



**HAL**  
open science

## Development of competences and conditions for good practices in ESD.A qualitative international survey.

Silvia Caravita, Pierre Clement

### ► To cite this version:

Silvia Caravita, Pierre Clement. Development of competences and conditions for good practices in ESD.A qualitative international survey.. ESERA 2011 Conference, Science Learning and Citizenship, Sep 2011, Lyon, France. pp.37-41. hal-01054212

**HAL Id: hal-01054212**

**<https://hal.science/hal-01054212>**

Submitted on 5 Aug 2014

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

## **DEVELOPMENT OF COMPETENCES AND CONDITIONS FOR GOOD PRACTICES IN ESD. A QUALITATIVE INTERNATIONAL SURVEY**

*Silvia Caravita (1) and Pierre Clément (2)*

(1) CNR Roma (Italy), [silvia.caravita@istc.cnr.it](mailto:silvia.caravita@istc.cnr.it)

(2) S2HEP, University Lyon 1, Université de Lyon (France), [Pierre.Clement@univ-lyon1.fr](mailto:Pierre.Clement@univ-lyon1.fr)

*Abstract:* The concept of competence is still controversial. An operational definition in the educational field considers competence « *holistic in the sense that it integrates and relates external demands, individual attributes (including ethics and values) and context as essential elements of competent performance* ». Each competence emerges from the interaction among « *knowledge (including tacit knowledge), motivation, capacities, attitudes, values, emotions, mobilized for effective actions in particular contexts* ».

Our qualitative analysis identified competencies expected by projects of Education for Sustainable Development and the conditions for their development. Reports about “good practices” of UNESCO associated schools and an inventory of case studies in Italian Secondary Schools have been analysed to highlight the five learning pillars (to know, to do, to be, to live together and to transform) pursued by these experiences. The specific competencies were matched with a list of ESD themes, and with phases of realization of projects aimed at producing some change in the close life-environment.

The development of the teachers’ competencies seems to largely occur in parallel with the actualization of the experiences; teachers’ and students’ motivation appear mutually contagious and certainly play an important role.

The integration of disciplinary knowledge in real life problems, and the identification of unifying trans-disciplinary conceptual networks, need attention.

*Key-Words:* Education for Sustainable Development – Competencies – School practices

### **THEORETICAL BACKGROUND**

The concept of competence is still controversial and even more so, its application in the real curriculum is far from being consistent with its potential innovative drive, as highlighted by the opinions and experiences expressed by the participants from 46 countries in the E-Forum on Approaches by Competencies (2006).

Conceptual and procedural knowledge were viewed as separate and independent cognitive competences in the solution of problems before being inter-related in a model of development in which either one or the other may develop first and influence the other depending on the experiences offered by the context to the learners (Sophian, 1997). “Conceptual knowledge

may guide their attention to relevant features of the problem and help them to organize their information in their representation of the problems. This well-chosen problem representation may then support generation and use of effective procedures” (Rittle-Johnson and Siegler, 2001)

The initial tendency in cognitive sciences was to discriminate among ways of defining competencies which focused on cognition or performance or on knowledge domain (specific or general). The DeSeCo project achieved a consensus on an operational definition of competence in the educational field: « *holistic in the sense that it integrates and relates external demands, individual attributes (including ethics and values) and context as essential elements of competent performance* ». Each competence emerges from the interaction among cognitive and practical abilities : « *knowledge (including tacit knowledge), motivation, capacities, attitudes, values, emotions, mobilized for effective actions in particular contexts* ». In addition to cognitive competencies, competence-related motivation plays a very important role.

The *competent handling of a situation* constitutes the principal criterion for evaluating situated competence (Jonnaert et al., 2006). Therefore, in a competency-based curriculum, exit profiles specify the classes of situations that learners must be able to handle competently by the end of their education.

## RESEARCH QUESTIONS

The design of ESD strategies promoted by UNESCO is based on the integration among three dimensions: environmental, social and economical situated in cultural contexts, and on a constructivist perspective about teaching/learning that aims at developing learning to know, to do, to be, to live together, to transform

The relevance of this interaction among knowledge, values and attitudes and practices is widely acknowledged by the educational systems as the fertile humus for the growth of competencies, but countries have specific priorities concerning the expected competencies. Many of the competencies envisaged for ESD correspond to the key-competences for education: act autonomously, use physical and socio-cultural tools (symbolic languages among them) for effectively interacting with life-environment, with others in heterogeneous groups, for participating as active citizen. But other competencies are strictly linked with the objectives and pedagogical approach of ESD that makes multi-disciplinarity, systemic and critical thinking the core of its actions.

Our research wants to explore which kinds of students’ and teachers’ competencies are potentially developed by the ESD projects in the actual school practice. To which extent are they specific of cultural contexts? Which are the features of the projects and the conditions in which they are enacted that teachers assumed to be effective for the growth of competencies? Can they be assessed? Which recommendations might be generalized for the diffusion of ESD and also the transfer of its strategies to other areas of curricular teaching?

## METHODS

Our study is a bottom up investigation carried out through a qualitative analysis of reports about ESD projects. We have concentrated on Secondary School projects and given priority to the variety of themes treated. Our sources of information are:

- UNESCO selections of “good ESD practices” that collect the reports written by the teachers following a predefined grid. The projects belong to five regional areas (Africa, Arabian area, Asia and Pacific area, Europe and North America, Latin American and Caribbean area)
- Inventories of case studies in the Italian Secondary Education collected by direct contacts with the coordinators of the projects.

The reports for each school project have been analysed by filling up a table as the one inserted below (most of the work was done in French).

<b>Competencies (KVP, inside a cultural context)</b> <b>K = Scientific Knowledge, V = Values, P = Practices</b>					
<b>Theme and location.</b> <b>Declared objectives</b> <b>Disciplines involved</b> <b>Promoters of the project</b> <b>Collaborating agencies</b>	<b>« To know »</b>  <b>(connaissances, démarches, valeurs)</b>	<b>« To be »</b>  <b>(valeurs, attitudes, motivations)</b>	<b>« To do »</b>  <b>(pratiques, savoir-faire, valeurs)</b>	<b>« To live together »</b>  <b>(valeurs, pratiques, connaissances)</b>	<b>« To change »</b>  <b>(soi-même, les autres, l’environnement)</b>

Twenty projects have been presently analysed. Ten Italian ESD experiences have been identified and the teachers who coordinate these projects have been interviewed to highlight their conceptions of competencies and of the positive and negative factors influencing the ESD activities in schools. The analysis of these interviews is still in progress.

Our formulation of the competencies that the students have possibly built has to be considered as an a-posteriori emergent construct, because it synthesizes the information contained in the table and the description of the pedagogical approach of the project.

The competencies have been clustered by ESD themes to highlight the aspects that were privileged; they have also been organized within a framework that links the competencies to different modalities of students’ participation in the projects.

## PRELIMINARY RESULTS

The examined projects document the great creativity and dynamism of the engaged teachers and schools. The development of the teachers’ competencies seems to largely occur in parallel with the actualization of this kind of experiences because teachers’ and students’ motivation appear mutually contagious and certainly play an important role.

Actions aimed at introducing changes in the local environment, in making the school a point of reference and a resource for the community, make the goals of most of the experiences. The challenges faced by these goals, individually and collectively accepted, are at the origin of the high motivation: there are no pre-existing answers to the questions, everyone is intellectually and operatively engaged.

It is interesting to underline that the reports of the projects rarely use the term of competence to specify either what is envisaged either which were the results attained by the learning processes. We considered the competencies as the eventual integration of the five kinds of learning that were more or less explicitly indicated in the reports.

We reproduce here an example from our report for the UNESCO (Clément and Caravita, 2011, p. 65):

**Table N°11, Accademia de Averroes Peace Programme, Pakistan**

**Context:** Communities where students experience the consequences of cultural and religious prejudices

**Knowledge:** knowledge about cultures and religions of the social groups composing the community; awareness of the interconnections among discrimination, economic deprivation and social marginalization; understanding the interdependence between environmental and human health

**Cognitive abilities:** ability to give meaning to cultural diversities, ability to search for relationships among socio-economic, cultural and environmental dimensions in contexts, critical thinking; ability to de-contextualize and generalize problems

**Practical abilities:** abilities for establishing positive social relationships with different members of the community, skills for cooperating in actions of social solidarity, communication skills

**Attitudes:** curiosity, openness, trust

**Emotions:** empathy, appreciation, satisfaction, self-esteem, self-confidence

**Values and ethics:** responsibility, valuing diversity, pursuing the ideal of justice

**Motivations:** willingness to share with others, interest in diversities, motivation to go beyond the surface of facts, availability to be involved in concrete social actions and policies

**Competencies:** competence to make explicit the prejudices that undermine the cohesion of local society (racism, integralism, injustice, ...); higher awareness of the factors which require a responsible engagement at the individual and social level to contribute to build a more sustainable future; capacity to communicate, to understand and to cooperate with other members of the community with open-mindedness and appreciation for diversity; better understanding of the interdependence between ways of living and environmental quality.

We found clear evidence that the competencies are cued by and coherent with the context itself, its demands, the situations/problems which are identified or which are created by the pedagogical approach. Therefore to formulate the competencies in general terms seems to erase the many important variations that distinguish the school class experiences among them when engaged in similar projects (without mentioning the individual differences). Listing standard ESD competences might result in a sterile exercise, even if it appears necessary for orienting the design and assessment of projects.

The activities planned by the teachers are finalised to “problems for sustainability and search for solutions ” but the projects may involve the students in different phases of this process, therefore the contribution of the types of learning in building the competencies may differ. The students can mainly have the role of *participants* in “models” of action, or of *designers* of possible solutions, or of *actors* in the operational translation of projects. We therefore framed the competencies in categories (Clément and Caravita, 2011) that may help to reflect on how knowledge, abilities and values can be implicated in different ways.

One critical point in teachers’ mediation, in fact, seems to be how to regulate the interaction among these components consistently with the purposes of the ESD project, how to capitalize on motivation and emotions as magnifiers of cognition. The integration of disciplinary

knowledge in real life problems, the identification of unifying trans-disciplinary networks are issues which demand for greater attention in teachers' education and in the curricula.

## REFERENCES

Clément, P. & Caravita, S. (2011). Education pour le Développement Durable (EDD) et compétences des élèves dans l'enseignement secondaire - Une étude commandée par l'UNESCO, Paris: UNESCO, [www.ensi.org/Publications/Publications-reports/](http://www.ensi.org/Publications/Publications-reports/)

DeSeCo = Definition and Selection of Competencies. Project website (2002): [www.deseco.admin.ch](http://www.deseco.admin.ch)

E-Forum on the Approaches by Competencies held from November 20<sup>th</sup> to December 15<sup>th</sup>, 2006 and organized by the International Bureau of Education, [http://www.ibe.unesco.org/fileadmin/user\\_upload/COPs/Pages\\_documents/Competencies/EFforum\\_Summary\\_Report\\_ENG.pdf](http://www.ibe.unesco.org/fileadmin/user_upload/COPs/Pages_documents/Competencies/EFforum_Summary_Report_ENG.pdf)

Jonnaert, P., Barrette, J., Masciotra, D. (2006). Revisiting the Concept of Competence as an Organizing Principle for Programs of Study: From Competence to Competent Action. ORE/UQAM, (Observatoire des Réformes en éducation), Montreal, Canada.

Rittle-Johnson, B. and Siegler, R. (2001). Developing conceptual understanding and procedural skill in Mathematics : an iterative process. *Journal of Educational Psychology* 93(2), 346-362.

Sophian, C. (1997). Beyond competence : the significance of performance for conceptual development. *Cognitive Development* 12, 281-303.