THE AALBORG MODEL AND PARTICIPANT DIRECTED LEARNING

Palle Qvist
Aalborg University, Denmark
E-mail: palle@plan.aau.dk

Abstract

Preparing students for a life as active citizens in a democratic society is one of the aims within the Bologna process. The Council of Europe has also stressed the importance of focus on democracy in Higher Education. Higher Education is seen as important to develop a democratic culture among students. Teaching democracy should be promoted in lessons and curricula.

It has been argued by many that practising citizenship is more effective in relation to „learning about". Universities should rather be seen as 'sites of citizenship' and democracy than promotion democracy in terms of lessons and curricula (Biesta, 2005; Biesta, 2007; Biesta & Lawy, 2006; Van der Veen et al., 2007).

Creating democratic learning systems in institutions of higher education could be the answer to reaching the aim related to democracy.

A democratic learning system can be defined as a system where decisions, processes and behaviour related to learning are established through argumentation (discussion) or negotiation (dialog), voting or consensus (alone or in combination) between those affected by the decision simultaneously reaching the learning outcomes, the technical and professional knowledge and insight. In principle the participants must be equal with equal rights and feel committed to the values of rationality and impartiality (Qvist, 2005).

The Aalborg Model practised at Aalborg University is a learning system which has collaborative democratic elements built into the model.

This paper brings results from an online quantitative, questionnaire survey between nearly 200 engineering and science students in their second semester at Aalborg University.

The main findings are: Nearly 85 percent of the respondent's state that their group uses discussions quite often or always to reach technical decisions. And a little more than 85 percent say that they use discussions to reach decisions related to project management. Almost 60 percent of the respondents state that the group is participant controlled quite often or always. Less than 4 percent are of the opinion that the group is controlled by the facilitator (quite often/always). 90 percent of the respondents are of the opinion that their group is democratic, 3 percent that it is elitist.

Key words: *democratic learning, democratic citizenship, PBL, Aalborg Model.*

Introduction

Preparing students for a life as citizens in a democratic society is seen as important objectives for the two most important European governmental institutions related to higher education – The Council of Europe and European Union. The Council of Europe has stressed the importance of focus on democracy in Higher Education and preparing students for a life in democracy is one of the aims within the Bologna process. Higher Education is seen as important to develop a democratic culture among students.

Back in 2002 a final report about universities as sites of citizenship and civic responsibility was presented to the Steering Committee for Higher Education and Research, The Council of Europe (Plantan, 2002). The study postulated the notion that universities could be important institutions in relation to democratic values and the transmission of those values to students. It could engage them in democratic activities and democratic education. The report quoted the following:

„First, students need to learn how democracy works – through participation in student organizations and university decision-making bodies, and by developing a conceptual understanding of democracy. Second, they need to learn that democracy works by experiencing that they can influence events and their own living conditions through participation." (Plantan, 2002, p. 6).

Those two task has since been promoted simultaneously by EU through the Bologna Process and The Council of Europe with the first task incorporated in the Bologna process (Fontes, 2003) and both were in the hands of the Steering Committee for Higher Education and Research within the Council of Europe (The Steering Committee for Higher Education and Research) (Huber & Harkavy, 2007).

The Bologna declaration, 1999 stated that „education and educational co-operation in the development and strengthening of stable, peaceful and democratic societies" was all over acknowledged as essential but did not mention democracy in governance of institutions within higher education (Bologna, 1999). Students were not either invited to participate in the signing meeting in Bologna. When the ministers of education meet in Prague two years later they recognised students as members of the university community. Therefore students should participate in the governance of universities as partners. Since Prague students participation in the governance of universities has been on the agenda and mentioned in the declarations from the ministerial meetings under the headline of social dimension (Prague, 2001). From the students point of view no or only a small progress in their participation has been reported and had not been on the agenda a couple of years (Benelux Bologna Secretariat, 2008).

The Council of Europe has since the late 1990's had Democratic Citizenship and Higher Education on the agenda. A Declaration and Programme on Education for Democratic Citizenship was signed in 1999. Since then the Council has arranged launched projects, conferences and published books and educational material on the subject and build partnership with e.g. american institutions and UNESCO of which the first had resulted in a network of sharing good practise. The underlying aims have among others been to create an area of shared values – a common European mentality – a spirit of being European – especially between young people. Up to 2006/2007 focus was – when it comes to higher education – both on governance and citizenship but then seems to be concentrated on democracy, citizenship, human rights and civic responsibility (universities as sites of citizenship) leaving the question about governance in the hands of the Bologna Secretariat. (COE, 2009a-h)

Terry Lewis, secretary general of the Council of Europe had motivated the engagement of the council in the subject area in the following way: Democracy has to be nurtured. It does not simply happen; it must be supported. One of the biggest challenges to democratic institutions is the growing lack of interest and disillusion among voters but populist manipulation is also a treat. In frustration voters will turn to simplistic messages, prejudice and fear.

Education for democratic citizenship is seen as one of the most important ways to counter this phenomenon. Universities and similar higher educations (HEI) are seen as developing knowledge and competence for the benefit of society as a whole besides for the individual. Higher education is seen as strategic institutions for a sustainable democratic development of society. (Rhodes, 2007).

Still there are many dictatorial regimes around the world and in many countries – also in so called old democracies – the democratic system and practices are not perfect enough. Human rights and the rule of democracy are not respected fully. The growing tendency of terrorism, intercultural and inter-religious confrontation, the threat of serious climate change and the fragmentation of societies are also mentioned as threats towards democracy and human rights. So it is argued – HEI have a key role to play in helping preserve and develop democracy, human rights and sustainability – through research and teaching (Weber, 2007).

The lesson learned from the 1990's was that democratic laws and institutions could only work in real life if they were embedded in societies with democratic culture. Members of society must have the right attitude towards democracy. And HEI have a civic mission and must contribute.

Education at all levels is seen as important to develop democratic culture and higher education is no exception. HEI are as important as other areas but the institutions are not sufficiently aware of this mission. Attention must be divided equally between preparing students for the labour marked, for personal development, for maintaining and developing knowledge per se and preparation for life as active citizens in democratic societies (Weber & Bergan, 2005; Bergan, 2008)

Klemencic is on the same track. She sees the universities as a service provider for society. Catering the knowledge economy has long overshadowed other purposes. The discourse on competences has been unbalanced and one-sided directed against fulfilling the needs of the workplace and not enough on citizenship and fulfilling personal life. There is an imbalance on the agenda. Preparing students for the private and public labour market, personal development, democracy and citizenship in diverse societies are equal outcomes for higher education. Those competences require knowledge and understanding, skills and values committed to democracy. Development of these competencies should be integrated into teaching, research and public service functions of higher education. Traditional classroom teaching is not seen as the effective way (Klemencic, 2008).

It has been argued by many that practising citizenship is more effective in relation to „learning about". Learning by doing or practicing participation is more preferred than teaching in the classroom. It means that universities should rather be seen as 'sites of citizenship' and democracy than promotion democracy in terms of lessons and curricula. (Biesta 2007; Biesta 2005; Biesta & Lawy 2006; Van der Veen et al., 2007).

Different forms of collaborative learning systems have this idea build into curriculum and lessons. Students learn best when they are actively involved (Davis, 1993). The Aalborg Model practised at Aalborg University is a learning system which has collaborative democratic elements built into the model.

The Aalborg Model

A semester at Aalborg University is approx. 5 month. Half of the learning hours the students are involved in course activities while the other half is used in project groups writing a common academic project which is problem based. 50 percent of the learning is taught in traditional classes and 50 percent of the learning is collaborative and takes place in group rooms. It means that the Aalborg Model is not a full problem based learning model.

The model is based on principles. They are very important for the identity of the university and are to some degree protected and safeguarded. There are 9 principles within the model. The principles are related to the academic work and to the social organisation of the learning. The principles related to academic work are: problem orientation, a written project each semester, interdisciplinarity, exemplarity, participant direction and 1(-2) facilitators for each group. To social organisation they are: group work, one room for each group, group size: 6-8 and later 2-3.

The Aalborg Model is mainly implemented at the Faculties of Engineering, Natural Science and Medicine although all study boards in these faculties do not practise the model in similar ways. At other faculties there are study boards which practise a reduced model with some of the principles excluded or weakened.

Problem orientation means, that the starting point for learning is a problem. The end point – the learning objective of the learning process – is the solving of the problem. The process and the outcomes are materialised in an academic report – called the project or the project report. A report is approximately 50-100 pages according to the decision of the study board or the number of students in the group.

Problem orientation does not mean solving tasks, solving cases, reading explicit theories or knowing explicit methods defined by a study board or a professor.

Interdisciplinarity means that the solution to a problem seldom is found within one discipline. Real life problems do not accept the academic disciplines. It is the same with solutions

to problems. Problems are normally best described and understood interdisciplinary.

Exemplarity is an important concept but there is no agreement about the content of the concept. It means – according to some – that it is not necessary to go through all the general theory in order for students to get an understanding of the subject area covered by the theory. By going deep into a specific problem it is possible to grasp the generality of the problem. By dealing with problems – and go deep into those problems – it is possible to learn and understand general structures related to the subject area.

Exemplarity is by others understood as a way to learn about society and social structures, through problems from the world of the students and their social reality.

Again for others this type of difference is not important. What counts – in relation to the output of the learning process, the learning of the single student – is that the student must have learned sufficient to have en general subject-area overview.

Participant direction means, that it is the participants which directs their own learning. It happens within the overall frame decided by the study boards. The study board decides the area or subject areas. It is then up to each group to agree on and choose a problem within the subject area. The students direct themselves in the groups. Facilitation is approximately one hour a week. The idea is, that the students uses the facilitator as a resource together with resources as libraries, internet, courses etc. In principle the students are responsible for their own learning and they must negotiate with each other to find out what to learn and how to solve the selected problem.

Participant direction also means that the students form groups on their own. The students plan and manage the process and investigate the problem selected theoretically and empirically by employing correct scientific methods. A scientific written report is produced as output and basis for final evaluation – an individual oral exam (Kjersdam & Enemark, 1997; Kolmos et al., 2004; Krogh et al., 2008; Kolmos et al., 2008; Spliid & Qvist, 2009).

Democracy and Managing the Project

The democratic elements in the model are related to the management of the written project and the team. The group members establish between themselves a democratic culture as part of the participant directed responsibility for own learning and team management.

Before they arrive at the university the students have practised project and team work in the high school (secondary school) level (although in small scale and in small groups, 2–3 in each). The use of project management tools is limited.

Supporting the writing of the project and managing the process the students at The Faculties of Engineering, Science and Medicine are attending a project management course of 2,2 ECTS (2009) lasting 2-4 hours during 11 weeks – typical 8/9 times in their first semester and 2/3 in the second semester. The rest of the time it is learning project and team management by doing. The aim of the course is:

„to support the students, theoretical as well as practical, in planning and practice a problem and project based group work and reflect own and group learning" (Det Ingeniør-, Natur- og Sundhedsvidenskabelige Basisår, 2009 pp. 95-96).

The outcomes are defined as:

„- Analyse the organising of the collaboration within the group and identify strong and week elements and propose suggestions to how the collaboration could be improved
- Reflect over causes and possible solutions to conflicts in the group
- Analyse and evaluate own study capabilities and learning concerning identifying strong and weak elements and consider future studies and own capabilities
- Recall techniques for planning and managing a project".
(Det Ingeniør-, Natur- og Sundhedsvidenskabelige Basisår, 2009 p. 96)

The course is evaluated through a process analysis and as part of the project exam. The exam is individual and based on the project report (Det Ingeniør-, Natur- og Sundhedsvidenskabelige Basisår, 2009).

The project group is the important unit when it comes to learning. The group members create their own organisation as part of their responsibility for their own learning. It means that they from day one build an organisation. They must make decisions and agree on e.g.: Should the group have a flat structure or should a project manager be appointed? If so which competences should the manager have? Should the role rotate during the project? Which other team roles are needed? Should they rotate as well? How should the decisions be made? By consensus and dialogue or is voting also accepted? How often should the group meet? And what about the meeting culture and ethics in discussions? How often and how should the process be evaluated? How should the relation to the facilitator be handled? Is a contract needed for this relationship and for the relationship within the group between the group members? How should knowledge, literature and files in relation to the project be shared? How should the writing process be from the first draft, to discussions with the facilitator until the final paper?

The project must be handled as well. The aim of the project is as mentioned previously to solve a problem. The solution is materialised in e.g. a scientific report and/or the construction of a model or even a product. The group must agree on the problem and formulate a problem statement which documents or identifies the problem. Possible theoretical solutions to the problem must be outlined using project management's tools as brainstorm or similar creativity techniques to identify solutions. Tasks must be identified as well as resources requirements e.g. books and articles to be read, courses to consult, facilitation meetings to be scheduled and external contacts established. The project schedule must be estimated with the identified tasks. Group members must be allocated to the tasks and given a deadline. Everything must be documented in activity diagrams, milestone calendars, Gantt charts or equal kinds of diagrams or charts to be used to keep the project on track during the execution.

During the execution of the project the group members are in close contact. They are sitting in their group room at the university, meet regularly at home or use the common meeting facilities at the university. During the group meetings the group members report to each other about the performing of tasks and progress. They share knowledge and discuss action to be taken. They prepare drafts which they discuss between themselves and at meetings with their facilitator. This phase involves a lot of risks for the students, risks which they must try to control. They might have problems with providing the relevant literature from the library, convincing the facilitator about their problem solving or the scientific value of the written report, getting access to labs or information from the external stakeholders with whom they are in contact. On top of that problems and disagreement or even conflicts between the students of the group may occur. Keeping the project on the planned course involves time and efforts of the students. When the project is finished and the deadline reached it is time for the study group to prepare the examination and a process analysis. The aim of the process analysis is to close down and evaluate the project properly. Did the project reach its goals? Which lessons could be learned for the next project to come? When finished, the project and the group have gone through the phases of initiation the project, planning, execution and closure.

A group within the Aalborg Model is a communication community. It is in principle free and without supremacy in relation to learning and project and team management. It is autonomic within the frames decided by the study boards and the curriculum. It is limited by the fact that it at the exam is responsible for selections and decisions during the learning process. But within the group the members make decisions about learning, project management and behaviour after argumentation (discussion) or negotiation (dialog), voting or consensus (alone or in combination) between the group members. In principle the group members are equal with equal rights. It is presumed that the members when they argue negotiate and make deals feel committed to the values of rationality and impartiality (Qvist, 2006).

It does not mean that facilitators or individual group members cannot act elitist. The facilitator can act in a dominating way or dominating group members can run the group. But the group constitutes a field (Bourdieu, 1979) or a system were:

„decisions, processes and behaviour related to learning are established through argumentation (discussion) or negotiation (dialog), voting or consensus (alone or in combination) between those affected by the decision simultaneously reaching the learning outcomes, the technical and professional knowledge and insight. In principle the participants must be equal with equal rights and feel committed to the values of rationality and impartiality" (Qvist, 2008, p. 1).

Structured as well as unstructured discussions are important methods used by groups in the Aalborg Model to reach agreement needed for action.
Discussions can be defined as:

"a particular form of group interaction where members join together in addressing a question of common concern, exchanging their knowledge or understanding, their appreciation or judgement, their decision, resolution or action over the matter of issue"(Marri, 2003, p. 273).

Discussions as pedagogical method are recommended by many (Marri, 2003). The reasons are:

"(1) It can help young people develop the group discourse skills and dispositions necessary for participatory citizenship in a multicultural democracy.
(2) It enhances critical thinking
(3) It deepens understanding of important democratic issues and concepts.
(4) It develops a more democratic classroom community.
(5) It influences future political participation." (Marri, 2003, pp. 273–274).

Possibility to express one selves and possibilities for discussions before technical or professional decisions or decisions related to the process is typical for democratic learning systems.
An important precondition – although not a guarantee – for running a group in a democratic way is that the group uses procedures for decision making which respect the integrity of all members, respecting the right of each group member to take part in discussions, to introduce whatever subject and to question whatever allegation. These rights must not be restricted.
Major decisions are typical discussed afterwards with the expert, the professor which acts as facilitator. In this phase the group faces the risk to turn to be run elitist by the professor. If the professor objects to the selections or decisions made by the group without clear and understandable arguments and it is accepted by the group without further discussion as a state of law the group has lost its control of the learning. If it happens many times it is not possible to say that the groups are self governed and run by the group members.
The preferred procedure – when groups meet criticism from the facilitator – is to discuss the matters once again with the purpose to find solutions or reach acceptance which can resist technical or professional critique from the professor.
Facilitation in a democratic learning system is an act of balance. On one site the respect for scientific knowledge and on the other group self government and responsibility for own learning.
The facilitator must be responsive to decisions made by the group related to scientific as well as process matters. Although facilitation is not a democratic process the professor acting as facilitator must ague to convince the group if it is on the wrong track.
The group members must also argue for their choices and try to convince the facilitator – especially if they trust other theories or methods and other ways of doing things – than supported by their facilitator. Because the facilitator is the academic expert it is always a risk that the group is overruled or even forced by the facilitator to take specific academic theories, methods or viewpoints – not only in relation to scientific outcomes of the group – but also when it comes to the question

of how to manage the process. The facilitator might be tempted to use academic authority and act as a „dictator" and control the group.

Collaboration in the groups in the Aalborg model is as ideal a democratic exercise, between the group members but also between the group and their facilitator. Agreement must be reached between the group members in relation to project management and the scientific work – the paper project which is produced as part of the process. But also with the facilitator although the facilitator has the possibility to overrule the students in an undemocratic way.

But democratic collaboration is not only an ideal. It is also ordinary practise within the group between the group members. It is what research into the subject has shown.

Methodology of Research

A questionnaire was distributed online to all the students – totally 833 – in their second semester (April 2008) at the Aalborg Campus of the Schools of Basic, Faculties of Engineering, Science and Medicine. The questionnaire contained a short description of the research project and asked for the help of the students by answering the questionnaire. The students had been enrolled at the university for 8 months. They had been collaborating and writing their first project report (up to 80 pages) which was finalized at the end of the first semester. At that time they were still beginners without much experience in project and team management. Between the first and the second semester the students changed groups. When the questionnaire was distributed the students were collaborating and writing on their second project report (up to 100 pages). They were now trained beginners with some experience in project and team management. They had accumulated learning, skills and methods used within management of projects and teams.

Responding to the questionnaire was voluntarily. 174 students completed the questionnaire and 17 completed it partly. It means that between 21 and 23 percent of the student has answered. The data was processed in SurveyXact [Rambøll, 2009]. The results are shown in table 1-6 with the confidence interval indicated by +/- in the last column of each table (confidence level: 95%). (The results of an average analysis is at the end of the paper).

Results of Research

Discussions in relation to decision making in the groups are responded to be used very much, related both to technical decisions and to project work and management. Table 1 and Table 2 shows that the students respond that discussion are used in a high degree. More than 8 out of 10 students say that they „Quite often" or „Always" use discussions to reach technical decisions. Almost the same result is seen when it comes to decisions related to project work (Table 2) although the percent is higher when the answer is „Always" compared to „Always" in Table 1.

Even if it is an ideal that the students uses discussions to reach decisions there is students which reports that it happens „In a small degree" in their group.

Tabel 1.   In the group we use discussions to reach technical decisions.

	Respondents	Percent
No	0	0.0 ± 0.0
In a small degree	6	3.2 ± 2.5
In some degree	24	12.9 ± 4.8
Quite often	93	50.0 ± 7.2
Always	62	33.3 ± 6.8
Do not know	1	0.5 ± 1.1
Total	186	100.0

Tabel 2.   In the group we use discussions to reach decisions related to project work.

	Respondents	Percent
No	0	0.0 ± 0.0
In a small degree	3	1.6 ± 1.8
In some degree	25	13.4 ± 4.9
Quite often	82	44.1 ± 7.1
Always	76	40.9 ± 7.1
Do not know	0	0.0 ± 0.0
Total	186	100.0

More than half of the respondents and maybe more than 2 out of 3 are ready to call the group democratic. In their group decisions are „Always" discussed and everybody can participate (Table 3). If respondents answering „Quite often" and „Always" are added it is 9 out of 10 respondents which would call their group democratic.

Tabel 3.   The group is democratic (decisions are discussed and everybody can participate).

	Respondents	Percent
No	1	0.6 ± 1.1
In a small degree	2	1.1 ± 1.6
In some degree	14	7.9 ± 4.0
Quite often	52	29.4 ± 6.7
Always	108	61.0 ± 7.2
Do not know	0	0.0 ± 0.0
Total	177	100.0

Although the big majority of the respondents see their group as democratic, it might be a few strong students or the facilitator which take the decisions. As seen in Table 4 a few are of the opinion that their group is elitist (decisions are seldom discussed and reached by few).

Tabel 4.   The group is elitist (decisions are seldom discussed and are reached by few).

	Respondents	Percent
No	96	54.2 ± 7.3
In a small degree	55	31.1 ± 6.8
In some degree	16	9.0 ± 4.2
Quite often	3	1.7 ± 1.9
Always	5	2.8 ± 2.4
Do not know	2	1.1 ± 1.6
Total	177	100.0

A litlle more than 3 percent (Table 5) think that their group are run by the facilitator („Always" and „Quite often"). Nearly 1/3 of the students is of the opinion that it is not the facilitator which directs or control the group („No") while nearly half of the students respond that the facilitator directs or control the group a little („In a small degree"). It corresponds to the results shown in Table 6.

Tabel 5.   The group is directed/controlled by the facilitator.

	Respondents	Percent
No	56	32.2 ± 6.9
In a small degree	76	43.7 ± 7.4
In some degree	23	13.2 ± 5.0
Quite often	6	3.4 ± 2.7
Always	0	0.0 ± 0.0
Do not know	13	7.5 ± 3.9
Total	174	100.0

Nearly 60 percent (Table 6) respond that their group is participant directed and controlled („Always" and „Quite often") although some of the respondents answers that they „Do not know".

Table 6.   The group is participant controlled/directed.

	Respondents	Percent
No	5	2.9 ± 2.5
In a small degree	15	8.6 ± 4.2
In some degree	24	13.8 ± 5.1
Quite often	61	35.1 ± 7.1
Always	42	24.1 ± 6.4
Do not know	27	15.5 ± 5.4
Total	174	100.0

Surprising is that nearly 17 percent answers „Quite often" or „In some degree" to the statement: „The group is directed/controlled by the facilitator" (Table 5). And equally almost 12 percent answers „No" or „In a small degree" to the statement: „The group is participant controlled/ directed" (Table 6). It means that there – even in a democratic learning space as the Aalborg Model – is room for control by the facilitator.

Conclusion

Leading international governmental organisations as UNESCO, The European Council and the European Union has during the last 10 years or more tried to launch a new paradigm within higher education: education for democratic citizenship. Higher education is seen as a strategic institution for a sustainable democratic development of society. Universities must as service providers support democracy and help create knowledge, understanding, skills and values committed to democracy.

Learning by doing is more effective than „learning about" also when it comes to knowledge, understanding, skills and values committed to democracy. Promotion democracy in terms of lessons and curricula is insufficient. Universities should in stead be seen as sites of citizenship.

The Aalborg Model is one by more collaborative learning systems which have democratic elements build into the model. Democracy is practiced in the project groups where the student organise their own learning and process management from the first year. A great majority of the freshmen respond to a questionnaire that their group is democratic – decisions are discussed and everybody can participate, decisions are not taken by a few or the facilitator.

Nearly 85 percent of the respondent's state that their group uses discussions quite often or always to reach technical decisions. And a little more than 85 percent say that they use discussions to reach decisions related to project management. Almost 60 percent of the respondents state that the group is participant controlled quite often or always. Less than 4 percent are of the opinion that the group is controlled by the facilitator (quite often/always). 90 percent of the respondents are of the opinion that their group is democratic, 3 percent that it is elitist.

The students run to a large extension the group themselves. Nevertheless almost 17 percent respond that the facilitator are controlling the group quite often or in some degree. It indicates that democracy does not come by itself. Democratic learning is not easy. It must be nurtured – between students as well as professors.

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Appendix

Table 7.   Average analysis.

	Observed minimum	Observed maximum	Average	Respondents
In the group we use discussions to reach technical decisions	2.00	6.00	4.15	186
In the group we use discussions to reach decisions related to project work	2.00	5.00	4.24	186
The group is democratic (decisions are discussed and everybody can participate)	1.00	5.00	4.49	177
The group is elitist (decisions are seldom discussed and are reached by few)	1.00	6.00	1.71	177
The group is directed/controlled by the facilitator	1.00	6.00	2.18	174
The group is participant controlled/ directed	1.00	6.00	4.16	174

Adviced by Lars Bo Henriksen, Aalborg University, Denmark

Palle Qvist   Mag. art., Associate Professor, Aalborg University, Fibigerstraede 13, DK-9220 Aalborg Ø Denmark.
E-mail: palle@plan.aau.dk
Website: http://people.plan.aau.dk/~palle/