

# What and how: *extras* in ESD communicated by teachers

Per Sund, Mälardalen University

## Abstract

In the debate of implementation of education for sustainable development content issues are generally treated as questions of including subject content from other subject areas than ecology within more interdisciplinary teaching approaches. The aim of this exploratory study is to enhance knowledge about content issues beyond the view of subject contents, by studying teachers' messages communicated to students. Ten upper secondary teachers are interviewed about their teaching and asked three curricular questions: What? (the content issues); How? (the methods) and Why? (the purposes of education). The results from this empirical study show that teachers are communicating different relations between their teaching content and e.g. the society, and other more general contexts for their teaching activities. Seven curricular questions are identified in this study, which can be helpful in visualizing *the extras*. Answers to these questions show important differences between teachers in environmental education compared to teachers with a more ESD like teaching approach. The result can be useful in a reflection-tool for teachers. The overall contexts, *the extras*, which teachers communicate, are also a democratic issue. Teachers need to be fully aware of all the content they communicate to students, whether it is explicit and/or implicit as well as intended and/or unintended.

## Introduction

In the last decade there has been a considerable international debate on the nature and progress of education for sustainable development (ESD). Essential aspects in this debate are questions of what ESD should be aiming at or what kind of abilities students should develop (Hart, 2003; Huckle & Sterling, 1996; Jensen & Schnack, 1997; Scott & Gough, 2004; Sund & Wickman, submitted; Tillbury & Turner, 1997; UNESCO, 2005). Content aspects are commonly described in words of interdisciplinary or transdisciplinary, but are rarely discussed in what way they will be formed and influenced by teachers teaching practice. Often the content questions are commented in the debate by adding economic and social issues to ecology. This is a simplistic summary of the discussions, but the intention is to show that content issues are mainly seen as different aspects of subject content applied in teaching. This exploratory study will have another approach to content questions. It will study the content produced and communicated, by teachers' actions to students through different messages.

## Purpose

The overall aim of the study is to enhance knowledge of content issues in education for sustainable development. This study will examine content communicated to students during the conduct of teaching.

Science textbooks, teachers, and classrooms teach a lot more than scientific meaning of concepts, principles, laws and theories. Most of the *extras* are taught implicitly, often by what is *not* stated. Students are taught about power and authority, for example. They are taught what knowledge, is worth knowing and whether they can master it. They are taught how to regard themselves in relation to both natural and technologically devised objects and events, and with what demeanour to regard those very objects and events. All of these *extras* we call "companion meanings" (Roberts & Östman, 1998)

Teachers' different ways of approaching students and teachers worldviews communicates different messages to students about e.g. their role in the process of change for a better world. *These extras* are in this study considered to be a crucial part of all content that students face in school. These extras is a type of *what*, which is developed through the conduct, *how*. Subject content and methodological approaches get intertwined and form an overall educational content. The purpose of this empirical study is to develop a systematic way of making these explicit and/or implicit and intended and/or unintended messages discernable. Messages communicated to students by teachers through their planned teaching practice.

*The research question is:*

In what way can content communicated by teachers in the process teaching Education for Sustainable Development be discerned and described systematically?

## Background

Content selection can be regarded as mainly a matter of choosing adequate subject concepts and abilities. Scientific content is taught within a context, an overall curricular intention or purpose. The context of a scientific content or a coherent set of messages *about* science can be called an emphasis (Roberts, 1982). The same content can be used for different purposes. Teachers are also in the position of making decisions about the overall context for the chosen subject content. This overall context is communicated by companion meanings (Roberts & Östman, 1998). Subject content in an overall context enhance students meaning making (Östman, 1995). These overall contexts can be especially interesting for environmental education and ESD. Personal understandings of the cause of environmental problems are of great importance, when teachers are discussing the *right* or the *best* way to accomplish *good* environmental education. The causes can be regarded as ecological, ethical or political (Sandell, Öhman, & Östman, 2005). Environmental education is also affected by how teachers perceive of education more generally. We can call this an educational philosophy which encompasses general ideas of the role and purpose of schooling in society and which directly affects the conduct of teaching. One way of structuring and understanding an educational philosophy is to start with three curricular questions: *What?* (the content issues); *How?* (the methods) and *Why?* (the purposes of education). A logical and systematic way of responding to this type of questions can be considered to represent an educational philosophy (Öhman, 2004). *Essentialism* has its starting point in science facts. The teacher is the expert who is expected to convey his/her scientific knowledge to their students. *Progressivism* focuses on the students' interests and needs. Here are discussions of mutual interests and teaching methods given a great deal of priority. Students develop their knowledge and abilities through group work, problem solving and first hand experiences in nature and society. *Reconstructivism* emphasise the role of schools in the development process of future democratic societies. Here is a great deal of attention given to viewpoints presented in school and to learn how to critically evaluate different alternatives.

Since the 1960s there have been three selective traditions, with reference to their roots in educational philosophy and how environmental and developmental problems are perceived by teachers, evolving in environmental education in Sweden: fact-based EE, normative EE and pluralistic EE. The latter tradition can also be called ESD (Öhman, 2004) These traditions can be regarded as different views of what might be considered to be *good* environmental education.

The starting point for this study is an earlier study of teachers' far reaching purposes (Sund & Wickman, submitted). During the work with the earlier study it became obvious that teachers focusing on developing students' environmental consciousness were very "local" in their teaching. Few teaching activities were carried out outside the classroom except for excursions in nature. Students, of teachers working more within an ESD approach, were doing actions in the local community. The studies of selective traditions have also observed important differentiations in the content and teaching methods (Sandell et al., 2005). This study is analysing empirical data from interviews and makes some comparisons to the differentiations in selective traditions. Instead of separating content and teaching methods they are twined together. Schnack (2000) emphasises that the actual creation of teaching is to be regarded as a teaching content: "The central curricular question is no longer simply concerning the *process* of education, but must itself form part of the content" (p.123). This content is made visible by studying companion meanings in answers to content related questions all teachers need to answer.

## Method

Data was gathered through 60-80 min. long interviews of ten upper secondary school teachers who regularly taught a mandatory course in general science. The main part of the course content concerns environmental issues. The teachers were asked to describe their teaching concerning: the content -what, the methods -how and the purposes -why. The data was analysed heuristically within a theoretical framework of pragmatism (Dewey, 1922).

## Results

In the analysis seven questions have crystallised that illuminate seven essential relations in education in environmental education and education for sustainable development. These questions and teachers different answers are explained in more detail below. Teachers communicate companion meanings in different ways and these can be used to describe how teachers communicate an overall context to students. Integrated subject content in a specific overall context, offer students possibilities to enhance their own meaning making.

### Teachers companion meanings – *the extras*

#### 1) Why are environmental issues important?

Teachers' different answers to this question communicate companion meanings which are concerned with relations between man and nature. Teachers' answers are based on their views in environmental ethics. Teachers with an anthropocentric view discuss the necessity of learning more *about* nature in order to take care of and manage it in the best possible way. Nature thus appears as a teaching object that is separate from mankind. This view can be common in the fact-based tradition (Öhman, 2004). Teachers with a more biocentric view of man's relation to nature often teach students *in* nature – outdoors – in an effort to awaken feelings of belonging to or of being at one with nature. In education, teachers can present nature and man as a kind of common, mutual *subject* to be defended; a view that can be common in the normative tradition of environmental education. The *importance of environmental issues* communicates a socialisation content that relates to how nature is described and used in education.

2) What is the teaching aiming to change?

Teachers' ways of teaching and describing knowledge and abilities take their point of departure in the aspect of teaching that deals with the relation between individual or collective solutions as the overarching purpose of education. The teaching can be product-oriented, or more oriented towards the teaching process. Product-orientated teachers often aims at developing individual subject knowledge and personal values, while process-orientation teachers aims to actively develop democratic competencies through group work and various student actions. The *teachers' project of change* is often a combination of changing students lifestyles and developing their collective democratic abilities for the common work of society.

3) What role do students play in education and environmental work?

Teachers answers to this question shows the companion meanings teachers communicates to students about the importance of their participation in education and for overall societal work with environmental issues, which have a common departure in the power relation between teachers and students. Companion meanings are communicated through the way in which teaching is directed. Teacher, who control education firmly, communicate companion meanings about students not having yet managed to claim full citizenship. Students can be perceived by some teachers as some kind of educational raw material, or as fully-fledged citizens with responsibilities and valuable personal resources. The latter teachers regard democratic aspects like students' participation and influence in the planning as important and communicates to students that they are competent enough to participate in the development of their own education. Teachers' socialisation content, *the extras*, communicates how important students are in education and in society's common work. These companion meanings describe something that could be called *students' action space*.

4) In what way could environmental problems be solved?

Teachers' views on environmental issues communicate messages to students such as which knowledge students should develop to be successful in the common work of solving environmental problems in society. Teachers can choose to give prominence to facts or values questions, or to assert that environmental issues are political issues which need to be solved democratically. These democratic abilities can be developed by working with actual societal problems. The knowledge needed could be referred to messages about the students' *tools of change* in environmental and developmental issues

5) What different inter-human relations are established?

Teachers' expressions regarding inter-human relations can be understood as a possible increased inclusion of human ethics in the environmental education content. Teachers' teaching might quite simply lack messages about human ethics because the content is devoid of inter-human social orientation relations and values. Such education can be understood as being firmly rooted in subject matter perspectives, often mainly in natural science. Teachers who communicate *social orientation knowledge* regularly include inter-generational or other historical perspectives in their teaching. Apart from the global perspective of environmental issues, global perspectives also include inter-human issues such as mutual interdependence, an equitable distribution of global resources and solidarity.

6) How useful is school knowledge in environmental and developmental issues?

This question makes teachers' companion meanings concerning the relation between school and society visible. Teachers can choose to convey pre-selected school content from curriculum or to work with real life issues in contemporary society. Teachers who show confidence in the usefulness of school content or knowledge can offer students a greater participation in and communication with society.

Educational content can be a content that occurs in the actual conduct of teaching in interplay with society, which contributes to making the content *authentic*. Companion meanings communicate messages about where the content is applicable in solving and working with environmental issues in students' everyday lives. Socialisation content communicates to students where environmental issues and the material necessary to work with them are to be found in their everyday lives.

#### 7) Where can students encounter environmental work?

Teachers can choose to locate their teaching in different spaces such as: classroom, school, municipality, country or the world. Teachers communicate companion meanings of where students can meet and work on environmental and developmental issues. *Students activity space* is the space where teachers let students to *live through* and use their acquired knowledge in the teaching process.

### Summary

Teachers are through their different ways of teaching answering seven different content related foundational questions. The answers concerns different relations within the educational content.

<b>Questions about teaching</b>	<b>Described content-relation</b>	<b>The overall context</b>
1) Why are environmental issues important?	Man – nature	<i>The importance of environmental issues</i>
2) What is the teaching aiming to change?	Autonomous individuals – Citizens	<i>Teachers' project of change</i>
3) What role do students play in education and environmental work?	Teacher – student	<i>Students' action space</i>
4) In what way could environmental problems be solved?	Environmental issues – solutions	<i>Students' tools of change</i>
5) What different inter-human relations are established?	We, here and now – mankind, past and future	<i>The social orientation knowledge of the content</i>
6) How useful is school knowledge in environmental and developmental issues?	School – society	<i>The authenticity of the content</i>
7) Where can students encounter environmental work?	Classroom – World	<i>Students' activity space</i>

## Conclusions and Implications

These seven foundational questions show some of the overall context which is communicated to students in the conduct of teaching. An integrated subject content taught in a well reflected overall context, a socialisation content, is crucial in a development of ESD teaching. The result might be an important part of a reflection-tool for teachers in their process of change in environmental teaching. The overall contexts, *the extras*, which teachers are communicating, also concerns democratic issues.

“It does not matter that the authoritarianism is not deliberate. Whenever there is a massive socialisation toward intellectual dependence, how are students suddenly become thoughtful, responsible citizens who habitually question and exercise their reasoning powers with respect to knowledge claims, explanations and decisions? It is in giving serious consideration to that kind of question that the manner of teaching can be seen as a potential link between the here- and- now of the science classroom and the long term value that democratic societies accord to responsible citizenship.”(Munby & Roberts, 1998)

The origins of this overall context, in this study called relations, need further examinations. Teachers are constantly making different kind of decisions, which are commonly hidden in different teaching habits. But before you can start reflecting it is essential to acknowledge these habits, as this will show us how to possibly change them (Wickman, 2004). These results give indicate that it is possible to study and make teachers' ethical starting points for their teaching discernable. For future studies it might be fruitful to develop an analytical tool for researchers to facilitate the studies of the value-based origins for the overall context which is communicated to students by companion meanings in the teaching process (Sund, forthcoming). Content must be regarded as an intertwined relation between subject matter and an overall value-laden overall context (Nyberg & Sund, 2006). In my opinion, it is of great importance to reveal to all stakeholders at school the content communicated to students, and I and many other researchers (Roberts & Östman, 1998; Öhman, 2004) regard this to be a democratic issue. The value –laden origins are important to acknowledge in the process of developing environmental education to education for sustainable development in a well reflected way in the contemporary global discussions during the UN decade of education for sustainable development (UNESCO, 2005).

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