration of an Italian experience of Education for Sustainable Development sustained by co-operative approaches, which shows the evolution from micro (the classroom) to macro (the wider social context).

Scintille.it is a training and development organisation in Italy formed as a social enterprise. Made up of teachers, managers, trainers, therapists and researchers we are driven by a strong set of values and through our various activities we aim to enable both personal and collective growth and well-being, whilst promoting sustainable communities and society.

Our training uses experiential learning activities and employs some of the principles of co-operative learning (CL) strategies. We start with a real problem situation, for example, bullying, environmental degradation, school dropout, and with our learners turn it into an opportunity for growth to bring about positive change within the whole context.

<b>Social</b>	<b>Cultural</b>
<ul style="list-style-type: none"> <li>• Health and well being promotion.</li> <li>• Justice and social equality.</li> <li>• Respect for the needs of future generations.</li> <li>• Democratisation.</li> <li>• Participation of individuals and communities in the governance.</li> <li>• Rights to live on the fruit of their own labour.</li> </ul>	<ul style="list-style-type: none"> <li>• Sustainable lifestyle.</li> <li>• Holistic experience of nature.</li> <li>• Aesthetic aspects of development.</li> <li>• Cultural diversity as biodiversity.</li> <li>• Traditional and historical knowledge.</li> <li>• Consumer awareness.</li> <li>• Global responsibility.</li> <li>• Cosmopolitan Culture.</li> </ul>
<b>Economic</b>	<b>Environmental</b>
<ul style="list-style-type: none"> <li>• Green and White jobs.</li> <li>• Environmental management systems.</li> <li>• Principles of corporate social responsibility.</li> <li>• Ecological innovative technologies and eco-design.</li> <li>• Regional networks and local marketing.</li> <li>• Fair trade.</li> </ul>	<ul style="list-style-type: none"> <li>• Harmonisation with ecological cycles.</li> <li>• Careful management of resources.</li> <li>• Protection of biodiversity.</li> <li>• Reducing the impact of individuals and communities.</li> <li>• Use of renewable energy.</li> <li>• Application of the principle of precaution.</li> </ul>

Figure 1 – The Four Dimensions of Sustainability (Mastrandrea and Santini, 2012: 73)

We are passionate about sustainable development and are committed to including key sustainable development issues in our teaching, such as reduction of poverty and social exclusion, sustainable consumption and biodiversity. Sustainable Development was defined by the Brundtland Commission (World Commission on Environment and Development, 1987) as “the development that considers the needs of the present without compromising the ability of future generations to meet their own needs” and we believe that sustainability is not limited to the integrity of nature but also involves economic and socio-cultural issues (Bader, 2008). From our perspective sustainable development can be understood according to the four dimensions seen in Figure 1.

Sustainable development, according to this view, turns out to be a process aimed at achieving environmental, economic, socio-cultural and institutional improvements, both locally and globally. This process binds the protection and enhancement of natural resources with economic, social and institutional issues in a relationship of interdependence in order to meet the needs of current generations without compromising the ability of future generations to meet their own needs.

## Education for Sustainable Development and Links with Co-operative Learning

What role does education have in the promotion of sustainable development?

UNESCO has described an approach, Education for Sustainable Development (ESD) that allows

every human being to acquire the knowledge, skills, attitudes and values necessary to shape a sustainable future" (UNESCO, 2013).

ESD is concerned with all levels and types of learning to:

provide quality education and foster sustainable human development – learning to know, learning to be, learning to live together, learning to do and learning to transform oneself and society (UNESCO, 2012).

To be effective, the approach requires participatory teaching and learning methods to motivate and empower learners to change their behaviour and take action for sustainable development. It was this perspective that led us to promote the connection between school and sustainable development through co-operative learning.

From our observations, co-operative learning has witnessed an evolution in recent years from being a teaching and learning methodology to becoming a wider and richer educational movement which respects cultural and educational diversity and aims for greater social justice and opportunity as well as a vision for life. This had led the authors to reflect on the teaching profession as an expression of civic participation, which aims to build a democratic, equitable and sustainable future for the planet and its inhabitants. As we see, it embraces the values and practice of positive interdependence, distributed and shared leadership and individual accountability, combined with group accountability, teaching of social skills, creation of positive interdependence and reflective practice. From this position we believe it can become an ideal vehicle for reaching the social and cultural goals of ESD. In our opinion, this link between CL and ESD is *relevant, appropriate and effective*:

It is *relevant* because it can help to define a civic role of the teacher and the school, in which the profession may be seen as an expression of civic participation in the construction of a democratic, equitable and sustainable future for the planet and its inhabitants.

It is *appropriate* because, if another purpose of ESD (UNECE, 2005; United Nations, 1992) is that individuals reflect on the interdependence between the contexts of belonging (environment, labour, economy, relationships) and act towards a common vision, then CL seems to be an ideal partner because the theory and practice of positive interdependence are fundamental features of a co-operative learning process.

The CL-ESD connection is, most of all, effective because ESD lays the path for the outcomes of the educational processes to be authentic performances of the co-operative work, connected to real life. This requires that people learn to critically evaluate situations, are creative, solve problems, make decisions, think about the acquisition of knowledge, consider the limits of personal and collective responsibility and use social skills and competences in mediating potential conflicts. All this is reflected in the practice and theory of CL.

We believe that a co-operative approach is important in embedding sustainability into a school because it is able to respond to some common needs in both these areas (United

Nations, 1992; Pavan and Ellerani, 2003; EU Commission, 2001; EU Commission, 2005; EU Commission 2010; European Parliament and Council, 2006).

Examples of this are:

1. Welcoming the increasing diversity of pupils (at school) and people (in society) by employing teaching methods which encourage social competences that promote the acceptance and enhancement of any diversity;
2. Learning about democracy from real experience. Dewey (1954: 263) believed that "if children have to learn to live in a democracy, they must experience the process of democracy in classroom life - a process which includes substantive opportunities to make meaningful choices and build productive relationships based on genuine respect and empathy".
3. Creating within educational communities a shared process and a common vision, promoting a sense of belonging and conditions that guarantee a "we" in dealing with educational, social or motivational problems.
4. Providing students with an increasing number of skills and competences useful to the processes of integration and social change, autonomy and identity as part of diverse groups; competences that enable action to protect nature and environment and develop social and individual wellbeing.

## **Co-operation in Action, from Micro to Macro: a Case Study**

The following case study involving Scitille.it illustrates an example of how the practice of ESD, sustained by the co-operative approach, effected change from the micro (the classroom) to the macro (society as a whole) in Italy.

### **Grosseto High School District as a sustainable system**

The project 'System Sustainability' at the High School District in the city of Grosseto has the goal of developing competences for the dissemination and implementation of a culture of sustainability. Of particular relevance to the success of this educational intervention was that it started from the real experiences of everyday gestures and behaviours.

The significance of this project lies in the development of a system which enabled collaboration between schools, public administration and economic institutions, starting with the central and active role of the 4,000 students in the school district.

The work is centred on environmental activities and has experimented with virtuous and self-managed actions. The use of a co-operative approach has secured the active participation and motivation of all those involved. It was the intention that the project would evolve organically, maturing over time through sharing and practice.

In advance of the project, the teachers received training in the theory and practice of co-operative learning from Scintille.it. The role of the teachers required them to:

- Make decisions before the lesson.
- Specify the objectives of the lesson.
- Explain to students the tasks to be performed and how the interdependence between them through their actions would be important in the success of the tasks.
- Monitor students' learning and intervene within the groups to provide assistance with the tasks or to improve interpersonal and group skills.
- Assess student learning and help in the review process on how the group worked.

Groups of students worked together over eight weeks for four hours a week. The shared learning goals were clear: students were expected to make sure that each of the members of the group successfully completed the tasks assigned. The tasks involved the maintenance of gardens and sport facilities (including the installation of recycled plastic benches), differentiated waste collection in the classrooms and creative reuse of the common areas. The activities included the production and sharing of technical reports, drawings, questionnaires and publicity material among students of various upper schools of the District and the Technical Office of the Province. A digital slide show was produced to be used in general meetings at the seven High School Institutes to share the results of the work done by each class.

The structures of Kagan (2000) helped us to actualise the co-operative skills, useful in meeting the goals of ESD. Numbered Heads was used to compare pupils' opinions and findings in various stages of the design work. This allowed them to "Learn to think independently and consider limits and possibilities of personal and collective accountability", whilst Group Interview facilitated the students in learning "how to implement social and personal choices and how to take responsibility for those choices" (Kagan, 2000:139-140).

The nature of the project embraced a wide range of school disciplines, such as sociology, economics, appraisal, building construction, topography, and the management and security of the school grounds.

Johnson, Johnson and Holubec (1994) highlighted the aspects of positive interdependence in their account of co-operative learning. This project has explicitly embraced this and interdependence has been experienced on several levels which we believe has facilitated the recognition and understanding of the broader concept of interdependence relevant in this era of globalisation.

## Conclusions

We believe that helping people develop more co-operative and sustainable communities can be very significant in confronting the challenges humanity are facing, such as the mitigation and adaptation to climate change, the use of more sustainable models of production and consumption, the striving for improvements in quality of lifestyles and the combating against social exclusion and poverty. All these issues can be addressed in everyday life with students and student groups with a focus on ESD through the use of CL, transforming the problems into small, interconnected steps and 'climbing the mountain' of sustainability to reach a more equitable and circular economy.

Using the language of the web, we could speak today of "Co-operative Learning 3.0", a three-dimensional vision of theory, practice and ethics that is carried out based on a coherent set of values and with a unity of vision that connects people, educational contexts and society (Wilkins, 2011: 5-14). In practising CL in support of ESD, we hope to bring about the changes necessary to confront the global challenge of environmental degradation.

## The Authors

Daniela Pavan is a founder of Scintille.it and a teacher and educational psychologist working in schools, juvenile prisons and with adults. She is also a trainer, supervisor and psychotherapist. In 1996, she was the co-founder of the Institute of Educational Research, Cooperative Learning Group, the first Italian group working with Co-operative Learning. She has written four books and a number of articles on the applications of CL. Fabrizio Santini is a member of the Scintille.it team and the senior advisor at the Italian Foundation for Sustainable Development on issues of ESD. A graduate in educational psychology, he has a deep interest in co-operative learning and metacognition. He works as an environmental educator, nature guide and project manager for teaching technologies at the Laboratory for Environmental Education in Tuscany and is a

Team Manager and Project Manager for international projects at the National Mining Park of the Metalliferous Hills (UNESCO Tuscan Mining Geopark).

## References

- Bader, P (2008) *Sustainability - from Principle to Practice*. [Online] Available from: <http://www.goethe.de/ges/umw/dos/nac/den/en3106180.htm> [Accessed 10 November 2013].
- Dewey, J (1954) *Il mio credo pedagogico. Antologia di scritti sull'educazione*. Firenze, La Nuova Italia.
- EU Commission (2001) *Communication from the Commission A Sustainable Europe for a Better World: A European Union Strategy for Sustainable Development*. [Online] Available from: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2001:0264:FIN:EN:PDF> [Accessed 10 November 2013].
- EU Commission (2005) *Communication from the Commission to the Council and the European Parliament on the review of the Sustainable Development Strategy - A platform for action* /\* COM/2005/0658 final, [Online], Available from: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2005:0658:FIN:EN:PDF> [Accessed 10 November 2013].
- EU Commission (2010) *Europe 2020*. [Online] Available from: [http://ec.europa.eu/europe2020/index\\_en.htm](http://ec.europa.eu/europe2020/index_en.htm) [Accessed 10 November 2013].
- European Parliament and the Council (2006) *Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning*. [Online] Available from: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32006H0962:EN:pdf> [Accessed 10 November 2013].
- Johnson, D, Johnson, R, Holubec, E and Roy, P (1984) *Circles of learning*. Alexandria, VA, Association for Supervision and Curriculum Development.
- Johnson, D, Johnson, R and Holubec, E (1994) *The nuts and bolts of cooperative learning*. Edina, Interactional Book Co.
- Kagan, S (2000) *L'apprendimento cooperativo: l'approccio strutturale*. Roma, Edizioni Lavoro.
- Mastrandrea, F R and Santini, F (2012) *Education for Sustainable Development. A tool to design training courses*. [Online] Available from: [http://www.ensi.org/media-global/downloads/Publications/347/ESD\\_Mastrandrea\\_Santini\\_2013.pdf](http://www.ensi.org/media-global/downloads/Publications/347/ESD_Mastrandrea_Santini_2013.pdf) [Accessed 10 October 2013].
- Pavan, D and Ellerani P (2003) *Cooperative Learning: una proposta per l'orientamento formativo*. Napoli, TECNODID.
- Pavan, D and Ellerani P (2006) *Manuale per la realizzazione di Unità di Apprendimento*. Torino, SEI.
- United Nations (1992) *UN Conference on Environment and Development*. [Online] Available from: <http://www.un.org/geninfo/bp/enviro.html> [Accessed 10 November 2013].
- UNECE (2005) *The UNECE Strategy for Education for Sustainable Development*. [Online] Available from: <http://www.unece.org/fileadmin/DAM/env/documents/2005/cep/ac.13/cep.ac.13.2005.3.rev.1.e.pdf> [Accessed 20 October 2013].
- UNESCO (2013) *Education for Sustainable Development (ESD)* [Online] Available from: <http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/> [Accessed 24 July 2013].
- UNESCO (2012) *Definition of ESD* [Online] Available from: <http://www.unescobkk.org/education/esd-unit/definition-of-esd/> [Accessed 1 October 2013].
- World Commission on Environment and Development (1987) *Report of the World Commission on Environment and Development: Our Common Future*. Oxford, Oxford University Press.
- Wilkins, A. (2011) *Co-operative Learning — a Contextual Framework*. Journal of Co-operative Studies 44 (3): 5-14.