

# Cogenerative dialogues as a tool for evaluation in education for sustainability: empowering community actors through join reflection on practice



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### A focus: New tools for community oriented ES activities

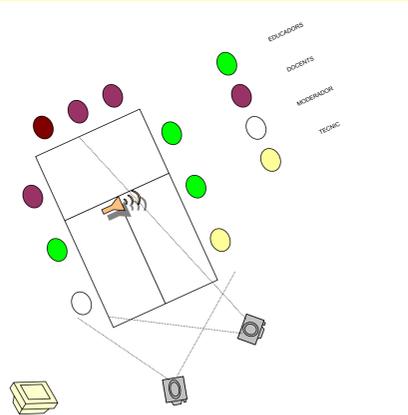
The focus of the collaboration is the evaluation of education for sustainability activities which are part of a local ES program offered by the municipality of Sant Cugat del Vallès. The principles that act as background of this evaluation are the following: (a) the evaluation as an inclusive activity that takes into account the diversity of community actors' views; (b) the learning of life styles more committed towards the sustainability of the planet; and (c) the integration of social, cultural, economical and natural dimensions involved in the problematization of ES activities. The main contribution of this initiative is the creation of an evaluation tool called DICES (Cogenerative Dialogues for ES) based on a participatory and interactive approach among all stakeholders with the aim of negotiating quality criteria for ES activities. This tool has been inspired by the work of Roth & Tobin (2001) who first used cogenerative dialogues in teacher education.

### The schools: Infant and Primary education school teachers' as active evaluation participants

The teachers who have participated in the development of the DICES are members of the School Agenda 21 Program of the municipality of Sant Cugat del Vallès. The teachers involved come from infant and primary education public schools (3 to 11 years of age) whose students held a middle class economical level. These teachers have actively participated within the selected ES activities jointly with the environmental educators in charge of them.



Cogenerative dialogues for the evaluation of ES activities



### The community: teachers, environmental educators, local administrators and researchers joined evaluation

The context for the piloting of the tool is the municipality of Sant Cugat del Vallès, a very well communicated city close to Barcelona, and with 80.000 inhabitants. The economical level of the population is middle to high with a strong business network of technological and universities. In the past, agriculture was the main economical activity of the city. At present a sector within the municipality and citizens support the transformative challenge of recovering the urban and periurban agricultural activity. The education for sustainability promoted by the city hall embraces this challenge so that schools can have an active role in it.

The community members who have participated in the development of DICES have been the following:

The environmental educators who elaborated and implemented the ES activities. They were members of a stable NGO contracted by the city hall. They held a contract which included the preparation and the follow up of the ES activities, something that rarely happens when NGO work for municipalities.

The ES local administrator within the city hall of Sant Cugat del Vallès which acts as the coordinator of ES activities offered by the city hall to local schools. His role has been to coordinate the evaluation activities and to actively participate in DICES.

The Universitat Autònoma de Barcelona, and more precisely the Science and Mathematics Education Department, and the research group Gresc@. The collaboration has been established thanks to a contract between the university and the city hall with the aim of evaluating the ES activities offered to all public and private schools in the municipality.

### The tool: Cogenerative dialogues as tools for the evaluation of ES activities

The aim of DICES was to evaluate the new ES activities on school agroecology developed as a consequence of the first evaluation cycle. It was necessary for the program to develop a more participative and dialogical methodology that would be more coherent with the fourth generation evaluation of Guba & Lincoln (1989). Cogenerative dialogues were first successfully introduced in science education and teacher education by Roth and Tobin (2001). The aim of cogenerative dialogues is to use conversations to give the voice to those educational actors that are usually marginalized within the educational system. This conversation becomes social spaces where heterogeneous participants discuss around a common theme to get consensus. A socio critical approach to education for sustainability was orienting the ES activities and their evaluation.

DICES are systematic evaluation activities undertaken at lunch time in a well known social place such as a city café, where relevant stakeholders meet to evaluate the ES activities they have experienced with children. One DICES was conducted at the end of the academic year for each new ES activity. The stakeholders who have participated in each DICES are approximately two to three teachers, two environmental educators, one local administrator and one researcher who acted as a moderator.

All DICES were videotaped to be analyzed later for research purposes. DICES were conducted at lunch time because it was easier for the teachers and the environmental educators to leave their job. It was also necessary to have a DVD reproducer and a screen to be able to view the video clips specially prepared for this purpose. Each DICES lasted approximately one hour fifteen minutes. In order to be successful DICES needed the collaboration of the restaurant owner who had to provide the appropriate space and food.

The development of a DICES was the following:

1. The moderator provided a brief presentation of the way the DICES work and a presentation of participants
2. Participants were provided a sheet with some questions to characterize the professional profile of participants
3. A general question on the functioning of the ES activity under evaluation was posed and participants' views were shared. This acted as an ice breaking question.
4. More specific questions were set on the table that were the focus for agreements in relation to the content of the ES activity, the didactical strategies used by the environmental educators, teachers participation in the activity, the educational resources used, the students' learning, the local environment, the degree to which this activity approached sustainability, and so on.
5. Finally, the conversation closed when all participants were able to identify the most salient value of the ES activity experienced and their perception of the DICES as an evaluation tool.

### The collaboration: Two evaluation cycles using two evaluation approaches

The evaluation of ES activities started in 2008 within the frame of the first contract between the city hall and the university. A first evaluation cycle used a traditional approach to evaluation where an external evaluator used a set quality criteria emerging from the literature to evaluate the activities organized through the agenda 21 vectors such as water, energy, biodiversity, territory, mobility, etc. From this first evaluation cycle some recommendations emerged and activity changes were undertaken by the local administrators.

A second evaluation cycle was initiated taking into account changes in the framework of the Education for Sustainability program from the city hall. Both the School Agenda 21 program and the ES external activities targeted to schools were redesigned taking into account the new framework of School Agroecology. A new evaluation tool was designed, DICES (Cogenerative dialogues for the evaluation of ES activities) inspired by the focus group method, a well known social research method. This tool emphasized the democratic dimensions of evaluation and served the purpose of including community actors in the identification of ES activities' quality. Before the evaluation meeting with the different stakeholders, the researcher observed and videotaped the different activities so that a short video clip could be realized with the purpose of using it in the meeting. The purpose of the video clip was to act as a prompt for reflection in the evaluation meeting. The video clip was used as a context for the questions activating interaction and thus reflection among participants in the evaluation meeting. Another use for the video clip was dissemination. In addition a narrative was requested after the meeting to all participants to collect individual relevant reflections.

Once all DICES were done, the researcher wrote a document that was used in the final evaluation meeting. In this meeting all environmental educators involved in the ES activities, the researchers and the local administrators made decisions on what changes to implement for the next year.

We think that what provides this tool an authenticity is the fact that it constitutes an interactive social learning activity where different stakeholders from the community engage into evaluation of ES activities. A key factor for the sustainability of the initiative is the funding through the contract between the city hall and the university. The challenge however is to find an easy to use form for DICES that can be integrated within the regular dynamics of the program without the input of the university.

### The value: The challenges and opportunities of conversations as tools for evaluation

The most important impact of DICES has been the strengthening of bridges between formal and non formal ES education. For the environmental educators the fact of participating in DICES has accelerated the overcoming of a general feeling of alienation from the formal education system. DICES has also contributed to environmental educators' empowerment to the point that they have been able to generate a new NGO devoted to the development of these activities in a new urban agricultural land. For the teachers the fact of having introduced time to reflect on education for sustainability has been tremendously valued since teachers' official schedule has shown a tendency to exclude time for reflection and exchange among educational professionals. All participants have learnt that there are other more satisfactory ways of doing evaluation which are more participative and at the end more useful for those who are actually participating in the ES activities. Finally the fact that research methods can become themselves tools for the improvement of practice in ES is also an important impact that supports the establishment of bridges between research and practice in education in general and education for sustainability more specifically.

