Proceedings of ENOAT Meeting
Tartu, Estonia

28-30 August 2009

Charles Francis, Ewa Rembiałkowska, Peter von Fragstein, and Anne Luik

Editors

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Editors' Introduction

The annual Meeting of the European Network of Organic Agriculture and Agroecology Teachers (ENOAT) was convened in August 2008 at the Puhajarve conference center 45 km southwest of Tartu. The organizers from the Estonian Agricultural University were Anne Luik and Ragnar Leming, who provided an excellent venue for the meeting and a valuable field excursion to organic farms and a restaurant with local foods.

The major topic of the Meeting was a focus on Experiential Learning and on Electronic Information Resources and potentials for information sharing. A schedule of the Meeting topics is included at the end of the proceedings.

There were 24 people attending the Meeting from 18 countries. A list of participants is included at the end of the proceedings.

The proceedings include papers on new innovations in agroecology education at UMB in Norway, and the role of education for organic and conventional farmers in Poland. There is a summary of the results of an experiential learning workshop that was conducted using small group interaction and an evaluation of problem based learning as a prime method for moving into the field and interacting with clients. A discussion of open cases concluded this interactive session. The proceedings conclude with a summary of an evaluation conducted in plenary session where the moderator posed two questions: 1) what are the benefits of participation in the ENOAT meetings, especially based on the current conference in Estonia, and 2) how can time be spent more profitably in future meetings? There were eleven key points gleaned from notes on this final session, and two general conclusions were 1) to spend more time in small group discussions and less on formal presentations, and 2) to seriously explore concrete steps to invite more participation in the ENOAT meetings by bringing in creative people and ideas from more universities. There was discussion but no conclusion on creating a more formal organization with membership and fees, a topic that recurs each year in the ENOAT meetings.

Charles Francis, Ewa Rembiałkowska, Peter von Fragstein, and Anne Luik, editors

New Innovations in Agroecology Education at the Norwegian University of Life Sciences

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Abstract

Agroecology as the ecology of food systems has been integral to the graduate programme in Norway for the past decade. Evolving from three PhD courses in the mid-1990s, the current MSc autumn course is the first semester of a two-year programme that includes courses in systems thinking, integrated crop/animal systems, and holistic methods for analyzing and evaluating the sustainability of food systems. Multiple perspectives are used to examine the production, economic, environmental, and social performance and associated impacts of farming and local food systems. Natural science and social science methods are combined to provide more insight on farmers' goals and decision making, as well as the attitudes and future plans in communities that are concerned about food quality, food security, and food sovereignty. The course organization continues to evolve in response to student evaluations, and the enrollment is steady at 20 to 25 new students each year.

Introduction: Brief History and Evolution of Agroecology Learning

The current agroecology activity at UMB grew from the experiences in three PhD courses (1995-1997) held in Norway on an organic dairy farm near Stange. Starting with focus on farming systems, the context expanded to consideration of food systems in all their complexity (Lieblein et al., 1999), and thorough evaluation of the courses suggested a valuable course for future educational planning (Lieblein et al., 2000). A pilot course in spring term 1999 included students from Norway, Denmark, Finland, and U.S.A., with a carefully planned sequence of lectures, demonstrations, hands-on experiences, and a major project to design an education/demonstration farm at an old school then belonging to a non-profit group 10 km east of the university. Based on positive feedback from students, we moved ahead to expand student numbers and design two formal courses for autumn semester. One major decision that evolved from this experience was to define *agroecology* as *the ecology of food systems*, including study and evaluation of the entire process from use of natural resources through production, processing, marketing, and consumption (Francis et al., 2003).

Autumn Courses in Agroecology

What evolved from this initial experience were two courses in autumn term, A*groecology and Farming Systems* (PAE303) and *Agroecology and Food Systems* (PAE303). These courses have attracted 12 to 25 students in each of the last nine years. Courses started on the farm, with farmer interviews and farm transect walks that gave students a first-hand experience. This was summarized in mind maps, diagrams of nutrient and economic flows, and use of other analytical tools. A major project in the first course was an in-depth analysis and evaluation of farms by teams of 3-4 students who visited the farms twice, recorded the goals and philosophy of the farmer and family, assessed internal resources on the farm, examined production systems and marketing strategies, and designed scenarios that could help the farm families meet their goals.

In the second course students worked with rural communities in a study of their local food systems. They interviewed people to develop a sense of the long-term goals of farmers, food handlers, and consumers about importance of local foods, potentials of organic foods, and interest by consumers in where and how their food was produced. With an inventory of local production resources, a general idea about local food consumption, and a consensus to the extent possible of goals for the future food situation in the community, student teams were able to design feasible scenarios for people in the communities to reach their goals. Examples of goals included “increasing production and sales of organic food”, “replacing food imports with local production”, and “improving the local economy through increased business and cycling of currency among the citizens.” Students report that they learn plenty of new things through these contacts with local community clients, and appreciate the complexity of both farming and the food system as a result of the experience. In turn, reports we have from farmers and from communities describe how they appreciate the student teams as bringing fresh ideas and new questions to help address the larger challenges for the future.

There have been over 150 students in the courses during the first ten years, both programme students in the two-year MSc and guest students who participated only in the autumn semester. We collected a voluminous amount of evaluation information, mostly through the reflection or “learner documents” that each student submitted at the end of each course. Many of our observations have been reported (Francis et al., 2001; Lieblein et al., 2001, 2005), including an emphasis on the capacities of graduates as one of the key goals of the program. One of the challenges we observed was that teams were pressed for time to do a credible analysis of the farm in only eight weeks, and likewise were facing a very short deadline to accomplish the community analysis and recommendations in the next eight weeks. Thus we decided to test another learning model.

Integrated Model of Food and Farming Systems Learning

In response to student concerns about the rapid pace of the eight-week modules, and based on our own evaluation of their field work, we decided to combine the two modules into one semester-long course with one project in the field and community for each team. In their learner documents and group presentations, students remarked that the short time for field visits, collection and analysis of data, and preparation and presentation of reports did not allow them sufficient time to do a high-quality job on any of the tasks. Also, the very brief visits to farm and community did not allow them to go much in depth in the project activity. For this reason, we decided to integrate the modules into one course in *Agroecology: Farming and Food Systems*.

Another factor in the decision was the successful cooperation in autumn 2008 with the new *Økoløft Programme* in Norway that provides funds to communities to find ways to increase production and consumption of organic foods. There is a national goal to increase the level of organic food to 15% of the total by the year 2015, and in fact there has been only limited national support for research, education, and promotion to help implement this goal. *Økoløft* is a two-year project designed to encourage individual communities to enhance organic food consumption, with details of implementation left to each participating site. In 2008 two of these communities invited our student teams to use their locations as project sites, and one of them provided limited finances to help defray costs of travel. They were pleased with the results, and based on a presentation by Geir Lieblein in February 2009 four communities offered their sites for student team projects in the current year. They have even offered support, and about 50% of the total costs of field work (>NOK 50.000) has been provided to our educational programme. This was an additional incentive to redesign our autumn semester.

The new schedule has students on campus for one week of orientation, preliminary lectures and discussions about systems thinking and application to field projects, and planning for the semester. Then students spend a full day working on farms and two days visiting with farmers and doing a preliminary analysis of farming and food systems in the Stange Kommun in Hedmark district. Next they embark on a semester-long project with each team working with a key client and other people – farmers, processors, marketers, government officials, consumers – in one of four participating communities in Norway. Students interview all these players in the farming and food system, conduct an evaluation of information using SWOT analysis, rich pictures, force field analysis, and other soft systems tools, and then design a series of potential future scenarios to help the farmers and communities reach their goals. They will spend two full weeks in the communities, one week in September and another in November, in order to collect the needed information.

Each team will prepare two written documents, one for the farmer client and one for the community, and then present these to their classmates and instructors in the learning community. Each student prepares a learner document that chronicles their personal journal through the learning landscape. These should be personal, but not private, and we intend the activity to provide a structured opportunity for reflection and summary of the total learning experience. During this same time, we expect that clients will read the team documents and provide us with some feedback on content, on scenarios, and on the overall utility of the project to their communities. The new schedule builds on the concept of using open-ended cases, where results are not known to instructors nor to clients, and the students join a learning community to help seek scenarios that will be useful for helping clients reach their goals (Francis et al., 2009). Although this is the first semester that we have tried the combined class programme, it appears to be working well and we will report on results at a future ENOAT meeting.

Evaluation and Future Plans for the UMB Agroecology Programme

The new schedule and activities with Økoløft communities will be thoroughly evaluated through the client documents, the learning documents, and feedback from participating clients in the four communities. These several windows on the learning landscape complement our interactions with individual students and their presentations to the class. Future directions will depend on this evaluation. Several key elements identify this programme in agroecology education as perhaps unique from others available for MSc students.

- Work on the farm for practical experience and orientation to the day-to-day challenges faced by farmers in Norway: there are internships required in other educational programmes, but this opportunity for students is directly tied to their preparation for multi-factor analysis and systems thinking about complexity and uncertainty in designing integrated farming systems.

- Direct project work with clients is integral to the learning, providing students with exposure to contemporary challenges in the farming and food system. Students interact with farmers, processors, marketers, consumers, and government officials who are intimately involved with the food system.

- Integration with ongoing development projects include their work with the current *Økoløft* programme communities, helping them to assess progress toward their stated goals, and providing potential scenarios for the future that would help each community contribute to the national goal of 15% organic food production and consumption by 2015.

- Learning as part of an international team, for example in 2009 there are 22 students from ten countries, assuring that each team for field projects includes a multinational group with varied prior cultural and educational experiences. English as a common language in the courses continues to be a challenge to those less well prepared, but this is part of the learning experience.

- Publication of evaluations of the learning experiences in this course and in the two-year MSc programme have given some prominence to the Agroecology degree at UMB, and we continue to summarize results of evaluation and project new ideas for design of future learning landscapes in agriculture and related fields. Several publications have already been cited, and additional ones may be consulted as examples (Lieblein et al., 2005, 2007; Lieblein and Francis, 2007; Waldenström et al., 2009)

Based on the popularity of the autumn course for students, both those who come as guests for one semester as well as those who participate in the entire two-year MSc programme, we conclude that this is an attractive and valuable learning experience. We continue to innovate, to make changes based on student feedback, and to summarize and publish results. There have been 30 refereed journal articles and 12 book chapters plus numerous proceedings papers and published abstracts from this programme over the past decade, and we intend to continue to summarize and share results to the international community.

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Role of education for organic and conventional farming in the region of Central Poland

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Abstract

Knowledge and know-how are among the most important factors in many branches of national economy. The same situation applies in organic agriculture. Research on educational methods were undertaken in Kujawsko-Pomorskie Province, where the oldest organic farms in Poland are located. Surveys reveal that lack of professional knowledge in organic agriculture is seen as an important obstacle in running a farm. The process of conversion is less difficult for farmers with higher education. Moreover the direction of education is more important for proper farm management than the level of education. To succeed in running organic farms, the farmers emphasised two important issues: merit related preparation and good contacts with other organic farmers. Unfortunately farmers from this region do not regard the extension service as a viable source of information.

Key words: Organic farming, education, extension service, development, Central Poland

Introduction

Modern agriculture demands knowledge. Therefore, the needs of modern agriculture can only be met by farmers with the proper education (Klepacki, 2005). Klepacki states that Polish farmers make mistakes in the technology of production due to lack of knowledge about modern farming practices. Moreover, knowledge and ecological awareness are particularly important not only for organic farmers (Runowski, 1995) but for consumers, processors, teenagers and children as well (Lampkin, 2002; Caporali, 2004). Education and the age of the farmer play an important role in applying innovations on the farm (Uliszak, 2008). For organic farmers there is a dependency between the level of education and the economic outcomes according to Stawicka and Wołoszyn (2007). The farmer should know the basics of sciences such as biology, chemistry, technology, techniques, economics and sociology. The theoretical basics should go in tandem with practice. Only this combination between the traditional and scientific knowledge makes the development of organic farming possible (Kucińska *et al*., 2007).

Materials and methods

In 2008 and 2009 a survey was conducted among 100 farmers (50 organic and 50 conventional) from the area of Kujawsko-Pomorskie Province in Central Poland. Two comparable questionnaires were prepared and used: one designed for organic and one for conventional farmers. In the study farmers around the biggest cities of the region, Bydgoszcz and Toruń, were involved. The questionnaire was conducted as a direct interview with farmers. There were open (descriptive) and multiple choice questions included.

Results and discussion

The average age of the organic farmers was 48 years, whereas conventional farmers were younger by 8 years. Organic farmers up to age 40 comprised 26 % of all organic farmers. There were no farmers younger than 26 (Figure 1). In the group of to 26 – 35 years there were 39 % more of the conventional farmers whereas more of the organic ones were in the age groups from 41 to 61.

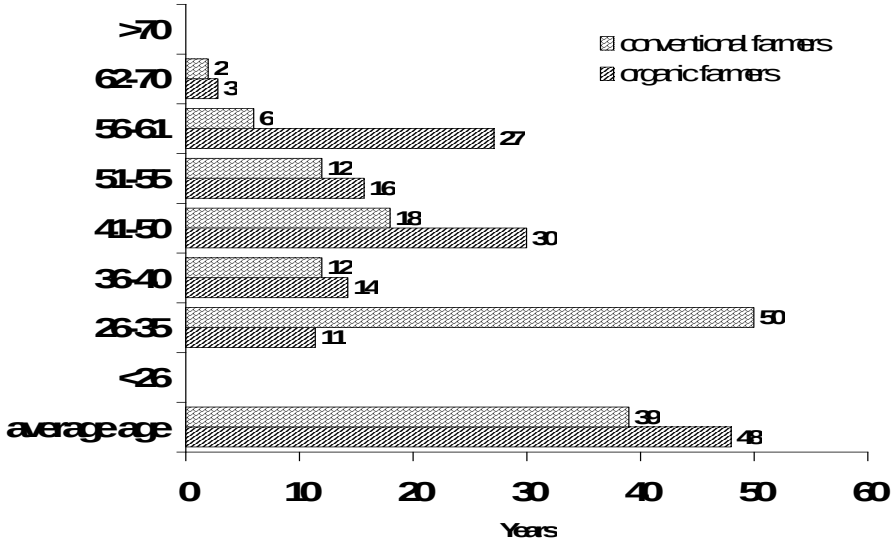

Figure 1. The age of the farmers in the interview

The experience gained during their work on the farm gave the farmers who were interviewed the strong field and practical basis to create a list of recommendations for farmers who would like to convert to organic agriculture.

Table 1. The recommendation in running an organic farm. [%]

Recommendation	% of responds
Merit-related preparation/courses	45
Contacts with other farmers	20
Familiarity with obstacles	19
Soil fertility analysis	6
Good crop rotation – alfalfa	6
Care for content of soil organic matter	4
Acquaintance with regulations	-
Contact with extension service	-
Analysis of market demands	-
Familiarity with issues concerning ecology farming	-
Weed control	-
Cessation of using pesticides and artificial fertilizer	-

Farmers wrote down the observations according to their own experiences. Forty-five percent mentioned that at the initial stage of conversion it is most important to have merit-related courses that help prepare them to use the new cultural practices of production. Then, 20 % believed that being in contact with other organic farmers and getting familiar with obstacles were important. No one stated that the contact with the extension officer is crucial. Also nobody said that checking the demands of the market are the most important (Table 1).

In the process to improve Polish organic farming conditions, a very important role should be played by extension services (Kucińska *et al.*, 2009). Data gained from this research showed just the opposite in practice. Although available advice on organic farming in the Kujawsko-Pomorskie Region is the oldest in Poland, today's organic farmers do not find this important. Choosing between family support or help from advisors or colleagues, only 18 % of those surveyed claimed that at the beginning of the conversion it is most useful to get help from advisors. Support from the family was significantly more important, graded by 58% of respondents, and then advice from colleagues was useful for 25%. Also, in the personal interviews the farmers expressed that the acceptance of their families is the first and basic factor in running an organic farm (Table 2).

Table 2. Factors supporting the process of conversion

Factor	% of responses
Family support	58
Colleague advice	25
Advisory service	17

The results from the questionnaire showed that 58% of organic farmers had secondary education as highest level; and about 40% possess vocational education. Only one organic farmer had primary education. There were no cases in the surveyed groups where somebody had not finished primary education. (Figures 2 & Table 3).

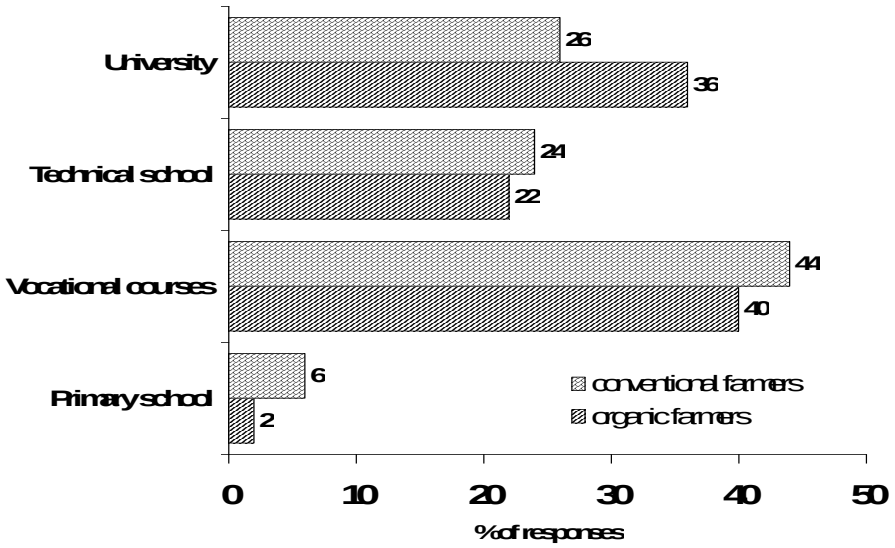

Figure 2. Education among organic and conventional farmers.

One half of them had agricultural education. The conventional farmers were less well educated than the organic farmers. People with higher education were 10% less in this group in comparison with organic farmers. Almost all of them (78%) possessed at least vocational training, considering both vocational and technical education (Figure 2). Sixty-two percent had agricultural education, which is a higher share compared to the organic farmers (Table 3).

Table 3. Agricultural education among organic and conventional farmers. [%]

The scope of education	Organic farmers	Conventional farmers
Agricultural	50	62
No agricultural	50	38

The level of education appears to influence the entrepreneurship and the agricultural culture. Thirty-four percent of organic farmers with vocational education as their highest level found the conversion of their farms to organic to be either difficult or very difficult (Table 4). Farmers with higher levels of education found the the conversion easier to achieve. However, the correlation between the level of education and difficulties in the conversion period should be further examined. The study was not designed to study this issue, and the statements 'difficult' and 'no major difficulties' can have been interpreted quite freely and subjectively by the respondents.

Table 4. Evaluation of the conversion period related to level of education. [%]

	Very difficult	Difficult	No major difficulties	Rather easy	Easy
Primary	0	0	0	0	0
Vocational	10	24	4	0	0
Secondary	6	18	8	0	0
Higher	2	12	10	6	0

Summarizing the results from the survey, we noticed that there seems to be a relation between the type of education and the assessment of the difficulty during the conversion period (Table 5).

Table 5. Evaluation of the conversion period related to the type of education. [%]

	Very difficult	Difficult	No major difficulties	Rather easy	Easy
Agricultural education	8	24	12	6	0
No agricultural education	10	30	10	0	0

Although one-third of the farmers with agricultural education (32 %) assessed the conversion process of their farm as difficult or very difficult, significantly more of the farmers with no agricultural education found the conversion difficult (40 %). Because our

hypothesis was that agricultural education can ease a conversion, the aim of the next questions was to find out the willingness to get education and the scope of the presumptive training of the organic farmers. We found that 82 % stated that they need further agricultural training (Table 6). But none of organic farmers said that the lack of proper agricultural education is the main obstacle in running the farm (Table 7). Six percent of the organic farmers answered that they do not need further education.

Table 6. The need of the further education among organic and conventional farmers.

The answer	% organic farmers	% conventional farmers
Yes	82	56
I don't know	12	26
No	6	18

The farmers were also asked to provide factors that have a negative influence on their farms. The producers stated that the income they get from their farms, which is very often supplemented by income from secondary jobs and governmental subsidies, is not enough to secure the financial farm viability. The result is low investment and the systematic impoverishment of machinery and buildings. This phenomenon affects 44 % of those surveyed, who consider the lack of the capital as the most important factor limiting their production (Table 7). Other limiting factors are lack of labour force – mentioned by 18 % of the organic farmers; problems with selling the products (10 %), and low soil productivity (4 %).

Table 7. The obstacles in running an organic farm. [%]

Obstacle	Rated by organic farmers
Lack of capital	44
Lack of working force	18
I do not want to do it anymore	18
Difficulties in selling the products in good prices	10
Others	6
Low productivity of the soil	4
Running the farm is a bad business	0
Lack of knowledge	0

Conclusions

The results show that for the development of the farm, agricultural education is more important than the general level of education. Organic farmers in the area of Kujawsko-Pomorskie Province consider the lack of capital, labour and difficulties in selling organic products with premium price as the basic factors limiting the development of organic farming.

There is a need to solve a problem of more useful advisory service for organic farmers. Some actions are needed to convince farmers to recognize that expert advice can significantly facilitate the management and thus improve the economic situation of farms.

To succeed with the conversion of the farm, the organic farmers mentioned that it is important to be prepared with merit-related programs. To give farmers help in preparing and conducting the conversion process, the help of advisors should be both demanded by farmers and helpful.

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Experiential Learning Workshop

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[ENOAT Meeting 28 – 30 August 2009, Tartu, Estonia]

"Learning from experience plus reflection = how to successfully move students from classroom to reality"

"Learning by doing, or extracting meaning from experience; this is often called action learning, cooperative learning, or service learning."

"To present a lecture about experiential learning is an oxymoron"
[a combination of two contradicting terms, or a paradox]

Abstract

A participatory workshop on experiential learning was organized as part of the ENOAT meeting in Tartu. First the participants shared their individual experiences related to involved learning situations where students were able to draw from their past studies … inside and outside the classroom. After this we pulled out and summarized key questions that would help us analyse how and why these experiences were valuable. Then the group discussed the most important issues in how these experiences could be used and validated in our agroecology and organic farming teaching environment. An 'open-ended case method' was presented that has been used in the Nordic Region and in the U.S. Lastly, specific suggestions on how to implement more experiential learning were discussed and listed. We recognized both the opportunities and the challenges of using new types of classes and methods of instruction in our various universities.

Introduction

To further develop ENOAT as a learning network and avoid the contradiction of a "lecture about experiential learning", we designed a workshop to briefly share and discuss personal experiences from teaching and evaluate the degree of experiential activity that is involved in each. The moderator prepared a mind map during the presentations including the degree of personal involvement of students and the role of the instructor in guiding the process. The mind map that was constructed in this session included these terms supplied by the group: *action, field learning, application, experience, practical work, hands-on,* and *case studies*. We then moved to a session on sharing of previous experiences.

Personal Experiences with Fostering and Building Learning Communities

A number of people shared experiences they had in organizing the teaching environment, and what specific actions by the instructor appeared to help in building the learning community:

- Joao (Azores): “It is valuable to gather local information from clients and their immediate problems, to combine this with student experiences, and to integrate these multiple sources of information into a picture of the whole. Through multiple interviews students begin to home in on the most critical and priority questions, learn what is important, what is needed, and what is new in the context of contemporary agriculture.”

- Kasha (Poland): “Based on the results of interviews by students of 63 organic farmers, students conducted a SWOT analysis and found among other results that there is a huge gap between producers and consumers.”

- Ewa (Poland): “Students are sent as groups to collect data from clients in the field about food systems, and to bring this back in for evaluation and analysis; in general, students are much better at analysis than at synthesizing and interpreting the results. Role play exercises are used in class, and these are enhanced by the international composition of groups.”

- Elite (Lithuania): “It is a general observation in Lithuania that students in the classroom are often asleep, and that in the field they are *alive*.”

- Juomi (Finland): “An important step is creating the groups, and there is a vital need to establish norms for group activity, to provide them with tools to spur cooperation and communication.”

- Jim (Netherlands): “The process of group dynamics is itself a part of the learning, and this is best learned by groups on projects who are in implementing activities in the field – a type of experiential learning in dynamics.”

- Vibeke (Denmark): “The process of promoting learning by doing is helped by teaching with someone else who is more adventuresome; it is essential to keep things active and to generate ideas in class. “

- Cor (Netherlands): “It is good to help students begin to develop tools that can be useful to implement ideas, since these may not be a part of previous education.”

Evaluation of Experiential Learning Examples

Some of the questions that could be useful in guiding the evaluation of our practical examples or helping us to set criteria for value of specific activities are:

- What is the degree of instructor lecture (deductive learning) and level of student involvement in personal discovery in this activity?
- At what level are students doing exploratory or independent learning, as compared to instructor-driven learning?
- Are the students exploring lower-level, factual or skill-based questions or higher-level, systems, or process-based questions?
- Do the issues that students are exploring have answers that are known to the instructor, or is the educational environment a shared-learning experience with answers not yet known?
- Is the final product the discovery of a fixed answer in a specific context, or is this a series of potential scenarios and their impacts?
- How is the experiential learning process evaluated, and is there a quantitative way for instructors to assess learning and provide adequate feedback to students?
- Who has the responsibility for learning?

Key Questions in Implementation

During the discussion, a number of questions arose that we need to address as the process of experiential education is introduced into our teaching of specific courses. Some of these relate to the challenges of facilitating group interactions, and several relate to available financial resources:

- How much “classical teaching” should be incorporated into a program of experiential learning, in order to establish a viable balance between the two?
- Is experiential learning just as applicable in large classes as with smaller groups, and how can this approach be used in the large “lecture” class? Related to this, is what size of group is considered “small and effective” for experiential learning?
- Are there methods for Problem Based Learning to be more focused on specific issues, as an alternative to the rather global scope of many systems-type questions?
- How do we find more resources to be able to use experiential learning in the contemporary university situation where fund are always limited?
- What are some creative ways to get farmers involved in experiential learning if we do not have additional support for them?

- What is the main mission of teaching, and how can this be enhanced by alternative methods such as experiential learning?

Open-ended Case Studies: an Example from Norway and the Midwest U.S.

A method for case study learning from Norway that is used in the *Agroecology: Ecology of Food and Farming Systems* course and also in *Agroecosystems Analysis* in the U.S. Midwest was presented as one example of experiential learning. This has been used for the past ten years in both places, and has proven valuable to students and exciting to instructors. In general, the open-ended case approach involves evaluation of whole-farm systems or community food systems where there are current challenges that have not been solved. Students work with their clients – farmers and others in the food system in the community – to uncover the goals and philosophies of the key players. They proceed to uncover as much information as possible on the current system, the local resources available, and the willingness of people to change. Putting these together with the goals of the farmer and/or the community, they develop alternative potential future scenarios that will help clients meet their goals. These are called "open-ended case studies" because the results are not known to the clients, to the instructors, or to the students. All work together to seek viable ways to achieve a future wanted situation. The contrast between conventional decision case studies and the open-ended cases is shown in Table 1. A paper on this topic has been accepted for publication (Francis *et al.*, 2009).

Specific Ideas on Experiential Learning

Based on small group interactions, a number of specific ideas emerged from the ENOAT workshop participants about improving experiential education. These are based on individual ideas of instructors after a number of years of experience in the classroom. They include:

- have students work on farms as part of the educational experience
- promote both student and teacher exchange to broaden everyone's horizons
- evaluate farms with an on-farm checklist developed and used by students
- give students full responsibility for problem solving
- expand the community knowledge base by having students conduct outside interviews
- teach courses with faculty teams and do more trading of lectures across classes
- conduct courses with much more time in seminars and much less in lectures

- groups should be mixed by country of origin, gender, and previous experiences
- instructor should present provocative topics, and play the devil's advocate with teams
- structured reflection sessions are valuable to learning
- allow students to self organize in groups, since often they are averse to group learning
- do more sharing of concrete teaching ideas in future ENOAT meetings.

Table 1. Comparison of conventional problem-based learning using case studies and open-ended learning strategies with practical situations in context of agriculture.

	Conventional learning	**Open-ended learning**
Goal	Develop solutions from a pre-determined situation	Envision potential solutions to real-world situations
Process	Follow a series of defined steps to uncover known solutions	Follow a discovery process to envision alternatives
Information	Known information revealed in logical/sequential manner	Case has contextual background, students pursue needed info
End Product	Rational solution that may correspond to actual situation	Multiple possible future scenarios and their potential impacts
Type of Learning	Closed learning to seek what is known to instructor	Open learning by students & instructors to explore unknown [co-learning paradigm]
Evaluation of Learning	How closely does the solution relate to the instructor's "real " answer	How creative are future scenarios and evaluation of impacts by instructor and student
Ownership of Learning Process	Instructors who know the answer and determine student success	Students own the learning and set their own criteria for success
Overall learning culture	Conventional search by students to find fixed answers	Open-ended search by students & instructors to develop future potential answers & impacts
Institutional setting	Stimulus from teacher and response from student in traditional relationships	Multiple sources of stimulus, continual interaction to seek common goals

Source: Francis *et al.*, 2009

Conclusions

From observing the interactive workshop on experiential learning, it was obvious that this was an activity that generated a high level of interest and participation. The practical nature of questions and examples suggested that future ENOAT meetings should include more of this type of workshop as compared to lectures or even inspiring power point presentations. During the final evaluation on Saturday afternoon there were many who mentioned the value of interaction and experiential exchange in these workshops. A similar response was given by the participants during the ENOAT meeting in Pieve Tesino in 2007. It should be noted that some form of interactive workshop has been a part of each of the ENOAT meetings since the sessions in Mikkeli, Finland in 2003, yet to date this is still a minor part of the overall two-day program. We should carefully assess the interest by workshop participants in planning future workshops and seek ways to maximize interaction and participation by everyone in the group, and not just a few dominant players. We can recall the interactive sessions that led to publication of the 2007 proceedings, where we explored *Teaching and Research in Agroecology and Organic Farming: Challenges and Perspectives*, and that most of the energy was generated by the small group meetings (Caporali *et al.*, 2007). We should be doing more of the activities that can only happen when we physically meet, to create new knowledge regarding agroecology and organic farming teaching and learning across country boundaries in Europe. We need to pursue this model.

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E-Learning as a tool to improve social awareness for organic agriculture

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Abstract

The Magna Charta of the European University states that the University is a structure that "produces culture through research and education". Unfortunately, if the knowledge produced is not made available and accessible to everyone, produces few benefits. Most of the innovations made in the agricultural sector remain confined to few people. Their diffusion is made accessible only to experts throughout education, seminars, conferences or scientific journals and heading for a format public. Especially those who should benefit most, the “average consumer”, more often remains isolated. For this reason, it should be tried to develop and improve the diffusion path trying to involve the largest number of people not implicated in the sector. One of the channels of information which in recent years is becoming increasingly spread is Internet. His accessibility and ease of use does not discriminate in any way the availability of information. Big potential related to this goal is the E-Learning.

Keywords: Sharing Knowledge, Consumer, Food System, Decisional Process

Introduction

In the 1970s and 80s interest in and consumption of organically grown agricultural products were restricted to small niche markets, with produce usually supplied locally. However, in the last two decades, consumers’ perception of food has greatly changed, focusing more and more on food safety, environmentally friendly and ethically sound production (Codron *et al*., 2006). In the mid 1990s, a series of food safety crises, such as mad cow, blue tongue, and foot and mouth diseases, as well as avian flu, and workers’ rights scandals relating to the working conditions in factories in developing countries, have raised awareness in consumers about environmental and ethical issues related to agricultural production (Codron *et al*., 2006). Consumers started to pay more attention to what they consume and the repercussions of their consumption habits. Although there is generally some knowledge and awareness about organic agriculture,

consumers are not conscious of what organic products really are and what is involved in producing them. Even worst, the many sources of sometimes misleading information appear to overwhelm today's consumers, giving competing and sometimes conflicting signals that only help to confuse consumers. In fact, even if consumers understand the broad issues regarding organic foods, many of them tend not to understand the complexities and soundness of organic farming practices and quality attributes of organic food. In particular, the environment and social attributes of organic agriculture are lost to them, and other features such as health and food safety are also not easily conveyed nor are they easily defined. To support the growth of the organic production sector and increase consumers' awareness of it's benefits, it is important to communicate how environmental and social issues are dealt with in organic agriculture (Wheeler, 2008). Aside from vague ideas about not using pesticides in production, most consumers have no idea of what the differences between organic and conventional foods are. This is due to a lack of reliable, available and accessible information. Basically, all the information on organic agriculture is produced for the main actors involved in the farming and food system chain. Furthermore, research output is confined to scientific journals which, aside for being difficult and expensive to access, are written in scientific jargon, which is hard for the average citizen to understand. As stated in the "Magna Charta Universitatum", which describes fundamental values and rights of Universities, the University is a structure that both produces and should spread knowledge to younger generations. This knowledge should be accessible to everybody, especially the average citizen, who is the main stakeholder when innovations brought about by research are implemented. For this reason, it should be tried to develop and improve the diffusion path between University and others organization trying to involve the largest number of people not implicated in the sector. One of the channels of information which in recent years is becoming increasingly spread is Internet. His accessibility and ease of use does not discriminate in any way the availability of information. These informations are set up for developing and improving the society facing with changes and transformation. Rapid change usually necessitates the acquisition of new skills, new knowledge, and new practices. Training and life-long learning are therefore a key competitive imperatives. E-Learning becomes in this view a tool to improve these topics by mean of knowledge transfer, communication and decisional process.

Improving Knowledge Transfer

Academics define information as a set of data, facts, and figures that have been processed in such a way for becoming meaningful. When information is applied to do something globally related, it is said to have become knowledge (Mchombu, 2004). The construction of knowledge is addressed at the improvement and security of humanity. Universities are the highest source of knowledge construction. Unfortunately the knowledge generated by Universities is seldom transferred directly to citizens or consumers. The knowledge flow usually arrives to the consumer step by step without any meaningful feedback from consumers to University. There is a gap of information transfer for closing the cycling and the construction of knowledge (Fig.1). A way of improving consumer awareness of and involvement in decisions to invest in organic

agriculture and in research related to it could be the development of an E-Learning platform aimed at diffusing and constructing information about organic agriculture. E-learning is a general term used to refer to computer-enhanced learning. Citizens are influenced by the information spread by mass media, but have little say about what is presented them. An E-Learning platform would give them the opportunity to become more active, choose the information they find interesting, and make suggestions to farmers and researchers, thereby influencing the market supply of organic foods. In this way, the platform could represent a direct channel between the diverse actors involved in the system, binding the citizens with the policy and decision makers (Fig.2). The platform could deliver information about the progresses made in agricultural research, making them accessible to the average citizen and allowing them to make more responsible choices. The conventional information flow starts from University, where knowledge is produced through research and didactic. The outcome becomes available to the agricultural industry and sector by way of innovations for the market system. Innovations generate new products available to the average citizen. Products are received by consumer that can only express their satisfaction and try to influence the research activities for new products by buying or not buying the new products. With the creation of an E-Learning platform, there could be the opportunity of creating a link between all the different stakeholders appearing in the process. The advantage is that increasing the interaction among stakeholders trough a communication platform creates dialogue and the opportunity for giving and receiving feedback in an effort to improve the organic agriculture framework, facilitating the achievement of social awareness, while relying on economic, social and productive sustainability.

Improving Communication

One of the most important thing in our life is the ability to communicate with each other. Communication has evolved over millions of years through two main interaction modes: one involves co-located face-to-face communication and the other involves the use of sounds and signals alone in situation where line of sight or direct contact is hindered. Both communication modes connect synchronous communication which over millions of years evolved in complex speech. Hence complex speech has conferred evolutionary advantages (Kock, 2008). Today, the environment of communication network is changing. We communicate through media, body movement, speech, written and typed letters, and of course through computers, electronic mail and computer processed data. Speech continues to be the most important but, if people do not have the possibility to be in contact with each other and do not have the opportunity to communicate in synchronous way for geographical and time reasons, help is available with some forms of electronic devices. The rapidly growth of new communication device such as Internet, the widespread proliferation of mobile communications, and the global alliance of communication carriers, suggest that we are entering an advanced information age of true matter (Tanaka *et al*., 1998). In this view, electronics and information technology can greatly improve the quality of life in the field of alternative communication. Technological changes in infrastructure for communication networks and information tools for human-to-machine interfacing are indispensable for diversified communication services. The implementation of infrastructure technologies which support the basis of

communication networks, such as transmission and exchange, has been promoted to match changes in social needs at good cost-performance, based on the evolution of computers, software equipment and information and communication technologies (Tanaka *et al*., 1998). If from one side computer and software development have been much more easier and characterized by the technological improvement, much effort has been done to improve communication in order to match, address and fulfill these technical improvement. Communication indeed had to adjust and adapt its form to the new information device. In this context of technological improvement followed by communication and social development, E-learning is a tool largely wide spreading. E-learning is associated with the information communication technology system and has the advantage of communicate and inform people in different geographical area and with different knowledge background without discrimination. For accomplishing this target, communication has to be adapted at the different needs of people utilizing language and tools easily understandable and available such as media participatory and communication development.

Improving the Decisional Process through E-Learning

The decisional process is the expression of the human culture as concretization and coherence between thinking and action. Furthermore is the consuetudinary act giving man the ability to actively modify the environment in which he lives. Every man and every institution (coordinated group of people) is regarded as an internal context operating into an external context, i.e. a given biophysical and socio-economic environment (Fig. 3). What is inside the borderline (internal context) is taken into consideration and analyzed as a whole applying an holistic approach and a soft systems methodology (Checkland and Scholes, 1990). In this way it is not a reductionist approach but just an analysis at a different level of hierarchy. The aim of the model is to represent and explain the reality through an indivisible interconnection of parts giving a rich picture of the whole situation. The rich picture representing the whole subject of investigation has in this way a value higher than the sum of each single component present in it. The reason is in the intrinsic and extrinsic features fitting together as a whole in opposition to the reductionist vision largely applied in scientific research (Bawden, 1991). This modified context and this approach give new information for the further decisional cycle. The approach is holistic. The emphasis is pointed on the relations between components as a whole process in a space-time perspective instead of the merely analysis of the single components. Hence the systemic approach produces new knowledge that balances time and space dimension taking into consideration the cause, the consequence and the improvement of utilizing scientific research. The process starts from and ends into the given context (Fig.3) in which man and institutions (coordinated group of people) operate receiving information (input) which are elaborated and modified (output). The relationship between environment and man is cyclic and the length of the process is relaying with the persistence of the person within the context. Hence the scenario is build up in co-evolution between man and environment. All the steps bridging the transformation of information into action are embodied by individual action within the context, but are the result of the previous decisional process as well. In the flow chart the crucial point is the interpretation of the

sensorial data and their coordination and representation in what is defined as knowledge. Knowledge is the ability to build up real representative model to appreciate conscientiously in its entirety the relationship of the component within the environment in which we are living. The knowledge coming out from this process have to be further evaluated and judged to create understanding. Understanding is the ability and capability to apply knowledge in life. The whole process bridging information to understanding represents the traditional research identified as hermeneutic in philosophy and cognition in sciences. The following process bridging understanding to action is investigated by ethics. Ethics, encompassing behavior and style of life, puts into relation the whole decisional process with the incoming effect generated within the environment in which we are living. In the ethics phase, the representative ability of critical self reflection conveys at the highest rank of involvement bridging the freedom of choice among optional alternative and the willingness to execute it. This process embodies responsibility and awareness. The output of such a process is a new epistemology which represents reality as based on hierarchy and emergence giving also birth to inventiveness and creativity. Hence systemic knowledge have high explicative effect being integrative, ethical, and revolutionary and much more humanely acceptable.

In this framework E-Learning plays a crucial role to improve the decisional process. Already in the external context E-Learning provides much more accessibility and availability of information (Fig.4). There is a wider range of information in the electronic network than in conventional networks. These information represents the input for the internal context. Here the interpretation is facilitate by the E-Learning platform which gives birth to a community aimed at building up knowledge. This community creates knowledge through information exchange and shared interpretation. It has already been demonstrated how E-Learning and E-Collaboration can improve the knowledge creation (Kock, 2008). This knowledge has to be evaluated and judged to create understanding. This process is made feasible through a participatory media process. Participatory Media include (but are not limited to) blogs, wikis, RSS, tagging and social bookmarking, music-photo-video sharing, podcasts. Participatory media convey the common intent of actively involving people who are the ‘subjects’ of development in shaping the process. In this way social networks amplified by information and communication networks improve transparency. Information generated by participatory media processes is as much or even more accurate than that generated by controlled processes (Wales, 2005). That because in the perfect situation, participatory media is practiced spontaneously by people without mediation. The mediation is coming out from the process itself. In this way, communication finishes to be the simple transfer of information becoming constructivism.

Conclusions

So far E-Learning seems to be a valuable tool to improve social awareness for organic agriculture improving and increasing knowledge transfer, communication and decisional processes. E-Learning overwhelms the pre-existing gap of information between the diverse stakeholders involved in the knowledge transfer system. Going into details, creating a community E-Learning generates a participatory process. The advantage is that through a participatory media and the creation of a community, communication

contributes to a simple transfer of information reaching constructivism. Everybody can actively taking part in this process aimed at the improvement of knowledge, knowledge transfer and knowledge sharing. The possibility to give and receiving instantaneous feedback in a constructivist way represent the real innovation and value of such a tool. However for accomplishing this target E-Learning should:

- Creating a very clear understanding of the proposed action.
- Gathering feedback to determine if the course of action is acceptable and supported by (ideally) all; and if not to discover the preferred alternatives.
- Providing support and appropriate publicity as the action is being implemented.
- Keeping members informed of progress and the gathering of their reactions.
- Reporting the impact of the action.
- Assembling and sharing members' reactions to the action taken.

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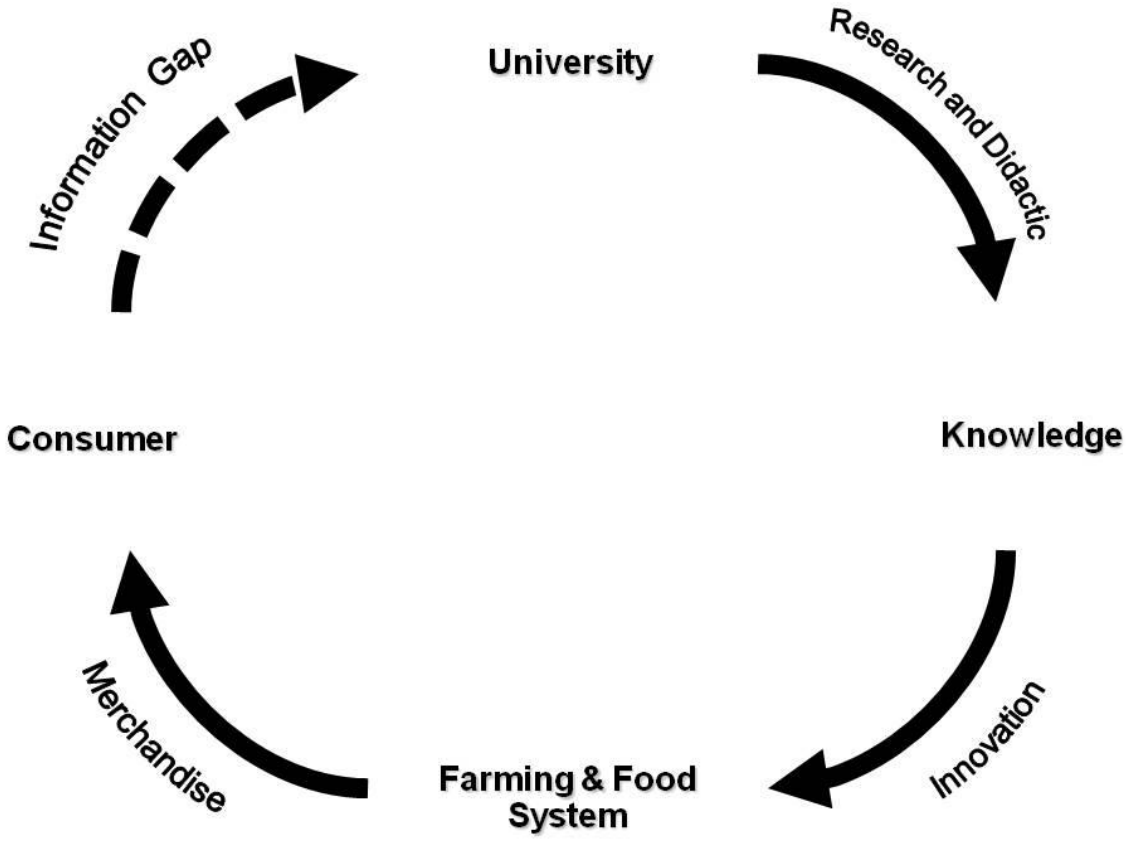

Figure 1, Information flow in the actual agriculture system

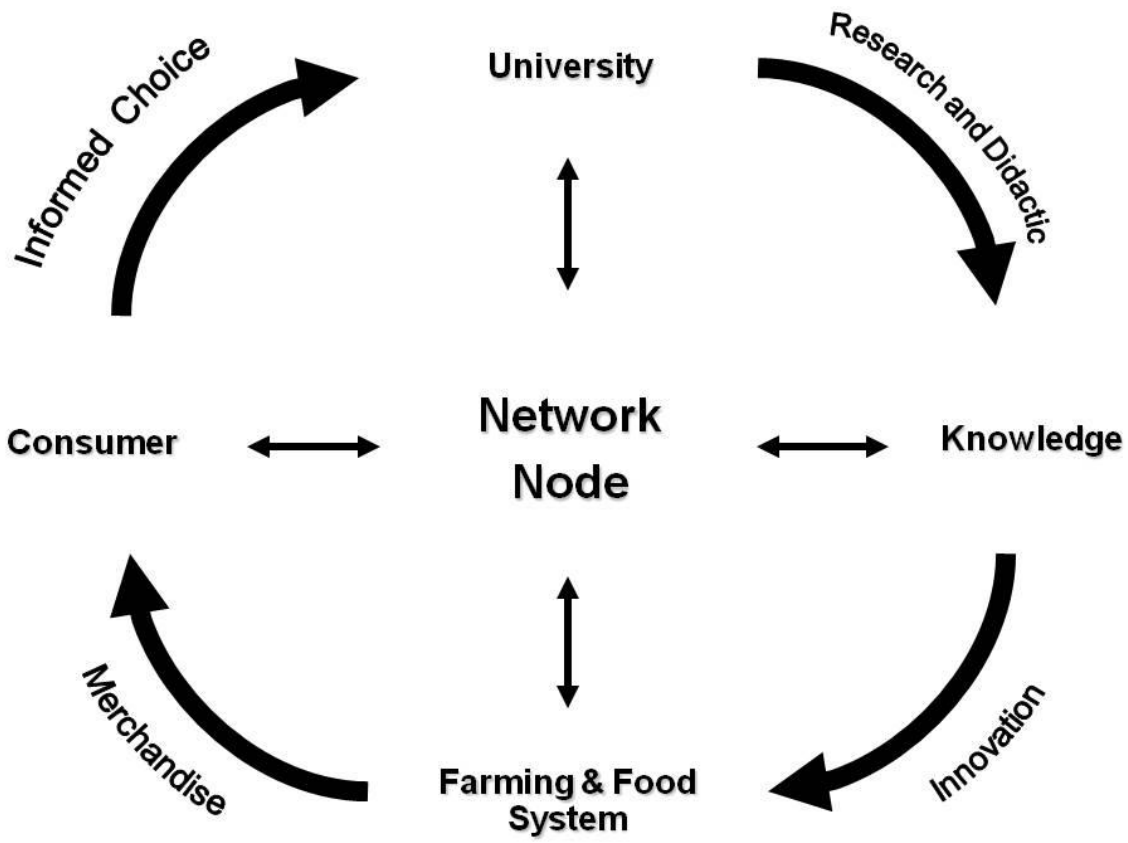

Figure 2, E-Learning as a way to improve information flow for organic agriculture

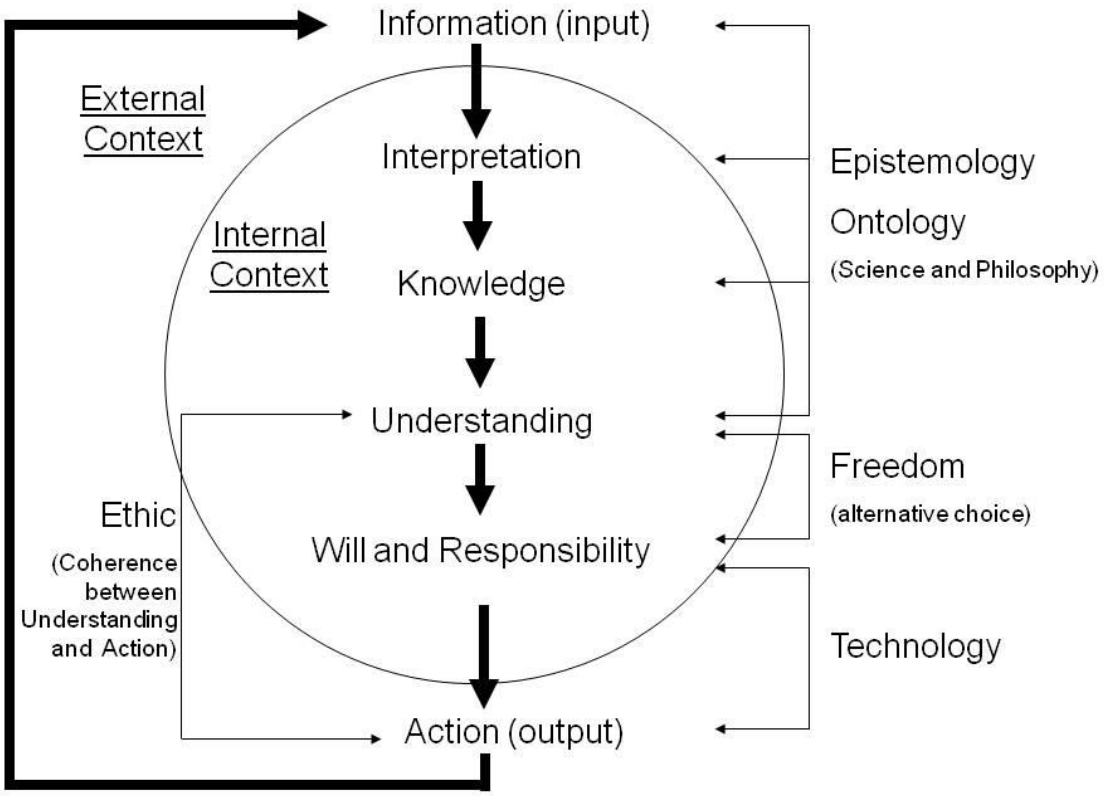

Figure 3, Decisional Process (Modified from Caporali, 2005)

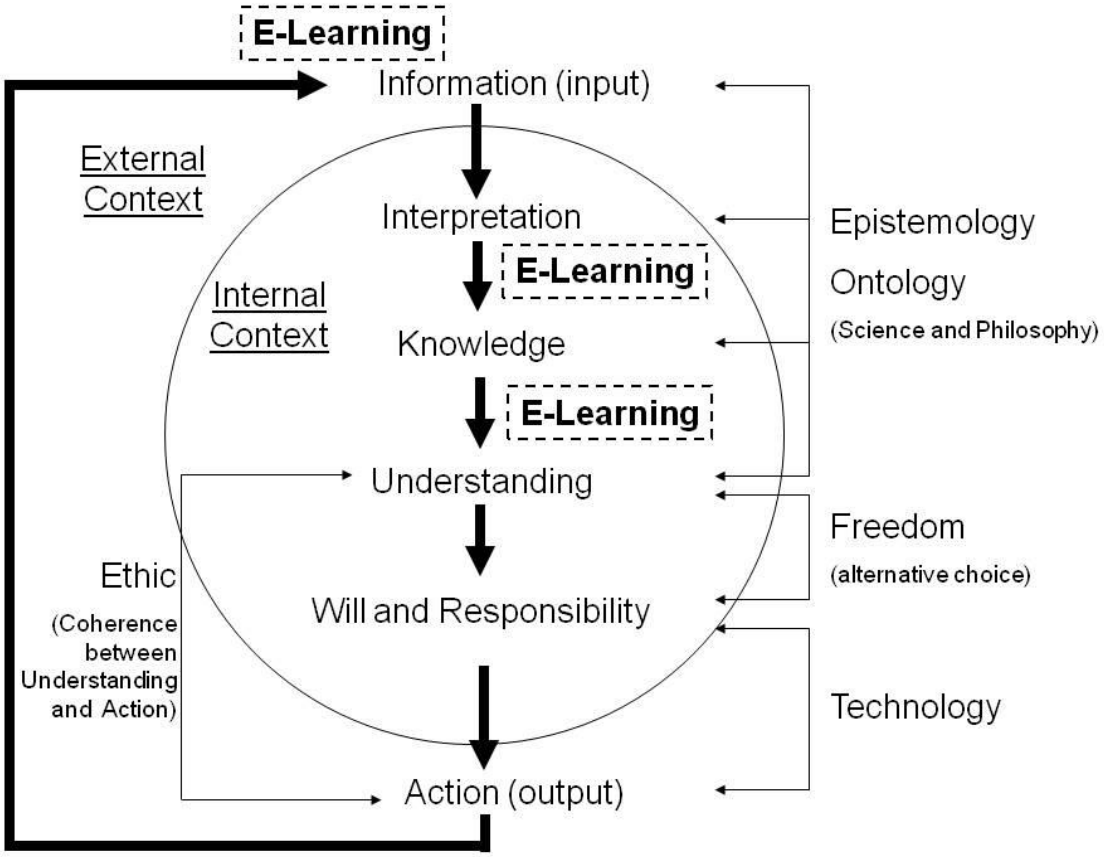

Figure 4, Decisional Process improved by E-Learning (Modified from Caporali, 2005)

ENOAT Tartu Meeting Evaluation

Ewa Rembiałkowska, Peter von Fragstein, Charles Francis

Summary of Evaluation Session, ENOAT Meeting

Tartu, Estonia, 28-30 August, 2009

Abstract

The ENOAT meeting for 2009 was held August 28-30 at a conference center some 45 km southwest of Tartu, Estonia. Here we present a summary of the participants' answers to two questions, 1) what are the benefits of participation in the workshops, and 2) how can time be spent more efficiently in future meetings? There is consensus that meeting and sharing ideas and solutions are valuable to each of us in our institutions. Ongoing challenges include lack of funding, difficulties in working across disciplines, and professional recognition of agroecology as a discipline and organic farming as a legitimate component of future food systems. Many felt that more discussions and sharing in the meeting has greater value than lengthy reports on individual country programmes, unless there are innovations that can provide ideas and alternatives to those teaching in other countries. After long discussion, it was decided that is will be important to bring new people into the ENOAT, whether through special invitation or an open invitation, and to provide a balance between the value of precedent and history as well as introducing new people and ideas into the organization. There is ongoing debate about the desirability of establishing a more formal organization, and no consensus on this issue.

Introduction

At the final session of the ENOAT meeting in Puhajarve, near Tartu, Estonia, there was a round of reflections from all participants to assess the value of the meeting and suggest plans for the future. This session was especially valuable because everyone participated, and there was a wide range of observations related to evaluation of the success of the meeting plus what could be introduced into programs for the future. Two questions were raised by the moderator:

- What are the benefits of participation in the ENOAT workshops? [current conference]
- How can time be spent more profitably in future meetings? [future conferences]

Here we provide a summary of these reflections, as taken from our notes during the round of comments. Individuals are not identified, since it is difficult to verify with each person exactly what they have said. What is presented is our interpretation of the meaning conveyed in the final session, plus a summary of key conclusions.

Evaluation of Current Tartu Meeting

There was general agreement that the meeting was successful, with some new innovations in the program such as including 1) the PhD research project presentations by Estonian students, 2) the emphasis on a special interactive session on experiential learning, and 3) an introspection on our current teaching styles and strategies on how they could be improved. We expand on these innovations by using the words of the participants.

- PhD research project reports: There was general consensus that this session was valuable, especially for the Estonian students who presented progress reports on their research. Four students gave overviews on goals, methods, results, and conclusions on their work, and some of them had been presented a few days earlier in the NJF conference in Tartu. The presentations were a chance for students to face an international audience and receive critical comments and suggestions for improving their work. We should continue this program in the future.

- Experiential learning: This interactive session was mentioned by four people as useful as a model for learning in agroecology and organic agriculture. One person said, “Where have we failed in teaching?” Also, she said that ENOAT meetings provide a “safe space” for sharing experiences, and discussing both successes and failures. Another educator remembered a similar full-day session in Mikkeli, Finland, and stressed the need for more sharing of educational methods and development of more user guides and summaries of teacher strategies. Yet another instructor urged the group to do more in our meetings with small group interactions, flip charts, and careful recording of results to share later. The explanations and background should have been more extensive, according to another participant. For a summary of the Experiential Learning session, see the chapter by Lieblein and Francis in this proceedings.

- Introspection on current teaching strategies: a number of comments on our conventional teaching approach as well as how we could improve included

    1. We most often deal with material content in a contemporary farming context, and we should learn to incorporate more of local culture into the context of learning.

2. The system view of agroecology is essential, as we design treatment of each topic and how to approach its complexity.
3. ENOAT is a convenient and safe space for frank discussion of what has gone well and what has failed in our past experience in teaching.
4. The meeting is an excellent place to share new ideas, as well as past experiences on what has worked and what has failed.
5. There is potential in these sessions to do more sharing of methods, user guides, case studies, and other teaching strategies that we have tried.
6. The small group discussions, use of flip charts and white board, and multiple chances for interaction are highly useful, but we need to be sure and record the results.
7. The sessions seem to be more valuable to 'newcomers' than to 'oldcomers', and we need ways to refresh the content as well as the methods of working together.
8. There is need to generate a list of participants early in the conference, to circulate and update this list, and to have it available to everyone early in the event.

Recommendations for Future ENOAT Meetings

Most important for future planning is the range of constructive ideas presented by meeting participants for improving future meetings. These range from the totally practical ideas of using poster presentations and having more interactive sessions, to encouraging action learning among our own participants that can have an impact on their students in the university. A brief summary of these comments follows.

- Many organizations require their faculty to be listed on the formal program and to make a presentation at the meeting in order for them to receive travel funds and be allowed to attend. This is contrary to the goal of more interactive sessions if we maintain the tradition of power point talks. A valuable alternative used by many professional societies is the poster session, where authors are listed on the official program and there is a 2-hour or other appropriate time assigned for people to stand by their posters and to circulate around to see others. This can fill the need for having a name on the official program, and also focus attention on those topics of most interest for discussion. This would be a good way to update each countries activities at a future meeting.

- There is continuing need to integrate the activities of research and teaching, and to discuss the process that is most efficient to achieve this goal. The Pieve Tesino (Italy) meetings and proceedings focused on this topic. Is there potential to develop a regional research agenda, and to pursue funding to address two or three key issues together and get EU or other funding to make this happen?

- Several people mentioned the importance of going beyond the production, economic, and environmental dimensions of organic farming and agroecology, and to address in our teaching in some explicit way the questions of ethics and values. These are often tied to beliefs, to world views, and to the emotions; some educators maintain that real learning cannot occur without including these more personal dimensions of involvement. Beyond our own courses in the university, this issue is important to moving information to a wider audience and causing change in the farming and food systems. Do we have the methods to create this type of interest and involvement? This could be a topic to explore as a major theme of a future meeting.

- There are continuing concerns about funding for teaching, grants for research, and in general the support that is needed in universities to continue to improve their programs to benefit students and other clients. Is this a topic that could be successfully explored in a future meeting?

- A suggestion was to invite one or more of our participants to design a model teaching experience and to present this at the meeting, for example a participatory/interactive lecture, including discussion, debate, and evaluation of the process.

- Several participants supported the idea of creating more interactive sessions during the meetings, sharing ideas about teaching, demonstrating methods, extending the experiential learning model, and making sure that we record the results and evaluate them.

- There now exists a critical mass of information in both teaching and research about organic farming and agroecology, and we need to explore creative ways to integrate ideas and learning methods and to share these in the meetings. We need to find new approaches to deal with the larger issues in agriculture and food systems, and to communicate our findings to the EU commissions and others who control funding.

- General agreement was found around the idea of attracting new people and new ideas to these ENOAT meetings. This may require identifying new universities to participate, or new people with innovative ideas from the current universities.

Some expressed concern that the same people met each year and discussed the same “tired ideas.” We need to establish a balance between continuity with the same people plus innovation with new people … as both are desirable.

- There was a continuing discussion about the need and/or desirability to create a more formal organization with memberships and fees, and apparently there are very strong feelings on both sides of this issue. Further discussion was postponed for future meetings.
- The new Leonardo project will be very helpful in funding regional participation in this event and others. There is also much interest in the EU for additional didactic projects, and volunteers are needed to put together creative proposals to get funding for new initiatives.

Conclusions

These conclusions are based on our notes from the meetings, but there is certainly a rich trove of information from all the participants who will share them in other articles in the proceedings. The reader is urged to go through all of the presentations in order to capture the real value of the meetings and to glean exciting ideas for the future from the various national efforts in education. We conclude with a quotation from one participant, who clearly summarized the future by paraphrasing the words of Ghandi:

If we want things to happen, we need to make them happen.

[Vibeke Langer, 2009]

Programme of ENOAT Tartu Meeting 28 – 30 August 2009

27th August, Thursday – arrival in Tartu, night in Dorpat hotel

28th August, Friday

From	To	Topic
10:00	10:45	Transit from TARTU to PÜHAJÄRVE SPA Hotel, 50 km from Tartu
11:15	11:30	Coffee break
11:30	14:00	Workshop with PhD Students from the Estonian University of Life Sciences and the Slovak University of Agriculture, Nitra
		9. Farming systems and biodiversity 10. Influence of farming systems on pests of oilseed rape and their rate of parasitism 11. Farming systems and quality of tomatoes 12. Animal welfare Speakers: (a) PhD students (b) ENOAT members
14:00	15:00	Organic lunch break
15:00	16:30	Workshop Experiential learning
		Charles Francis and Geir Lieblein „Learning from experience and reflection = how to successfully move the students from classroom to reality?" Purpose of the session is to exchange experiences of moving the students from classroom to real life, and to link these experiences with the concepts of experiential learning. We encourage everyone to bring with them experiences of taking the students out of the classrooms as part of the curriculum activities. The workshop will then consist of two parts: First these short presentations, and then an interactive workshop.
16:30	16:45	Coffee break
16:45	18:45	Workshop ORGANIC EduNet
16:45	17:45	Laszlo Csambalik / Corvinus: „Organic EduNet: Presentation of two major dissemination activities a) Rome OA ontology workshop, October 2009 b) Winter school of setting up agricultural repositories, Nov. 2009
17:45	18:45	Aage Steen Holm and Ragnar Leming: „Future tool for storing and sharing learning resources in Organic Agriculture and Agroecology - a demonstration of Confolio".

		Objective: • To demonstrate the Confolio- tool to ENOAT members to orient ENOAT members about the Organic.Edunet project and web portal with its search engine • To promote the possibility to become an affiliated partner • To get feedback on the Confolio tool in order to improve it. Requirements: Each participant needs his/her own notebook with access to WLAN
19:00	20:00	Organic dinner

29th August, Saturday

From	To	Topic
9:00	11:00	ENOAT matters
		Internal development and activities at each member's faculty
11:00	11:30	Coffee break
11:30	12:15	Summer courses 2009 and 2010 1. Slovakia June 2009 – Magda Lacko-Bartosova 2. Turkey Ege July 2009 - Ewa Rembiałkowska on behalf of Muazzez Polat 3. Poland August 2009 - Ewa Rembiałkowska 4. Poland August 2010 - Ewa Rembiałkowska
12:15	13:00	ENOAT – EduNet Moderator: Peter von Fragstein
13:00	14:00	Lunch
14:00	14:45	Leonardo LOVEt for ENOAT Moderator: Ewa Rembiałkowska
14:45	16:00	Future aims and initiatives within ENOAT common discussion Moderator: Peter von Fragstein
16:00	16:30	Coffee break
16:30	17:30	Future aims and initiatives within ENOAT common discussion Moderator: Peter von Fragstein
17:30	18:00	Final conclusions Moderator: Peter von Fragstein

30th August, Sunday

From	To	Topic
		Farm visits
09:00	16:30	Kopra farm: the largest organic sheep farm in Estonia (4500 sheep) Plant production: field vegetables and herbs
13:00	14:00	Lunch at organic farm
14:00	16:00	Alt-Lauri Organic vegetable farm (production, farm shop, local food box scheme)
17:00		Arrival at Hotel Dorpat, Tartu

31st August, Monday

From	To	Topic
		Departures

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