

CIEA 2006

**Learning and sustainability:
correlations, challenges,
concrete ideas from the point of view of
vocational education and economy**

Prof. Dr. Andreas Fischer
University of Luneburg, Germany

Tuesday 15 August 2006

**25th International Course on vocational Training
and Education in Agriculture**



Learning and sustainability: Correlations, challenges, concrete ideas from the point of view of vocational pedagogy and economy

The answers to the question of how to make sustainable education possible come from different understandings of the concept that seem to have nothing in common. One reason for this confusion lies in the relation between the various meanings of the term sustainability. There are structural similarities, even though the subtle nuances between the socio-political and the didactic point of view can not be ignored. That is why – in order to preclude misunderstandings – the different concepts and points of view that are associated with “sustainability” and “durability” have to be clarified first of all.

Durable Development

In discussions with (school) practitioners and pedagogues it becomes clear that the notion of sustainability is interpreted in the sense of durability. The focus here is on the question of how to embed the learning content that has to be acquired in the consciousness of the learners.

Sustainable development (Sustainability)

The basic idea behind the concept is the conviction that for a system to be sustainable it has to continue to exist in the long term. In this respect, the close connections are more than just of terminological nature. The question of what has to continue to exist and what has to be done in order to make a system survive in the long term has to be raised - against the background of socio-politics as well as didactic methodology and from various points of view and being interested in different conclusions and objects.

Discourse on sustainable development

There is a mission statement behind the concept of sustainability as it is used in the socio-political discourse that says that the present generation should satisfy their needs without restricting the next generation from satisfying their needs. At the same time, the idea of a sustainable development is based on the requirements that economic, ecological and social developments should not be separated from each other or played off against each other.

The amount of publications on the topic suggests that intensive reflections about sustainable development are made. However, the concepts available up to now are still very fuzzy, ambiguous and contradictory. Depending on the definition and interpretation of the concept, different political approaches and imperatives for action are formulated. In the mean time, it should be known that the discussion about sustainable development does not end with the effort of preserving duckbill and horsetail.

The idea of sustainability therefore confronts us with a completely new issue. In fact, this conclusion is not new, but it is integrated into the idea of a network, on which the entire concept of the Agenda 21 adopted in Rio is based upon. This kind of mixture of present and future challenges makes a new interdisciplinary dialogue necessary. At the same time it represents a challenge to the entire education sector.

Sustainable and durable development

In the socio-political discourse, the viable development of the world is in the centre of attention, and retinity and responsibility are of primary importance. In didactic, action-oriented concepts, the knowledge about or the capability to acquire competences has become the focus, a shift that in the last couple of years has been more and more justified by systems theory or constructivism .

The socio-political discourse on sustainable development can very well be linked to the didactic point of view (based on systems theory and constructivism). Ecological and social problems are not looked at from an objective point of view, but according to a cultural and time specific interpretation model. Each person perceives ecological, social and economic problems differently, depending on their concept of the world and of nature as well as on their socio-economic, cultural and political aims and behaviour. What is sustainable and what is not is defined by an agreement - a social consensus that is learnt in a socialisation process.

Applied to education this means that it does not (only) exist as an individual's search for identity, but can also depend on the cultural context. On closer examination, methodological-didactic and socio-political sustainability are not only terminologically related. They also overlap or complement each other as far as content is concerned. In order to do justice to the basic idea of sustainable development, the points of view have to be linked so that the two ways of thinking are connected.

What competencies have to be encouraged?

- Instead of an endless wish list, six competency areas that have to be developed and supported in a sustainable education process are enumerated.
- Systemic, integrated thinking; interprofessional knowledge and its application in concrete situations,
- Capability to deal with complex situations, characterised by the interaction of economic, ecological and socio-cultural components,
- Understanding of the structures and the life cycles of the economic circuit,

- Social sensitivity, intercultural competence and willingness to get to the bottom of and take into consideration the global consequences of individual behaviour,
- Communication and consultation competences in order to create networks as well as the capability to deal constructively with conflicts,
- Value orientation in the context of sustainable development such as economic ethics, solidarity, tolerance, sense of responsibility.

The main question now is:

How can a sustainable and at the same time durable development be promoted?

In order to answer this question, one has to assume that both interpretations of sustainability encompass similar intentions and argumentation patterns. Therefore, one can speak of a coexistence that has to be stimulated in order to create synergy effects and to eliminate blind spots. The action-oriented discourse, for example, often does not get beyond considerations on teaching-learning theory, leaves aside questions about content and takes the entity economy/society for granted. There is also the fact that the concept of action orientation as a method is often misunderstood in practice. On the other hand, the discourse on sustainable development neglects the subjective learning processes and the cultural debates.

Sustainable links and connections

An economics education for sustainable development can take up various points: The content-related links, supplements, expansions and changes can be developed depending on the topic. There are many possibilities to arrange “learning worlds” in which the students can deal with sustainable development in their private and professional life. From the point of view of organisation policy, sustainable management concepts offer the potential to make connections. To summarise, the ideas can be focussed on 5 theses which have to be discussed at the CIEA-Seminar (on the 15.08. 2006):

1. In dealing with an education for sustainability, the aim is not to functionalise the educational institutes and their players for external political or social means. The students should rather get the possibility to act creatively in a world of meagre resources and of not dispensed inter- and intragenerational justice.
2. Today, epoch-specific key problems are not dealt with in a sustainable way in education, but in a subordinate way. Because of the marginalisation and isolation of the idea of sustainability, there is an acute need to explain, catch up and develop in practical educational work.
3. In order to adequately prepare the learners for actual and future challenges, a sustainable model of (economics) education has to be developed. This model

should try to bring together economy, ecology, sociology and education in order to guarantee that these elements are no longer considered as being isolated, conflictual or incompatible.

4. Apart from the network inside an organisation, a strong dovetailing between practical educational work and conceptual reflection has to exist.
5. On the path to sustainable education, sustainable concepts will in practice – at least temporarily – exist side by side with traditional, non-sustainable structures so that one can speak of a simultaneity of disparate developments or of multiple approaches.

Conclusion: The realisation of a sustainable, viable (economics) education is closely linked to the development and implementation of a sustainability-oriented management in companies and the economy as a whole. The interaction of education and economy releases a productive diversity and a creative potential that are able to overcome obsolete, rigid organisational forms, contents and methods.

Scepticism about exemplary solutions

What appropriate steps for educational work can be taken from the model of sustainability? Because of the complexity of the subject, easy, fast exemplary solutions have to be regarded with scepticisms. At the same time, there are no remedies or rules for pedagogic behaviour that can be derived from the idea of sustainability. Current links that allow a viable education for sustainable development have to be found. The educational work will not undergo any structural changes if only some new didactic tricks are applied. It is obvious that a fundamental change is inevitable.

Permanent didactic challenges

The discussion about sustainability includes a change in the content, and furthermore also concerns the way of structuring time, the participatory shaping of complex teaching-learning arrangements as well as a performance evaluation. The characteristic feature of a new learning culture is to overcome the linear and mechanistic didactic reduction of the complex reality to clearly structured chains of cause and effect - with the aid of complex teaching-learning arrangements and with the aim of linking product- and process-oriented learning. The self-regulation of learning and the metacognition have to be strengthened; on the whole, the responsibility of learning has to be gradually transferred to the students; this also includes the self-assessment. The so called teaching-learning short circuit that says that all available knowledge also has to be taught, and that everything that is taught also has to be learnt as well as those myths that nurture the believe in the feasibility of learning processes, and harbour the illusion that educational success guarantees a successful (professional) life have to be questioned. In short: Instead of linearization strategies, openness, error probability, fault liability, interaction, systems dynamics and self-organisation have to be allowed and highlighted.

The attention shifts away from mere instruction to arrangements that facilitate learning - as competences cannot be taught. The teachers assume the task of creating learning events, offering information and shaping the learning in a way that the learners are able to and have to build their knowledge in action-learning situations. The aim here is a paradigm change, away from a instruction-oriented educational processes to one that promotes learning.

Sustainable learning worlds

How can an educational process oriented to the idea of sustainability be created that besides specialised knowledge (discipline-oriented) highlights integrated (interdisciplinary) working, and at the same time promotes self-organised learning? It is possible to confront the students with complex issues along sustainability-oriented complex teaching-learning arrangements. In such learning worlds, sustainable working and/or business processes could, for example, be simulated. At the same time, they are the appropriate place to create and test participatory, action-oriented methods. This would correspond to the pedagogic-psychological conclusions that learning has to be understood as an active, self-directed, constructive and co-operative process.

Such an interdisciplinary, problem-oriented teaching-learning offer corresponds to the intention of integrated learning, and therefore meets the requirements of an education in which the self-organisation, reflection and personal responsibility of the individual is in the centre of attention.

Sustainable content

These learning worlds are only one key word on a long “sustainability wish list”: Much would be achieved if sustainable content and participatory methods were increasingly incorporated into the daily routine, for example in the form of project work, future workshops or future conferences, product line analyses, sustainable audits or subjects such as “syndromes of global change”, “sustainable region”, “environment and development”, “mobility and sustainability”, “energy and sustainability”, “agriculture and sustainability” “health and sustainability”. The list of relevant topics/content is not exhaustive. No matter what contents you decide on, they should be suitable to offer the learner the possibility to find an answer to the following questions:

Is the topic suited to promote sustainable learning?

- How much retinity, complexity, process creation, insecurity as well as communication does this topic accept or are these subjects discussed?
- Is the strained relation between traditional thinking (economic rationality) and the idea of sustainability (sustainable rationality) discussed?

Economic and sustainable rationality

In educational work, the two ways of thinking economic and sustainable rationality should not be considered as antipodes. In fact, the individual should have the possibility to develop a rationality that does not pursue the interests of a specific institution, but contributes to decision-making by taking into account all demands and concerned institutions. Therefore, a sustainable rationality has to be seen as the competency to distinguish and meet various needs.

In sustainable and non-sustainable behaviour two different “paradigmatic worlds” are reflected. This is noteworthy, because due to its complexity and its cognitive as well as emotionally high requirements paradigmatic thinking is very rare in educational life. Even though one of the aims of educational work consists in empowering the individual to learn how to deal with diverging interests and requirements, the paradigmatic debate is neglected in the curriculum and in didactics and methods.

A continuous debate

The multifaceted notion of sustainability seems to be inconsistent with the need for unambiguity and security. The concept provides points of reference, but no fixed rules on how to get ones bearings. The complexity and fuzziness of the idea of sustainability have to be grasped, organised and systematised. However, this should not be done with the aim of managing and archiving them in the manner of a book-keeper, but of working with them and deducing possibilities for action from them in order to achieve sustainable, viable development.

The implementation of sustainable education is a very ambitious and challenging task – but just because it is characterised by ambiguities and contradictions it also offers scope for action and the possibility to be creative. The fragmented and mixed character of the idea, with all the imponderables inherent to educational processes, has to be taken up and reflected upon . Education for sustainable development in this sense has to be understood as a continued process of debate on a complex subject.

Andreas Fischer

Since the summer semester 1998, Prof. Andreas Fischer, Doctor of Economics and Business School Graduate, has been teaching didactics of economics at the Department of Business Administration at the University of Luneburg. Since 2004 he has additionally been working as representative for vocational and economics pedagogy.

Andreas Fischer was born in 1955 in Dannenberg. After the Abitur (A-levels) in 1976 he went to Berlin. There he studied economics pedagogy and German as a subsidiary subject. In 1983 he received his diploma as business school teacher. After several years of practical managerial experience, he made an internship at the Oberstufenzentrum Banken und Versicherung (sixth form centre for banks and insurances) from 1989 to 1991. At the same time, he finished his dissertation on a subject of consumer policy (1990). From 1991 to 1997 he worked as a scientific assistant at the Freie Universität Berlin. Immediately after he had successfully finished his postdoctoral thesis, he returned - after more than two decades of living in Berlin - to the vicinity of his home town, Luneburg.

Since the beginning of the 1990s, he has been working on questions of sustainable development and vocational education. Accordingly, he is intensively engaged in developing a sustainability-oriented concept for economics pedagogy and didactics - besides working on the current topics on vocational and economics pedagogy as well as didactics at the University of Luneburg.

Among other things, he carried out the following projects:

- EU-Project "Action-oriented vocational environmental education" of the society for vocational environmental education. (scientific management, 1996-1998)
- BIBB (Federal Institute for Vocational Education and Training) research project "Environmentally compatible vocational education in the New Laender - measures to promote the quality of vocational environmental education". Development of training units for the vocational training in commercial professions. (1997)
- Teaching and interdisciplinarity. Subproject in the framework of the application-oriented research project "Agenda 21 and the University of Luneburg". (project manager, 1999-2001).
- Marketing and communication. Subproject in the framework of the application-oriented research project "Agenda 21 and the University of Luneburg". (project manager, 1999-2001).
- Recommendations for an eco-audit at schools. Federal Ministry of Education and Research. (1999-2001)
- Environmental education for sustainable development through co-operation

between schools and companies. Institute for ecological research and education (incorporated society) Cologne. (scientific management; 2000-2003).

- Tradition and innovation in the discourse on economics pedagogy. Supporting institution: Ministry for Science and Culture of Lower Saxony (Germany). Hannover (2002-2003)
- Sustainability indicators in vocational institutes - feasibility study. In cooperation with the Institute for environmental protection in vocational education. Hannover (2003)

At the moment, Andreas Fischer is working on the Federal Working Committee on vocational education for sustainable development. Furthermore, he is chairman of the society for vocational environmental education (incorporated society) and manager of the German society for economics education (incorporated society) (DeGoeB) (<http://www.degoeb.de>) as well as member of the board of sowi-online (incorporated society) (<http://www.sowi-onlin.de>). In this context, he is co-editor of the online magazine "Online Journal für Sozialwissenschaften und ihre Didaktik" (online magazine for social sciences and their didactics") (<http://www.sowi-online.de>)

In November 2005, the German Commission for UNESCO honoured the education for teachers at vocational schools at the University of Luneburg as an official project of the UN Decade on Education for Sustainable Development.