RESEARCH AND INNOVATION IN EDUCATION FOR SUSTAINABLE DEVELOPMENT

Wim Lambrechts / James Hindson (editors)
RESEARCH AND INNOVATION IN EDUCATION FOR SUSTAINABLE DEVELOPMENT

Wim Lambrechts / James Hindson (editors)
CoDeS has been funded with support from the European Commission. This publication of CoDeS reflects the views only of the author, and the European Commission cannot be held responsible for any use which may be made of the information contained therein.
A LOCAL COMMUNITY AND WASTE MANAGEMENT: THE ECO-WAS PROJECT IN TRAVERSETOLO (ITALY)

Antonella Bachiorri
CIREA (Italian Centre of Research and Environmental Education), Department of Life Sciences, University of Parma, Italy, antonella.bachiorri@unipr.it

Alessandra Puglisi
CIREA (Italian Centre of Research and Environmental Education), Department of Life Sciences, University of Parma, Italy, alessandra.puglisi@unipr.it

Laura Monica
Environmental Department, Municipality of Traverasetolo, Parma, Italy, arch.lauramonica@gmail.com

Silvia Scaffardi
Environmental Department, Municipality of Traverasetolo, Parma, Italy, scaffardi@comune.traverasetolo.pr.it

ABSTRACT
The Municipality of Traverasetolo (Italy), together with five other European Municipalities, was a partner in the ECO-WAS project (ECOlogic-WASte), funded by the “Europe for Citizens” Program of the European Union. The project sustains a network of communities related to the promotion of common values and strategies in waste management and fostering eco-friendly behaviours related to recycling and reuse. Within this European framework the Municipality of Traverasetolo has supported a growth in relationships between the different parts of the local community, aimed at developing a shared culture of sustainability. All the schools in Traverasetolo, key agents for the involvement of the community, took part in the project. A questionnaire concerning daily waste management was developed and used by students to survey local people. This survey, together with other activities that involved students of different ages, encouraged cooperation within schools and between schools and the community and provided the basis for new practices for a sustainable community.

KEYWORDS
Collaboration, Local community, Questionnaire, Schools, Waste management

INTRODUCTION
The ECO-WAS project (ECOlogic-WASte) was funded in 2012 by “Europe for Citizens”, a multi-year financing programme established in 2004 by the European Commis-
sion, the European Parliament and the Council of the European Union. The purpose of the programme was to give financial support to activities and initiatives aimed at the promotion of an active European citizenship. In the years 2013-2015, the ECO-WAS project aimed to increase eco-friendly behaviour in relation to recycling and reuse through interaction and participation among European citizens. ECO-WAS also promoted opportunities for a growth in citizenship in relation to waste management, following guidelines set out by the European Parliament and the Council of European Union (2008), which put an emphasis on prevention, reuse and recycling.

Starting from the common issue of waste, ECO-WAS involved a number of different communities: Abegondo (Spain), Hasselt (Belgium), Lublin and Sosnowiec (Poland), Molndal (Sweden) and Traversetolo (Italy). The project gave people in these municipalities the opportunity to interact and actively participate in a shared plan across different European countries. It aimed to raise awareness about common problems and to seek possible strategies for the improvement of the quality of community life (both at a local and European level) in relation to waste management.

The project was also seen as a fruitful way to promote a community approach to sustainability in accordance with a recent communication of the European Commission that underlines: “the territorial approach to development is characterised as a dynamic bottom-up and long-term process based on a multi-actor and multi-sector approach, in which different local institutions and actors work together to define priorities, and plan and implement development strategies” (European Commission, 2013, p.5). Within this framework each European partner decided to elaborate a project based on specific needs of their local community.

The Municipality of Traversetolo is a village with a population of 9,460 people. It is located in the foothills belt of the Province of Parma - Po River Valley, in northern Italy and has an economy mostly based on agriculture and agri-food systems. The Municipality has a strategic environmental management priority to increase citizens’ involvement in, and awareness of, waste separation and recycling and as a result of this long practical experience, elaborated the ECO-WAS project together with other European partners. Separate waste collection has been operating in Traversetolo since 1999, and in 2011 an updated strategy introduced door-to-door collection of household and commercial waste separated into: paper and cardboard, plastics, organic and residual waste. The collection of glass, vegetable waste, expired medicines and other items, is still through on-street bins, whilst hazardous mate-
rials, bulky waste, oils, batteries and so on are brought by citizens to a municipal collection-sorting centre. As a result of the ECO-WAS project, the Municipality of Traversetolo aimed to increase its already high percentage of separate waste collection (81.9%, in 2011) and to approach the community with the issues related to waste reduction and reuse to promote cultural growth toward sustainability.

A local approach to waste management could be a good way of responding to social and environmental global issues. The framework of the ECO-WAS project was that if many stakeholders work together, then significant results can be achieved and different perspectives and approaches to sustainability can become embedded in community practices.

In the light of these ideas, from the start of the project, the Municipality involved a number of relevant actors in a shared elaboration of the project methodologies and strategies. These were:

- IREN EMILIA S.p.A., Waste, energy and water management agency;
- CIREA (Italian Centre of Research and Environmental Education), Department of Life Sciences, University of Parma;
- ENVIRONMENTAL EDUCATION SERVICE, Environmental Department, Province of Parma;
- LEGAMBIENTE VALTERMINA – the local committee of an environmental non-governmental organisation.

To fully exploit the opportunity for the cultural exchange offered by the ECO-WAS Project and to bring to the attention of local communities the issues discussed between European partners, the Municipality identified schools as key actors. The involvement of schools gave the opportunity to focus the interest of the local community on waste and also allowed the promotion and support of best practices in waste reduction, reuse and recycling. This process is important for developing a shared European culture related to waste management - one that respects the environment and promotes the well-being of both present and future generations. The ECO-WAS project also enabled partners to experiment with the idea of school as a living laboratory - a way to provide genuine experiences that establish social engagement and collaboration and the involvement of children as active researchers (Barratt Hacking et al., 2013).

In addition, the participation of schools gave the opportunity to discuss with different groups of people (students, their families, teachers, for instance) their
daily habits in the management of household waste and how this can be improved. ECO-WAS also allowed schools to share these reflections with the local community and find out how different actors and institutions are able to work together implementing common plans and strategies (Glass et al., 2012).

The project has also encouraged the cultural growth of children and citizens in their community. This supports the idea that schools can only strengthen their role in future societies if they become learning networks, reflecting the needs and problems of communities they are part of (Mayer and Tschapka, 2008; Jensen, 2005; Wooltorton, 2003).

The importance of sharing a specific approach to Education for Sustainable Development (ESD) also needs to be emphasised. The ECO-WAS approach had a number of specific features. One of these was that the project started from schools and then involved people of different ages in all the contexts of their daily life. A second was a belief that education and learning is a transversal process which involves not only school disciplines but also different learning environments, formal, non-formal and informal (UNECE, 2005; UNESCO, 2005; Wals, 2010).

METHODS
In order to elaborate a collaborative proposal, the Municipality of Traversetolo organised a number of meetings to discuss the involvement of schools in the project. Despite the fact that schools do not usually work together, this phase resulted in the participation of all schools within the Municipality. The Schools involved were:

- Nursery school “Il Paoletti” (n° 170 students, 0-6 years old),
- Nursery school “Madonna di Fatima” (n° 54 students, 3-6 years old),
- Nursery school “Michelino Micheli” (n° 93 students, 3-6 years old),
- Primary school “Gabriele D’Annunzio” (n° 470 students, 6-11 years old),
- Junior high school “Alessandro Manzoni” (n° 262 students, 11-14 years old),
- Technical high school (with an economic curriculum) “Maria Laura Mainetti” (n° 70 students, 14-19 years old).

After the preliminary meetings, a participatory planning meeting was organised involving the teachers of all the schools and the local partners. In November 2013, a work plan was drafted and ideas for several activities to be developed during the 2013-2014 school year agreed.

Action 1 involved preliminary training sessions including theoretical/practical less-
ons by experts and peers, together with practical sessions illustrating the integrated waste cycle and the opportunities for a creative waste reuse/recycling.

Action 2 involved educational activities delivered through all school disciplines including Art, Literature and Science, all aimed at reducing the environmental impact of schools. The planned activities started at the beginning of the project (e.g., recycling, reuse, fresh snacks to reduce packaging, tap water to reduce plastic bottles and composting), whilst others were spontaneously born during class activities. A significant effort was made to encourage the dissemination of students’ experiences to their families, as a way to stimulate commitment and awareness on waste and to permeate the whole community with good practices. Each school decided to develop experiences and activities related to its specific needs, the students’ age and so on.

Action 3 involved a questionnaire survey about daily waste management in the Municipality elaborated and conducted by students asking questions to local people and businesses.

Action 4 involved a final meeting of the project, held in November 2014, to discuss the motivational strategies related to waste management used by the different ECO-WAS European partners. During this meeting, held in Traversetolo, the educational activities and products developed were shared with the other partners. In addition, the meeting gave the Traversetolo team the opportunity to discuss and to share with both the European partners and the whole local community all the experiences developed within the project.

The survey
A survey about the daily waste management was one of the activities organised (Action 3). This was a strategic activity designed to give form to the experience of cooperation within schools and between schools and their community.

This survey aimed to analyse the behaviour and perception of waste and waste management of the inhabitants of Traversetolo. Local Administrators needed information about attitudes to recycling and as part of the ECO-WAS project decided to commission schools to produce a questionnaire for students’ families and local businesses. As well as gathering information, this initiative aimed to enhance the involvement and contribution that each citizen could make to improve waste collection specifically, and in more general, improve the living environment.
Students were involved as active researchers, supported by their teachers and by a number of local partners. The research process was participatory and developed “with” students (Barratt Hacking et al., 2013), enabling them to contribute to clarifying the focus of the project, the elaboration of questionnaire, data gathering, analysis and interpretation of the results. In addition, this approach aimed to empower the students and raise their social consciousness in order to change their behaviour.

After some lessons on issues on waste management and the methodological aspects of undertaking a survey, the high school students elaborated a first draft of the questionnaire shared with the local partners before a final version was produced.

The investigation was developed around 20 items organised mainly as closed or semi-closed questions. The number of open questions was limited so that the questionnaire was easy to manage, simple to understand and didn’t require too much time to complete and to elaborate the data. The questionnaire ended with a final space for free comments.

The questions invited citizens to reflect on their personal waste management and waste management in their municipality. Questions asked people how interested they were in waste management, how satisfied they were with the current process, and for their suggestions and general comments. In more detail, the questions were organised around four sections:
• Socio-demographic characteristics of the sample (questions 1 to 7);
• Daily practice of waste management (from 8 to 16) (auto-declarations);
• Perception of waste and reflection on personal waste reduction (from 17 to 20);
• Suggestions, requests, comments on waste management, addressed to the local Administrators of Traversetolo.

The test was distributed to a sample of:
a. students’ families; Students, from kindergarten to high school gave the questionnaire to their parents and brought them back to school within a few days;
b. local traders; High school students asked the questionnaire to the owners of a number of businesses in the town (greengrocer, hairdresser, baker, etc.) through an interview noting down the responses.
A total number of 655 questionnaire responses were obtained - 568 from households and 87 from businesses. They were encoded in an electronic form using Lime Survey, an open-source software, and then analysed. During this process the high school students took part in the quantitative analysis of the closed questions, whilst the open questions were analysed by the partners thanks using a qualitative methodology, through an ex-post encoding of the responses obtained.

RESULTS AND DISCUSSION
The results were processed and discussed by the local high school students, supported by their teachers and a number of project partners (CIREA/University of Parma, Environmental Education Service/Province of Parma and Environmental Department/Municipality of Traversetolo).

The key socio-demographic characteristics of the sample were:
- 87% were households (students’ parents) and 13% local businesses;
- 80% were between 31 and 50 years old;
- 75% were female;
- 85% were Italian;
- 78% had lived in Traversetolo for more than 5 years.

98% of those interviewed declared that they “usually practice separate waste collection”. The motivations for this are shown in Fig. 1: 79% of them attributed a “value” to this practice (“it’s important for the environment”, “it’s important for my town” or simply “it’s a right thing”); a few (16%) mention that it is “mandatory by law” and 5% consider separate waste collection to be “easy”.

---

8. Do you usually practice separate waste collection?
- Yes, because:
  - It’s mandatory by law
  - It’s a right thing
  - It’s important for the environment
  - It’s important for my town
  - It’s easy
  - Other: ........................................
  - I don’t know
- No, because:
  - It’s too difficult/a waste of time
  - It’s useless
  - It’s senseless, because then you know that waste is disposed of all together nobody does it
  - I don’t care
  - Other: ..............................
  - I don’t know

Figure 1. Question 8 - Factors that motivate the separation of waste for collection.
It is interesting that 73% of the interviewees said that if they saw someone who didn’t respect the waste collection rules, they would intervene: 57% would try to explain what should be done and 16% would rebuke the other person (Fig. 2).

![Figure 2. Question 14 and related responses.](image)

A further confirmation about the awareness of citizens and their involvement in waste management is shown in Fig. 3. Only 21% of the interviewees declared that waste ceased to be a concern for them after it had been correctly disposed of.

![Figure 3. Question 18 and related responses.](image)

In the light of these results, it seems that a large proportion of the people of Traversetolo are aware of at least some of the links between people, the environment and its management. This is confirmed by the responses to question 19 where 92% of the interviewees consider the reduction of waste to be very important.

In contrast with this awareness, only 35% of the sample knows that they can “do something to reduce waste” (Fig. 4), with prevention and attention to purchases being most often mentioned. The remaining 41% of the sample claim they don’t know
how to act and 24% think that it is not possible to reduce the production of waste. This data suggests that there is work to do to improve people’s understanding and competencies related to the whole waste cycle.

![Pie chart showing responses to question 20](image)

**Figure 4. Question 20 and related responses.**

This idea was also confirmed by the 20% of citizens involved in the survey who through the final open question, asked for more support from local Administration, including controls (with related fines and penalties), a reduction of costs and also educational and informative initiatives.

It is obvious from these results that Traversetolo is characterised by a wide awareness and participation of the community in environmental issues such as waste management. The project therefore has helped to identify the key factors that should be kept in mind when reflecting on and planning collaboration between a local community and different actors, including schools. These include some fundamental characteristics of the community such as participation, awareness, attention to waste management and commitment to the environment (Espinet and Marquez, 2014). These points have been taken into account during the global evaluation of ECO-WAS in Traversetolo.

The involvement and cooperation between different stakeholders such as the University, Town Council, the waste management Agency, Non-Governmental Organisations and schools, gave rise to some unexplored relations between stakeholders, enabling them to share common challenges. These relations required time to manage and nurture so as to build a common language before identifying shared aims between partners. In addition, this process required the integration of the specific roles of each actor. So for example, the advisory and consultancy role often associated with the University and the waste management Agency, were
enriched with the support given for project implementation by the town Council of Traversetolo and by the services and volunteer staff provided by Legambiente Valtermina.

To ensure the success of these relationships among the external actors and the schools, a number of collaboration methods were important. First of all, strong attention was paid to communication between the actors through regular meetings, school committees and informal round tables promoted and supported by the Municipality of Traversetolo. These helped to give form to an inclusive environment for all the partners and to develop a “win-win” situation for everyone involved. Thanks to this inclusive approach it was possible to tackle the disconnection between schools’ teaching and learning and the daily life of the community and the resulting lack of integration between schools and community.

The shared knowledge and expertise of the project partners allowed students to experience meaningful learning opportunities and enabled them to develop a sense of belonging and an awareness of being actors within their community. Throughout this process, the motivation and enthusiasm of school managers who provided support to school staff in general and teachers in particular, needs to be underlined.

**CONCLUSION**

The value of the school-community collaboration was an important aspect of the evaluation of the ECO-WAS project in Traversetolo. From the evaluation it was clear that the promotion of community-based learning had a positive impact in addressing environmental and sustainable development issues. In more detail, the collaboration with the local Administration was a factor of success in terms of project consolidation. The schools involved in a project saw that it was not just an educational activity but also useful for the community. This approach contributed to a fostering of new values and a new culture in schools - a culture of solidarity, commitment, trust and shared responsibility (Espinet and Marquez, 2014). It also contributed towards breaking the boundaries between formal and non-formal education, suggesting that the commonly shared notion of learning in just happening formal contexts needs to be revised. Society today requires hybridisation and synergy between multiple actors and as a consequence the blurring of the division between formal and non-formal contexts of education that this project provided (Wals, 2010). So, the project in action in Traversetolo can be seen as an opportunity for this type of expanded learning weaving together sectors, school disciplines and institutions.
As well as these positive results there were also some weaknesses in the project. First of all, the involvement of the teaching staff was voluntary and sometimes this affected both motivation and participation. As a result, some teachers left the project leading to an increased complexity in the collaboration processes. The gap between school and project timetables also sometimes restricted opportunities such as peer to peer learning and tutoring activities between schools. It would have been useful to consider these issues in project planning. The involvement of citizens to help disseminate and discuss the project results is an action in progress and will add value and raise opportunities for the future.

The project is not yet completed and so it’s not possible to fully evaluate its impact on the community over time. In spite of this, one of the most important hopes for the future is the development of other educational projects for sustainability in the local community of Traversetolo building on the results of ECO-WAS. The aim would be to foster greater participation among citizens and other actors within the community, and to give form to an educational community based on sustainability. The project ECO-WAS is a stimulating case study of the development of an educational community based on school involvement and an aware and active citizenship.

In addition, ECO-WAS being a European project, enabled the comparison of the different policies, practices and traditions related to waste management of the other European partners, all of which belonged to different cultural areas. Some of the European partners were like Traversetolo and had practiced separate waste management for a significant time, whilst others had only just started on this journey. The debate between partners allowed experiences to be exchanged and provided ideas for the implementation of waste management in other contexts, giving due consideration not only to the technical aspects of waste management but also to the cultural perspectives.

This European dimension of ECO-WAS has given the partners the opportunity to share and highlight the values of the project, which is working towards common goals and having an impact on the different local communities for a shared European culture related to waste management – one that is respectful of the environment and the well-being of both present and future generations.

REFERENCES


